Attachment General-1a, Part 1

Pennsylvania Chapter 105 General Permit Application (GP-5/8) Permit Application Forms and Documentation, Allegheny County

Allegheny County Conservation District GP Comment Response Package

Chapter 105 Water Obstruction and Encroachment Join Permit Application, H-318 Wetland W-BB7 Crossing Project, Allegheny County Pennsylvania

Pennsylvania Chapter 105 General Permit Application (GP-5/8) Permit Application Forms and Documentation, Greene County

Attachment General-1a, Part 1

Pennsylvania Chapter 105 General Permit Application (GP-5/8) Permit Application Forms and Documentation, Allegheny County

***Equitrans*, LP**
Equitrans Expansion Project – Allegheny County

Pennsylvania Chapter 105 General Permit Application (GP-5/8) Permit Application Forms and Documentation

Prepared for: Equitrans, LP
625 Liberty Avenue
Suite 1700
Pittsburgh, PA 15222

Prepared By: Tetra Tech, Inc.
661 Andersen Drive, Suite 200
Pittsburgh, Pennsylvania 15220

October 2015

TETRA TECH

TETRA TECH

PITT-10-15-051

October 27, 2015

Project Number: 212IC-PB-00176

Allegheny County Conservation District
Attn: Mr. Matt Gordon
33 Terminal Way, Suite 325B
Pittsburgh, PA 15219

RE: Application for Chapter 105 General Permits 5 & 8
Equitrans, LP
Equitrans Expansion Project
Forward Township, Allegheny County

Dear Mr. Gordon,

Equitrans, L.P. (Equitrans) is seeking a Certificate of Public Convenience and Necessity from the Federal Energy Regulatory Commission (FERC or Commission) pursuant to Section 7(c) of the Natural Gas Act authorizing it to construct and operate the Equitrans Expansion Project (Project) located in three counties in Pennsylvania and one county in West Virginia. Equitrans plans to construct approximately 7.87 miles of pipeline (at multiple separate locations), a new compressor station, an interconnect with the proposed Mountain Valley Pipeline (MVP), and ancillary facilities. In addition, Equitrans is seeking authorization pursuant to Section 7(b) of the Natural Gas Act to abandon an existing compressor station following the construction of the new compressor station.

The Project is designed to transport natural gas from the northern portion of the Equitrans system south to the new interconnect with MVP, as well as to existing interconnects with Texas Eastern Transmission, LP (Texas Eastern), Dominion Transmission, Inc., and Columbia Gas Transmission, LLC. The Project will provide shippers with additional flexibility to transport natural gas produced in the central Appalachian Basin to meet the growing demand by local distribution companies, industrial users, and power generation facilities located in local, northeastern, Mid-Atlantic, and southeastern regions of the United States. The Project will also increase system reliability, efficiency, and operational flexibility for the benefit of all Equitrans customers. The Project is designed to add up to 600,000 dekatherms per day of north-south firm capacity on the Equitrans system.

Please see the enclosed application for Chapter 105 General Permits for impacts within Allegheny County. Please note that the following information will be submitted at a later date:

- Erosion and Sediment Control Plan – The extent of earth distrubance is shown on the figures included in this application. An Erosion and Sediment Control General Permit will be submitted in December 2015.

- PNDI Clearance - A large project PNDI was submitted to the PA Department of Conservation and Natural Resources (DCNR), PA Fish and Boat Commission, PA Game Commission, and US Fish and Wildlife Service (USFWS) on June 24, 2015. Field surveys are currently underway and will be completed Summer 2016. Please refer to the Project Description in Section 8 for a summary of the status of surveys.

Tetra Tech, Inc.
661 Andersen Drive, Pittsburgh, PA 15220-2700
Tel 412.921.7090 Fax 412.921.4040 www.tetratech.com

- SHPO Clearance – Notifications were submitted to the PA Historical and Museum Commission and reviews of the online Pennsylvania Cultural Resources Geographic Information System (CRGIS) were conducted in April 2015. The CRGIS review found that eight archaeological sites have been inventoried within 0.25 mile of the Project. None of these sites are situated within the direct effects study area. A Phase I survey to identify archaeological cultural resources located within the APE for direct effects was undertaken in August and September 2015. The Phase I archaeological survey report and site forms requesting state site numbers from PHMC are in preparation and will be submitted to PHMC by early November 2015.

In addition, a Submerged Lands License Agreement Request has been prepared for the crossing of the Monongahela River.

Finally, since this is a FERC project, a Water Quality Certification under Section 401 of the Clean Water Act has been prepared for this Project.

Please let me know if you have any questions during your review. I can be contacted directly at 412-921-8051 or via email at heather.trexler@tetratech.com.

Sincerely,

Heather Trexler, P.G.

HT/clm

Enclosures:
CC: Stephanie Frazier, Equitrans

ALLEGHENY COUNTY CONSERVATION DISTRICT

Conserving Natural Resources for Our Future

Application for Erosion and Sediment Pollution Control Plan Adequacy Review

Chapter 105

This application must be completed and accompanied by the required fees, plans, and narratives to be considered for technical review!

Project Name: Equitrans Expansion Project

Municipality: Forward Township Municipal Engineer: _____

Total Project Acreage (basis for fees – see Review Fee Schedule): _____

Total Disturbed Acreage: 90 +/- Impacted Watershed: Monongahela River, Bunola Run, Kelly Run

Existing Permits: _____

Fees Required for Plan Review

Please submit the following fees with this application for plan review (see attached Review Fee Schedule):

- A check or money order payable to Allegheny County Conservation District for the initial review fees

Initial Review Fee: $400

River Walk Corporate Centre | 33 Terminal Way, Suite 325b | Pittsburgh, PA 15219
T: (412)241-7645 | F: (412)242-6165 | conservation@accdpa.org | www.accdpa.org
Follow us at: www.facebook.com/accdpa

ALLEGHENY COUNTY
CONSERVATION DISTRICT

Conserving Natural Resources for Our Future

Applicant: Equitrans, LP (Stephanie Frazier)

Email: sfrazier@eqt.com Phone: 412-553-5798

Address: 625 Liberty Ave, Suite 1700

City: Pittsburgh State: PA Zip: 15222

Landowner(s): _____ Phone: _____

Address: _____

City: _____ State: _____ Zip: _____

Responsible Party for Earthmoving: To Be Determined Phone: _____

Address: _____

City: _____ State: _____ Zip: _____

The Landowner(s) agree to comply with all the requirements of the Commonwealth of Pennsylvania, Title 25 [Clean Streams Law], Chapter 102 [Erosion and Sediment Pollution Control Rules and Regulations], and to obtain any other permits which may be required by Federal, State, County or Municipal Law or Ordinance.

Landowner(s) Signature(s): for Stephanie Frazier

Date: 10/26/15

THE COMPLETE PLAN CHECKLIST IS ATTACHED ON THE BACK OF THIS PAGE. ALL ITEMS LISTED ON THE CHECKLIST MUST BE INCLUDED IN THE PLAN SUBMITTAL OR THE PLAN WILL NOT BE CONSIDERED FOR TECHNICAL REVIEW.

River Walk Corporate Centre | 33 Terminal Way, Suite 325b | Pittsburgh, PA 15219
T: (412)241-7645 | F: (412)242-6165 | conservation@accdpa.org | www.accdpa.org
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COMPLETE PLAN CHECKLIST – Non-NPDES Permits

1. Topographic Features of the Project Area

- [x] The existing topographic features of the project area and surrounding area are shown on plan maps included in the drawings
- [x] A location map has been provided (U.S.G.S. Quadrangle)

2. Types, Depth, Slope, and Extent of Soils

- [ ] A soils map has been provided
- [ ] Physical characteristics of the soil are addressed in the narrative

3. Proposed Alteration to the Area

- [ ] The limits of the project are shown on the plan drawings
- [ ] Existing and proposed contours are shown on plan drawings

4. Amount of Runoff from the Project Area and Upstream Watershed

- [ ] Calculations are provided showing anticipated peak flows for the design storms

5. Staging of Earth-moving Activities

- [ ] Detailed step-by-step construction sequence has been provided

6. Temporary Control Measures and Facilities

- [ ] Plan map(s) show locations of proposed temporary control measures and facilities
- [ ] Construction details have been provided
- [ ] Supporting computations have been provided

7. Permanent Control Measures and Facilities

- [ ] Plan map(s) show locations of proposed permanent control measures and facilities
- [ ] Construction details have been provided
- [ ] Supporting computations have been provided

8. Maintenance Program

- [ ] A maintenance program has been provided

9. Complete Plan Sets

- [ ] One (1) set of the Erosion and Sediment Pollution Control Plan sheets and narrative

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ALLEGHENY COUNTY CONSERVATION **207687** 10/23/2015 **1777005**

INVOICE NO.	INVOICE DATE	DESCRIPTION	NET AMOUNT
102315	23-OCT-15	PERMITTING FEES	$4,675.00
			***$4,675.00

THE FACE OF THIS DOCUMENT CONTAINS A VOID PANTOGRAPH AND MICROPRINTING

TETRA TECH

TETRA TECH, INC.
1000 The American Road
Morris Plains NJ 07950
973-630-8000

WELLS FARGO BANK, N.A.
Positive Pay Protected
56-382/412
VOID AFTER 90 DAYS

1777005
10/23/2015

PAY ***FOUR THOUSAND SIX HUNDRED SEVENTY-FIVE DOLLARS AND ZERO CENTS***** *****$4,675.00***

TO THE ORDER OF
ALLEGHENY COUNTY CONSERVATION
DISTRICT
33 TERMINAL WAY STE 325B
PITTSBURGH, PA 15219,

Stan Burkhart

⑈1777005⑈ ⑆041203824⑆ 9600048505⑈

ALLEGHENY COUNTY CONSERVATION **207687** 10/23/2015 **1777004**

INVOICE NO.	INVOICE DATE	DESCRIPTION	NET AMOUNT
10232015	23-OCT-15	PERMITTING FEES	$400.00
			***$400.00

THE FACE OF THIS DOCUMENT CONTAINS A VOID PANTOGRAPH AND MICROPRINTING

TETRA TECH

TETRA TECH, INC.
1000 The American Road
Morris Plains NJ 07950
973-630-8000

WELLS FARGO BANK, N.A.
Positive Pay Protected
56-382/412
VOID AFTER 90 DAYS

1777004
10/23/2015

PAY ***FOUR HUNDRED DOLLARS AND ZERO CENTS***** ***$400.00*

TO THE ORDER OF
ALLEGHENY COUNTY CONSERVATION
DISTRICT
33 TERMINAL WAY STE 325B
PITTSBURGH, PA 15219,

Stan Burnett

⑈1777004⑈ ⑆041203824⑆ 9600048505⑈

TABLE OF CONTENTS

SECTION

LIST OF ACRONYMS

E&SCP	Erosion and Sedimentation Control Plan
GP	General Permit
GPR	General Permit Registration
ISO	International Organization for Standardization
HQ	High Quality
LOD	Limits-of-Disturbance
mi	Mile
NAD	North American Datum
PA	Pennsylvania
PADEP	Pennsylvania Department of Environmental Protection
PASPGP-4	Pennsylvania State Programmatic General Permit #4
PEM	Palustrine Emergent
PFBC	Pennsylvania Fish and Boat Commission
PFO	Palustrine Forested
PNDI	Pennsylvania Natural Diversity Inventory
Project	Equitrans Expansion Project
PSS	Palustrine Scrub-Shrub
PUB	Palustrine Unconsolidated Bottom

Rd.	Road
ROW	Right-of-Way
St.	Street
Tetra Tech	Tetra Tech, Inc.
WWF	Warm Water Fishes

SECTION 1.0

GENERAL PERMIT REGISTRATION FORM

3150-PM-BWEW0500 Rev. 2/2014
Form

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERWAYS ENGINEERING AND WETLANDS

CHAPTER 105
GENERAL PERMIT REGISTRATION

TYPE OF GENERAL PERMIT: ☒ **New Permit**
PLEASE MARK ("X") ONE: ☐ **Transfer of Existing Permit** *(Complete Section A, C & H below and all of form 3150-PM-BWEW0016)*

PLEASE MARK ("X") ALL THAT APPLY:

- ☐ GP- 1 Fish Habitat Enhancement Structures
- ☐ GP- 2 Small Docks & Boat Launching Ramps
  - **Please mark ("X") the specific type of project:**
    - ☐ private recreational dock
    - ☐ public access facility
    - ☐ public service facility
    - ☐ other private or commercial facility
- ☐ GP- 3 Bank Rehabilitation, Bank Protection and Gravel Bar Removal
- ☐ GP- 4 Intake and Outfall Structures
- ☒ GP- 5 Utility Line Stream Crossing
- ☐ GP- 6 Agricultural Crossings & Ramps
- ☐ GP- 7 Minor Road Crossings
- ☒ GP- 8 Temporary Road Crossings
- ☐ GP- 9 Agricultural Activities
- ☐ GP-10 Abandoned Mine Reclamation
- ☐ GP-11 Maintenance, Testing, Repair, Rehabilitation, or Replacement of Water Obstructions and Encroachments (reviewed by DEP Regional Office only)
- ☐ GP-15 Private Residential Construction in Wetlands

☒ **Activity Related to Oil and Gas Exploration, Production or Transmission**

☒ **Activity Subject to FERC approval (Docket number** CP16-00) ☐ **FERC Natural Gas Act Facility**

SECTION A. APPLICANT INFORMATION

Applicant's Name / Client	**DEP Client ID#** (if known)	**Employer ID#** (EIN)
Equitrans, LP	**163329**	**251776875**

Client Information - Please select Client Type / Code from drop down box under the correct entity shown to the right (or may be written in) →	**Government**	**Non-Government**	**Individual**
		OTHER Other (Non-G	

Mailing Address	**City**	**State**	**ZIP + 4**
625 Liberty Avenue, Suite 1700	Pittsburgh	PA	15222

Contact Person – Last Name	First	MI	Suffix	**Telephone**	**Email Address**
Frazier	Stephanie			(412) 553-5798	Sfrazier@eqt.com

SECTION B. CONSULTANT INFORMATION (Complete if different than above) ☐ N/A

Contact Person – Last Name	First	MI	Suffix	**Consultant's Title**	**Consulting Firm**
Trexler	Heather			Project Manager	Tetra Tech, Inc.

Mailing Address	**City**	**State**	**ZIP + 4**
661 Andersen Drive, Foster Plaza 7	Pittsburgh	PA	15220

Telephone	**Fax**	**Email**	**Employer ID#** (EIN)
(412) 921-8051	(412) 921-4040	Heather.trexler@tetratech.com	95-4148514

SECTION C. PROJECT INFORMATION

Project /Site Name:	**DEP Site ID#** (if known or leave blank)
Equitrans Expansion Project	

Client Relationship - Please select Site-to-Client Relationship / Code from drop down box to the right (or may be written in) →	Double-click on shaded area below to select correct Site-to-Client Relationship / Code ↓

County	**Municipality** ☐ City ☐ Borough ☒ Township	**OWNOP Owner/Operator**
Allegheny	Forward	

Site Location / Address	**City**	**State**	**ZIP + 4**
Pangburn Hollow Road, Applegate Gathering System	Bunola	PA	15063

Collection Method: ☐ EMAP ☐ HGIS ☒ GISDR* ☐ ITPMP ☐ GPS ☐ WAAS ☐ LORAN

Check the horizontal reference datum (or projection datum) employed in the collection method.
EMAP and HGIS (PNDI) have known datum and do not require checking here. ☐ NAD27 ☒ NAD83 ☐ WGS84 (GEO84)

Enter the date of collection if coordinates were derived from GPS, WAAS or LORAN. mm dd yyyy

Applicant's Name	GENERAL PERMIT REGISTRATION	
Equitrans, LP		

SECTION D. RESOURCE IDENTIFICATION

Please place an "X" in the appropriate box next to each item to indicate the applicant has identified any of these resources which may be present at the project site.

Each General Permit (GP) has a specific set of restrictions and some resources may require certain actions or prohibit the project from being eligible to register use of the GP. *This list is not all-inclusive, please see GPs for details.*

YES	NO		YES	NO	
☐	☒	National Register of Historic Places	☒	☐	Threatened and Endangered Species
☐	☒	National Registry of Natural Landmarks	☐	☒	Wild or Stocked Trout Streams
☐	☒	Local historical site	☐	☒	Wild and Scenic Rivers
☐	☒	Exceptional Value (EV) Waters	☒	☐	Wetlands
☐	☒	High Quality (HQ) Waters	☐	☒	Other _____

SECTION E. REGISTRATION CHECK LIST AND REQUIREMENTS

Please place an "X" next to each item (1 - 16) to ensure it is completed and/or provided. Unless otherwise specified, all items are ***required*** to ensure a complete Registration package. ****Provide ONE (1) ORIGINAL and ONE (1) COPY of the Registration package****	Applicant Entry	DEP Use Only
1. **General Permit Registration form** properly completed and signed	☒	☐
☒ I have read the terms and conditions of the GP(s) indicated above.	☒	☐
2. **General Permit Registration Fee and Chapter 105 Fee Calculation Worksheet**	☒	☐
3. Notification sent to the Municipality & County (copy of **General Permit Registration form**)	☒	☐
4. **PASPGP-4 Cumulative Impact Project Screening Form** properly completed	☒	☐
5. **Location Map** (USGS quad map) with project site marked	☒	☐
6. **Color Photographs** with dates and descriptions *(see instructions)* ☐ ***N/A***	☒	☐
7. **Stream Name and Chapter 93 Classification** (example: UNT to #40637 HOUSE RUN, HQ-WWF/EV) Please refer to Section 7, Stream Name and Chapter 93 Classifications.	☒	☐
8. **Project Description** including proposed impacts and PNDI Avoidance Measures (if applicable) Please refer to Section 8, Project Description.	☒	☐
9. **Site Specific and/or Standard Drawings** depicting the project's GP activities	☒	☐
10. **Site Plan** depicting the site of the project's GP activities *(see Section F.)*	☒	☐
11. **Erosion & Sediment Control Plan (E&S Plan)** *(required for GP-11 only - see instructions)*	☒	☐
12. **Written Directions to Project Site:** Please refer to Section 12, Written Directions to the Project Site.	☒	☐
13. **Pennsylvania Natural Diversity Inventory (PNDI):** **Please place an "X" next to the appropriate box indicating the information provided:**		
☐ Completed PNDI Project Planning & Environmental Review Form	☐	☐
☐ Initialed PNDI Project Environmental Review Search Receipt showing **"**No Known Impacts"	☐	☐
☐ Initialed PNDI Project Environmental Review Search Receipt showing "Avoidance Measures" which have ALSO been incorporated into the project description	☐	☐
☒ Initialed PNDI Project Environmental Review Search Receipt showing "Potential Impacts" AND documentation of appropriate agency coordination required on PNDI Receipt	☒	☐
14. **Bog Turtle Habitat Screening:** **Please place an "X" next to the appropriate box indicating the information provided:**		
☐ Completed Request for a Bog Turtle Habitat Screening Form	☐	☐
☐ "No Effect" determination from the Army Corp of Engineers	☐	☐
☐ Documented clearance from the US Fish and Wildlife Services	☐	☐
☒ N/A	☒	☐

Applicant's Name	GENERAL PERMIT REGISTRATION	
Equitrans, LP		

15. Activities which impact wetlands:		
Please place an "X" next to the appropriate box indicating the information provided:	☐	☐
☐ N/A because no wetland impacts are proposed or no compensatory mitigation is necessary.	☒	☐
☒ A wetland delineation with complete data sheets in accordance with the 1987 Corps of Engineers Wetland Delineation Manual AND the appropriate Regional Supplements to the Corps of Engineers Wetland Delineation Manual for use in Pennsylvania.	☐	☐
☐ If direct or indirect wetland impacts are greater than 0.05 acres, a compensatory mitigation plan in accordance with the Department's Replacement criteria which provides compensation at a minimum one to one acre ratio.	☐	☐
☐ **If compensatory mitigation onsite is determined not feasible:** A check, number _____, in the amount of $_____ payable to the National Fish and Wildlife Foundation, N.A. 1237, as compensatory mitigation for _____ acres of impact in wetlands, in accordance with the Pennsylvania Wetland Replacement Project.	☐	☐
16. Registration of a GP-11:		
Please place an "X" next to the appropriate box indicating the worksheet(s) provided:		
☒ N/A because not registering use of GP-11	☒	☐
☐ E&S Plan	☐	☐
☐ Project Inventory	☐	☐
☐ Bridge and/or Culvert Replacement Projects or Projects That Change the Waterway Opening	☐	☐

SECTION F. SITE PLAN

Please place an "X" next to each item to ensure it is shown on the site plan. Unless otherwise specified in the permit, all items are ***required*** to ensure a complete Registration package.

YES	NO		YES	NO	
☒	☐	Stream Name: Please see Section 7.	☒	☐	100 year Flood Elevation OR FEMA map
☒	☐	Stream Limits and Flow Direction	☒	☐	Limits of Earth Disturbance Associated with Activity
☒	☐	Stream Impacts on site (including dimensions)	☒	☐	Location of Property Lines Relative to the Project
☒	☐	Wetlands on site (including acres)	☒	☐	Existing Utilities, ROWs, Easements
☒	☐	Wetland Impacts on site (including acres)	☒	☐	Existing Buildings, Roadway, etc.
☒	☐	Other Waters (i.e. pond, lakes, wetlands)	☒	☐	Proposed Buildings, Roadways, ROW etc.
☒	☐	Site Specific / Standard Drawings location(s)	☐	☒	Other _____
☒	☐	Photograph location(s)	☐	☒	Other _____

SECTION G. IMPACTS ASSOCIATED WITH PROJECT WORK SITE

Please provide the project's total impacts for each category in the table provided below.

Please complete and provide a separate chart detailing the information for each impact to waters and wetlands. Include the identifier developed in Section E.9. for each location. All impact acreages and number of impacts should be totaled on each page and then the project's total impacts provided in the table below.

The Additional Impacts Associated with Project Work Site (3150-PM-BWEW0554) worksheet may be used but is not required.

Total Impacts for the Project	**Temporary Impacts** (acreage & number of impacts)		**Permanent Impacts** (acreage & number of impacts)	
Total Waters Impacts	3.65 ac	4 number	0 ac	0 number
Total Impacts to Wetlands	0.78 ac	8 number	0.09 ac	4 number
Total Impacts for this Project	4.43 ac	12 number	0.09 ac	4 number

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERWAYS ENGINEERING AND WETLANDS

Please complete and provide this chart (as many as is needed) as part of Section G of the General Permit Registration (3150-PM-BWEW0500) for impact locations.

ADDITIONAL IMPACTS ASSOCIATED WITH PROJECT WORK SITE

Provide the unique identifier (from Section E.9.), latitude and longitude, total area and dimensions of impact to waters (including streams, lakes, ponds, etc) and/or wetlands associated with your project for each category below.

The impacts for each identifier below should be totaled and provided at the bottom of the page, then each page totaled. An account of total impacts for the project is to be provided in the chart found in Section G of the General Permit Registration Form.

Identifier S-BB5 - Monongahela River

* 43,560 square feet per acre

Impact Latitude (DMS) 40° 14' 57.63" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 57' 28.24" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☐ *N/A*	0.032 ac	860' x 1.6'	0 ac	____' x ____'
	Floodway	☐ *N/A*	0.034 ac	925' x 1.6'	0 ac	____' x ____'
Total Impacts to Waters (a)			**0.034 ac**		**0 ac**	
Impacts to Wetlands (b)		☒ *N/A*	**0.000 ac**	____' x ____'	**0.000 ac**	____' x ____'
Total Impacts for this location (c)			**0.034 ac**		**0 ac**	

Identifier S-BB4

* 43,560 square feet per acre

Impact Latitude (DMS) 40° 14' 16.16" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 56' 48.27" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☐ *N/A*	0.034 ac	20' x 75'	0 ac	____' x ____'
	Floodway	☐ *N/A*	0.207 ac	120' x 75'	0.0 ac	____' x ____'
Total Impacts to Waters (a)			**0.207 ac**		**0.0 ac**	
Impacts to Wetlands (b)		☒ *N/A*	**0.000 ac**	____' x ____'	**0.000 ac**	____' x ____'
Total Impacts for this location (c)			**0.207 ac**		**0.0 ac**	

Identifier W-BB13-UP

* 43,560 square feet per acre

Impact Latitude (DMS) 40° 14' 18.96" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 57' 41.25" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☒ *N/A*	____ ac	____' x ____'	____ ac	____' x ____'
	Floodway	☒ *N/A*	____ ac	____' x ____'	____ ac	____' x ____'
Total Impacts to Waters (a)			**____ ac**		**____ ac**	
Impacts to Wetlands (b)		☐ *N/A*	**0.06 ac**	144' x 25'	**0 ac**	____' x ____'
Total Impacts for this location (c)			**0.06 ac**		**____ ac**	

Total Impacts for "Page **1** of **4**" (same as above)	**Temporary Impacts** (acreage & number of impacts)		**Permanent Impacts** (acreage & number of impacts)	
Total Waters Impacts (sum of a)	0.241 ac	2 number	____ ac	____ number
Total Impacts to Wetlands (sum of b)	0.06 ac	1 number	____ ac	____ number
Total Impacts for this page (sum of c)	0.301 ac	3 number	____ ac	____ number

pennsylvania
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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERWAYS ENGINEERING AND WETLANDS

Please complete and provide this chart (as many as is needed) as part of Section G of the General Permit Registration (3150-PM-BWEW0500) for impact locations.

ADDITIONAL IMPACTS ASSOCIATED WITH PROJECT WORK SITE

Provide the unique identifier (from Section E.9.), latitude and longitude, total area and dimensions of impact to waters (including streams, lakes, ponds, etc) and/or wetlands associated with your project for each category below.

The impacts for each identifier below should be totaled and provided at the bottom of the page, then each page totaled. An account of total impacts for the project is to be provided in the chart found in Section G of the General Permit Registration Form.

Identifier W-BB11 — * 43,560 square feet per acre

Impact Latitude (DMS) 40° 14' 12.94" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 56' 44.64" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☒ *N/A*	0.000 ac	____' x ____'	0.000 ac	____' x ____'
	Floodway	☒ *N/A*	0.000 ac	____' x ____'	0.000 ac	____' x ____'
Total Impacts to Waters (a)			**0.000 ac**		**0.000 ac**	
Impacts to Wetlands (b)		☐ *N/A*	**0.027 ac**	25' x 47'	**0.027 ac**	25' x 47'
Total Impacts for this location (c)			**0.027 ac**		**0.027 ac**	

Identifier W-BB10 — * 43,560 square feet per acre

Impact Latitude (DMS) 40° 14' 0.91" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 56' 37.43" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☒ *N/A*	0.000 ac	____' x ____'	0.000 ac	____' x ____'
	Floodway	☒ *N/A*	0.000 ac	____' x ____'	0.000 ac	____' x ____'
Total Impacts to Waters (a)			**0.000 ac**		**0.000 ac**	
Impacts to Wetlands (b)		☐ *N/A*	**0.023 ac**	25' x 47'	**0.023 ac**	25' x 47'
Total Impacts for this location (c)			**0.023 ac**		**0.023 ac**	

Identifier W-BB9 — * 43,560 square feet per acre

Impact Latitude (DMS) 40° 13' 59.84" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 56' 36.56" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☒ *N/A*	0.000 ac	____' x ____'	0.000 ac	____' x ____'
	Floodway	☒ *N/A*	0.000 ac	____' x ____'	0.000 ac	____' x ____'
Total Impacts to Waters (a)			**0.000 ac**		**0.000 ac**	
Impacts to Wetlands (b)		☐ *N/A*	**0.015 ac**	11' x 60'	**0.015 ac**	11' x 60'
Total Impacts for this location (c)			**0.015 ac**		**0.015 ac**	

Total Impacts for "Page **2** of **4**" (same as above)	**Temporary Impacts** (acreage & number of impacts)		**Permanent Impacts** (acreage & number of impacts)	
Total Waters Impacts (sum of a)	0.000 ac	0 number	0.000 ac	0 number
Total Impacts to Wetlands (sum of b)	0.065 ac	3 number	0.065 ac	3 number
Total Impacts for this page (sum of c)	0.065 ac	3 number	0.065 ac	3 number

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Please complete and provide this chart (as many as is needed) as part of Section G of the General Permit Registration (3150-PM-BWEW0500) for impact locations.

ADDITIONAL IMPACTS ASSOCIATED WITH PROJECT WORK SITE

Provide the unique identifier (from Section E.9.), latitude and longitude, total area and dimensions of impact to waters (including streams, lakes, ponds, etc) and/or wetlands associated with your project for each category below.

The impacts for each identifier below should be totaled and provided at the bottom of the page, then each page totaled. An account of total impacts for the project is to be provided in the chart found in Section G of the General Permit Registration Form.

Identifier W-BB8 * 43,560 square feet per acre

Impact Latitude (DMS) 40° 13' 58.86" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 56' 32.90" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☒ *N/A*	0.000 ac	____' x ____'	____ ac	____' x ____'
	Floodway	☒ *N/A*	0.000 ac	____' x ____'	0.00 ac	____' x ____'
Total Impacts to Waters (a)			**0.000 ac**		**0.00 ac**	
Impacts to Wetlands (b)		☐ *N/A*	**0.030 ac**	45' x 29'	**0.030 ac**	45' x 29'
Total Impacts for this location (c)			**0.030 ac**		**0.030 ac**	

Identifier W-BB7 * 43,560 square feet per acre

Impact Latitude (DMS) 40° 13' 51.07" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 56' 11.39" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☒ *N/A*	0.000 ac	____' x ____'	0.00 ac	____' x ____'
	Floodway	☒ *N/A*	0.000 ac	____' x ____'	0.00 ac	____' x ____'
Total Impacts to Waters (a)			**0.000 ac**		**0.00 ac**	
Impacts to Wetlands (b)		☐ *N/A*	**0.550 ac**	319.5' x 75'	**0.0 ac**	____' x ____'
Total Impacts for this location (c)			**0.550 ac**		**0.0 ac**	

Identifier W-BB6 * 43,560 square feet per acre

Impact Latitude (DMS) 40° 13' 46.26" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 56' 04.77" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☒ *N/A*	0.000 ac	____' x ____'	0.00 ac	____' x ____'
	Floodway	☒ *N/A*	0.000 ac	____' x ____'	0.00 ac	____' x ____'
Total Impacts to Waters (a)			**0.000 ac**		**0.00 ac**	
Impacts to Wetlands (b)		☐ *N/A*	**0.070 ac**	45' x 68'	**0.0 ac**	____' x ____'
Total Impacts for this location (c)			**0.070 ac**		**0.0 ac**	

Total Impacts for "Page **3** of **4**" (same as above)	**Temporary Impacts** (acreage & number of impacts)		**Permanent Impacts** (acreage & number of impacts)	
Total Waters Impacts (sum of a)	0.000 ac	0 number	0.000 ac	0 number
Total Impacts to Wetlands (sum of b)	0.650 ac	3 number	0.03 ac	1 number
Total Impacts for this page (sum of c)	0.650 ac	3 number	0.03 ac	1 number

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Please complete and provide this chart (as many as is needed) as part of Section G of the General Permit Registration (3150-PM-BWEW0500) for impact locations.

ADDITIONAL IMPACTS ASSOCIATED WITH PROJECT WORK SITE

Provide the unique identifier (from Section E.9.), latitude and longitude, total area and dimensions of impact to waters (including streams, lakes, ponds, etc) and/or wetlands associated with your project for each category below.

The impacts for each identifier below should be totaled and provided at the bottom of the page, then each page totaled. An account of total impacts for the project is to be provided in the chart found in Section G of the General Permit Registration Form.

Identifier S-BB3 * 43,560 square feet per acre

Impact Latitude (DMS) 40° 13' 41.59" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 55' 57.39" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☐ *N/A*	0.052 ac	30' x 75'	0.0 ac	____' x ____'
	Floodway	☐ *N/A*	0.243 ac	141' x 75'	____ ac	____' x ____'
Total Impacts to Waters (a)			**0.243 ac**		**0.0 ac**	
Impacts to Wetlands (b)		☒ *N/A*	**0.000 ac**	____' x ____'	**0.0 ac**	____' x ____'
Total Impacts for this location (c)			**0.243 ac**		**0.0 ac**	

Identifier W-BB12 * 43,560 square feet per acre

Impact Latitude (DMS) 40° 13' 33.35" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 55' 43.02" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☒ *N/A*	0.000 ac	____' x ____'	0.0 ac	____' x ____'
	Floodway	☒ *N/A*	0.000 ac	____' x ____'	0.0 ac	____' x ____'
Total Impacts to Waters (a)			**0.000 ac**		**0.0 ac**	
Impacts to Wetlands (b)		☐ *N/A*	**0.005 ac**	23' x 9.6'	**0.0 ac**	____' x ____'
Total Impacts for this location (c)			**0.005 ac**		**0.0 ac**	

Identifier S-BB4 (floodplain) * 43,560 square feet per acre

Impact Latitude (DMS) 40° 14' 16.16" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 56' 48.27" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☐ *N/A*	0.007 ac	20' x 16'	____ ac	____' x ____'
	Floodway	☐ *N/A*	3.17 ac	____' x ____'	____ ac	____' x ____'
Total Impacts to Waters (a)			**3.17 ac**		**____ ac**	
Impacts to Wetlands (b)		☒ *N/A*	**____ ac**	____' x ____'	**____ ac**	____' x ____'
Total Impacts for this location (c)			**3.17 ac**		**____ ac**	

Total Impacts for "Page 4 of 4" (same as above)	**Temporary Impacts** (acreage & number of impacts)		**Permanent Impacts** (acreage & number of impacts)	
Total Waters Impacts (sum of a)	3.413 ac	2 number	0 ac	____ number
Total Impacts to Wetlands (sum of b)	0.005 ac	1 number	0 ac	____ number
Total Impacts for this page (sum of c)	3.418 ac	3 number	0 ac	____ number

Applicant's Name Equitrans, LP	GENERAL PERMIT REGISTRATION	

SECTION H. CERTIFICATION

I certify under penalty of law that the information provided in this permit registration is true and correct to the best of my knowledge and information and that I possess the authority to undertake the proposed action. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. (If any of the information and/or plans is found to be in error, falsified, and/or incomplete, this authorization/verification may be subject to modification, suspension, or revocation in accordance with applicable regulations.)

Signature of Applicant — Date: 22 Oct 2015

Stephanie Frazier – Supervisor Permitting - Environmental
Typed / Printed Name

PA Fish and Boat Commission Approval (for GP-1 only)

Signature of Reviewer — Date

Reviewer's Typed / Printed Name — ( ) Phone Number

Reviewer's Typed / Printed Title — Email Address

This General Permit shall not be effective until the owner has had their E&S Plan reviewed by the appropriate Regional Office or District, obtained Federal Authorization and, where required, obtained an SLLA from DEP.

AN ACKNOWLEDGED COPY OF THIS GENERAL PERMIT REGISTRATION PACKAGE (INCLUDING THE ACKNOWLEDGEMENT LETTER AND TERMS AND CONDITIONS), REQUIRED FEDERAL AUTHORIZATION, AND THE E&S PLAN MUST BE AVAILABLE AT THE PROJECT SITE DURING CONSTRUCTION.

SECTION I. ACKNOWLEDGEMENT – DEP USE ONLY

Signatures authorizing acknowledgment to use and register:

A. Completeness Review:

DEP / District Reviewer Signature

Reviewer's Typed / Printed Name

Begin Date: ____
Incomplete Date: ____
Response Date: ____
End Date: ____

Completeness Status

☐ YES ☐ NO

B. Eligibility Review:

DEP / District Reviewer Signature

Reviewer's Typed / Printed Name

Begin Date: ____
Incomplete Date: ____
Response Date: ____
End Date: ____

☐ Deficient - **DENIED**

C. Decision Review:

DEP / District Manager Signature

Reviewer's Typed / Printed Name

Begin Date: ____
End Date: ____

Disposition Status

☐ WITHDRAWN ☐ **APPROVED**
☐ RETURNED ☐ **DENIED**

D. Contact Information:

Typed / Printed Name — ( ) Phone Number — Email Address

E. Permit Tracking:

Received ____ Acknowledged ____ SLLA required: ☐ NO ☐ YES PASPGP-4: ☐ NO ☐ YES ☐ CAT 1 ☐ CAT 3

GP - ____ GP - ____ GP - ____ GP - ____ GP - ____

Notes: ____

SECTION 2.0

GENERAL PERMIT REGISTRATION FEE AND CHAPTER 105 FEE CALCULATION WORKSHEET

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CHAPTER 105 FEE(S) CALCULATION WORKSHEET

Additional information can be found at 25 PA Code §105.13 (relating to regulated activities – information and fees), the General Permit Registration (3150-PM-BWEW0500), the Joint Permit Application (3150-PM-BWEW0036) and the Dam Permit Application (3140-PM-BWEW0001)

Federal, State, county or municipal agencies or municipal authorities: ☐ **EXEMPT from fees**

These entities are exempt from these fees. If the applicant falls into one of these categories, please check the box above and provide only the first page of this worksheet with the project application or registration.

ALL OTHERS:

1. Please place an "X" in the box next to all authorizations that apply to the project and complete the fee information below those authorization(s). Projects may require multiple authorizations and fees, further clarification and examples are included below and at the end of this document.
2. Total each authorization, Section, and Part. Part One is for Water Obstructions and Encroachment authorizations, Part Two is for Dam Safety authorizations.
3. Please provide this completed worksheet (page 1 and page 2 and/or page 3, as is appropriate to the project) and a check for the applicable fee(s) with the project application or registration. The check should be made payable to the "**Commonwealth of Pennsylvania Clean Water Fund**" OR "**_____ Conservation District Clean Water Fund**", whichever is the reviewing entity.

NOTES:

Per *25 PA Code §105.13(c)(2)(iii)* Disturbance review fees are calculated by individually adding all of the permanent and temporary impacts to waterways, floodways, floodplains and bodies of water including wetlands to the next highest tenth acre and multiplying the permanent and temporary impacts by the respective fees and then these amounts are added to the other applicable fees.

Entities proposing structures or activities to occupy a Submerged Lands of the Commonwealth must obtain a Submerged Lands License Agreement (SLLA) and pay the appropriate annual charge. The applicant will be contacted if this charge applies to the project.

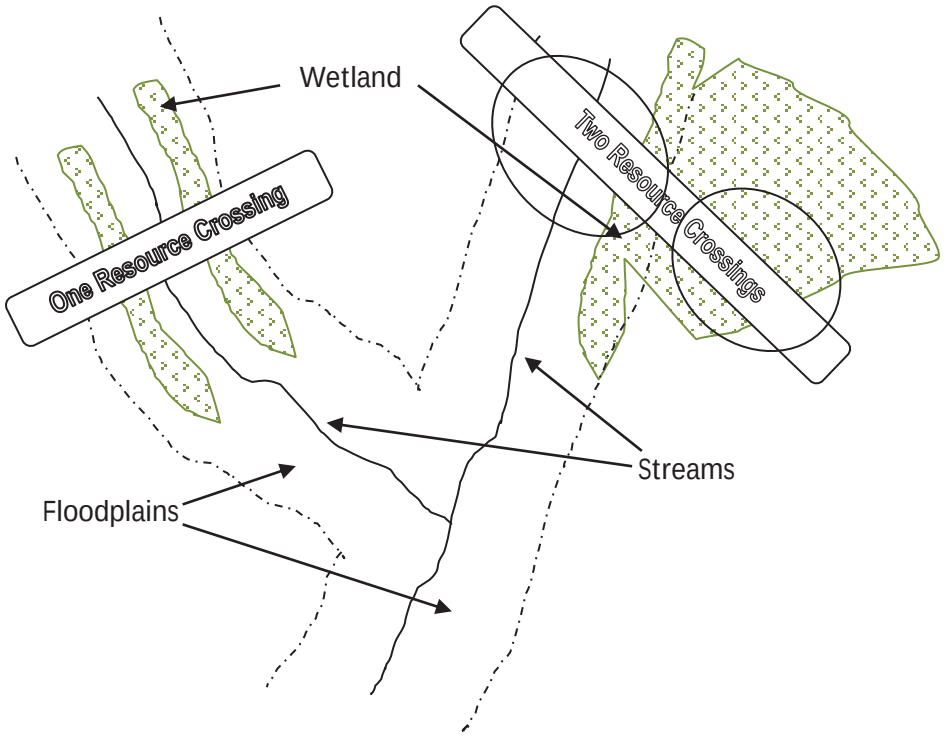
Floodway – The channel of the watercourse and portions of the adjoining floodplains which are reasonably required to carry and discharge the 100-year frequency flood. Unless otherwise specified, the boundary of the floodway is as indicated on maps and flood insurance studies provided by FEMA. In an area where no FEMA maps or studies have defined the boundary of the 100-year frequency floodway, it is assumed, absent evidence to the contrary, that the floodway extends from the stream to 50 feet from the top of the bank of the stream.

Wetland and Stream Clarification:

[1] In many instances, wetlands are located within the floodplain of a stream. These resources for the purposes of calculating disturbance fees are considered co-located or overlapping and the area of disturbance would only be used once.

[2] In the case of GP-5, GP-7 and GP-8 fees are charged per structure per resource crossing and the following also applies to the disturbance fees:

- A crossing of the stream and the floodplain with wetlands present within the floodplain is considered one resource crossing.
- When the crossing traverses a stream and the floodplain and a wetland that is located outside of the floodplain or a wetland that extends out beyond the floodplain, it is considered two resource crossings.



PART ONE: WATER OBSTRUCTIONS AND ENCROACHMENTS

SECTION A. APPLICATION FEES

☐ **WATER OBSTRUCTION AND ENCROACHMENT PERMIT** (Joint Permit Application)

Some activities or structures within a project may also qualify for an accumulation of General Permit fees, please mark the box above indicating an Individual Water Obstruction and Encroachment Permit AND the corresponding fee(s) in the General Permit section below those. Activities or structures not qualifying for a General Permit fee must include a disturbance fee.

☐ Administrative Filing Fee[1]			$ 1,750	+
☐ Temporary Disturbance ($400/0.1ac)	_____ acres x $4,000 =		$ _____	+
☐ Permanent Disturbance ($800/0.1ac)	_____ acres x $8,000 =		$ _____	= $ _____
		WO&E FEE subtotal (a)		$ _____

☒ **GENERAL PERMIT(S)** (select activity/structure(s) below, see page 4 for "#" explanation)

Some activities or structures within a project requiring an Individual Water Obstruction and Encroachment Permit may qualify for an accumulation of General Permit fees, please mark the corresponding fee(s) below but not the box above indicating a General Permit.

☐ GP-1 Fish Habitat Enhancement Structures			$ 50	= $ _____
☐ GP-2 Small Docks and Boat Launching Ramps	_____ (#) x		$ 175	= $ _____
☐ GP-3 Bank Rehabilitation, Bank Protection and Gravel Bar Removal	_____ (#) x		$ 250	= $ _____
☐ GP-4 Intake and Outfall Structures	_____ (#) x		$ 200	= $ _____
☒ GP-5 Utility Line Stream Crossings[2]	1 (#) x 11 (#) x		$ 250	= $ 2750
☐ GP-6 Agricultural Crossings and Ramps	_____ (#) x		$ 50	= $ _____
☐ GP-7 Minor Road Crossings[2]	_____ (#) x		$ 350	= $ _____
☒ GP-8 Temporary Road Crossings[2]	11 (#) x		$ 175	= $ 1925
☐ GP-9 Agricultural Activities			$ 50	= $ _____
☐ GP-10 Abandoned Mine Reclamation			$ 500	= $ _____
☐ GP-11 Maintenance, Testing, Repair, Rehabilitation, or Replacement of Water Obstructions and Encroachments[1]			$ 750	+
☐ Temporary Disturbance ($400/0.1ac)	_____ acres x $4,000 =		$ _____	+
☐ Permanent Disturbance ($800/0.1ac)	_____ acres x $8,000 =		$ _____	= $ _____
☐ GP-15 Private Residential Construction in Wetlands[1]			$ 750	+
☐ Temporary Disturbance ($400/0.1ac)	_____ acres x $4,000 =		$ _____	+
☐ Permanent Disturbance ($800/0.1ac)	_____ acres x $8,000 =		$ _____	= $ _____
		GP(s) FEE subtotal (b)		$ 4675

PART ONE: SECTION A. APPLICATION FEE(S) subtotal (a+b=c) $ 4675

SECTION B. OTHER FEES

☐ Environmental Assessment for Waived Activities (§105.13(c)(2)(iv))			$ 500	$ _____
☐ Amendment to Water Obstruction and Encroachment Permit				
☐ Major Amendment[1]			$ 500	+
☐ Temporary Disturbance	_____ acres x $4,000 =		$ _____	+ $ _____
☐ Permanent Disturbance	_____ acres x $8,000 =		$ _____	= $ _____
☐ Minor Amendment			$ 250	$ _____
☐ Transfer of Water Obstruction and Encroachment Permit				
☐ WITH Submerged Lands License Agreement			$ 200	$ _____
☐ WITHOUT Submerged Lands License Agreement			$ 100	$ _____

PART ONE: SECTION B. OTHER FEE(S) subtotal (d) $ 0

PART ONE: FEE(S) TOTAL (c+d=e) $ **750**

DEP USE ONLY			
FEE TOTAL:		Permit / Authorization Number (s):	
Correct Amount:		Check #:	
Check Amount:		Payable to:	

PART TWO: DAM SAFETY (USE ONE FEE SHEET PER DAM)

SECTION A. APPLICATION FEES

☐ **DAM PERMIT APPLICATION – NEW DAM**

☐ Size A	☐ Hazard 1 $26,500	☐ Hazard 2 $26,500	☐ Hazard 3 $25,500	☐ Hazard 4 $23,500	$ ____
☐ Size B	☐ Hazard 1 $19,000	☐ Hazard 2 $19,000	☐ Hazard 3 $18,500	☐ Hazard 4 $17,000	$ ____
☐ Size C	☐ Hazard 1 $10,500	☐ Hazard 2 $10,500	☐ Hazard 3 $10,000	☐ Hazard 4 $ 8,000	$ ____

☐ **STAGED CONSTRUCTION**

NO. OF STAGES BEYOND INITIAL STAGE _____ X APPLICATION FEE _____ X 0.90 (90%) $ ____

☐ **DAM PERMIT APPLICATION – MODIFICATION OF DAM**

☐ Size A	☐ Hazard 1 $18,500	☐ Hazard 2 $18,500	☐ Hazard 3 $18,500	☐ Hazard 4 $18,000	$ ____
☐ Size B	☐ Hazard 1 $12,000	☐ Hazard 2 $12,000	☐ Hazard 3 $12,000	☐ Hazard 4 $11,500	$ ____
☐ Size C	☐ Hazard 1 $ 7,500	☐ Hazard 2 $ 7,500	☐ Hazard 3 $ 7,500	☐ Hazard 4 $ 7,500	$ ____

☐ **STAGED CONSTRUCTION**

NO. OF STAGES BEYOND INITIAL STAGE _____ X APPLICATION FEE _____ X 0.85 (85%) $ ____

☐ **DAM PERMIT APPLICATION – OPERATION & MAINTANANCE OF EXISTING DAM**

☐ Size A	☐ Hazard 1 $12,500	☐ Hazard 2 $12,500	☐ Hazard 3 $12,000	☐ Hazard 4 $10,000	$ ____
☐ Size B	☐ Hazard 1 $10,000	☐ Hazard 2 $10,000	☐ Hazard 3 $ 9,500	☐ Hazard 4 $ 8,500	$ ____
☐ Size C	☐ Hazard 1 $ 7,000	☐ Hazard 2 $ 7,000	☐ Hazard 3 $ 6,500	☐ Hazard 4 $ 6,000	$ ____

PART TWO: SECTION A. APPLICATION FEE(S) subtotal (a) $ ____

SECTION B. OTHER FEES

☐ Letter of Amendment or Authorization

☐ Major (≥$250,000)

☐ Size A $14,700 ☐ Size B $ 8,700 ☐ Size C $ 4,400 $ ____

☐ Minor (<$250,000)

☐ Size A $ 1,300 ☐ Size B $ 1,000 ☐ Size C $ 650 $ ____

☐ Major Dam Design Revision

☐ Size A $ 4,700 ☐ Size B $ 3,200 ☐ Size C $ 1,700 $ ____

☐ Environmental Assessment

☐ Environmental Assessment for Dam Removal (§105.12(a)(16)) $ 500 $ ____

☐ Non-Jurisdictional Dams $ 900 $ ____

☐ Letter of Amendment or Authorization

☐ Size A $ 1,400 ☐ Size B $ 1,000 ☐ Size C $ 900 $ ____

☐ Transfer of Dam Permit

☐ No Proof of Financial Responsibility $ 550 ☐ Proof of Financial Responsibility $300 $ ____

☐ Annual Registration

☐ Hazard 1 $ 1,500 ☐ Hazard 2 $ 1,500 ☐ Hazard 3 $ 800 $ ____

PART TWO: SECTION B. OTHER FEE(S) subtotal (b) $ ____

PART TWO: FEE(S) TOTAL (a+b=c) $ ____

DEP USE ONLY			
FEE TOTAL:		Permit / Authorization Number (s):	
Correct Amount:		Check #:	
Check amount:		Payable to:	

GP Fee Explanation (#):

GP #	Description	Fee	Fee Explanation (#)
GP-1	Fish Habitat Enhancement Structures	$ 50	Fee is assessed per project not per individual structure.
GP-2	Small Docks and Boat Launching Ramps	$175	Fee is assessed per individual dock or boat ramp. The fee is the **number of docks and ramps** totaled times the fee.
GP-3	Bank Rehabilitation, Bank Protection and Gravel Bar Removal	$250	Fee is assessed per project and not individual bank or gravel bar removal locations. Only one single and complete project along a continuous stream reach not exceeding 500 feet measured down centerline of stream. Additional projects or areas must be separately registered and the fee would apply to each registration.
GP-4	Intake and Outfall Structures	$200	Fee is assessed per individual intake or outfall structure. The fee is the total **number of structures** times the fee.
GP-5[2]	Utility Line Stream Crossings[2]	$250	Fee is assessed per individual utility line or conduit crossing (a wetland and stream crossing may be separate crossings even if adjacent). The fee is the total **number of utility lines** times the ***number of resource crossings*** times the fee.
GP-6	Agricultural Crossings and Ramps	$ 50	Fee is assessed per individual crossing or ramp structure. The fee is the total **number of crossings and ramps** times the fee.
GP-7[2]	Minor Road Crossings[2]	$350	Fee is assessed per individual minor road crossing (a wetland and stream crossing may be separate crossings even if adjacent). The fee is the total **number of road crossings** times the fee.
GP-8[2]	Temporary Road Crossings[2]	$175	Fee is assessed per individual temporary road crossing (a wetland and stream crossing may be separate crossings even if adjacent). The fee is the total **number of temporary road crossings** times the fee.
GP-9	Agricultural Activities	$ 50	Fee is assessed per project not per individual structure or activity. Multiple projects can be registered under a single registration and as such the fee is applied to each project and then totaled.
GP-10	Abandoned Mine Reclamation	$500	Fee is assessed per project not per individual activity. Multiple projects can be registered under a single registration and as such the fee is applied to each project and then totaled.
GP-11[1]	Maintenance, Testing, Repair, Rehabilitation, or Replacement of Water Obstructions and Encroachments[1]	$750	Fee is assessed for each registration package (can include multiple activities or structures) **and is added to the permanent and temporary disturbance review fees** calculated for each registration package respectively.
GP-15[1]	Private Residential Construction in Wetlands[1]	$750	Fee is assessed for each registration package (can include multiple activities or structures) **and is added to the permanent and temporary disturbance review fees** calculated for each registration package respectively.

Water Obstruction and Encroachment Examples:

1. **GP-7 Minor Road Crossing:** Minor road crossing of a stream that qualifies for BDWM GP-07.

☒ **GENERAL PERMIT(S)** (select activity/structure(s) below)
Some activities or structures within a project requiring an Individual Water Obstruction and Encroachment Permit may qualify for an accumulation of General Permit fees, please mark the corresponding fee(s) below but not the box above indicating a General Permit.

☒ GP-7 Minor Road Crossings.....1 (#) x $ 350 = $ 350

GP(s) FEE subtotal (b) $ 350

2. **Joint Permit Application for Individual Water Obstruction Encroachment Permit:** The project proposes to construct an access road requiring the placement of fill in 0.27 acres of wetlands as part of a residential subdivision.

☒ Administrative Filing Fee ..... $ 1,750 +
☐ Temporary Disturbance ($400/0.1ac) .....0.0 acres x $4,000 = $ 0 +
☒ Permanent Disturbance ($800/0.1ac) .....0.3 acres x $8,000 = $ 2,400 = $ 4,150

WO&E FEE subtotal (a) $ 4,150

SECTION 3.0

NOTIFICATION TO THE MUNICIPALITY AND COUNTY

TETRA TECH

PITT-10-15-035

October 20, 2015

Project Number 212IC-PB-00176

Forward Township Supervisors
1000 Golden Circle Road
Elizabeth, Pennsylvania 15037

Reference: Equitrans, LP
Equitrans Expansion Project

Dear Supervisors:

This municipal notice, under the requirements of Acts 14, 67, 68, and 127, is to inform you that our client, Equitrans, LP, intends to submit a Chapter 105 permit application to the Allegheny County Conservation District for the following proposed project:

Project Name: Equitrans Expansion Project

Applicant Name: Equitrans, LP
625 Liberty Avenue
Suite 1700
Pittsburgh, Pennsylvania 15222

Project Description: Equitrans, L.P. (Equitrans) proposes the Equitrans Expansion Project (Project) is located in Allegheny, Washington and Greene Counties, Pennsylvania and Wetzel County, West Virginia. The Project is designed to transport natural gas from the northern portion of the Equitrans system south to the interconnection with Mountain Valley Pipeline LLC's proposed pipeline, as well as to existing interconnects with Texas Eastern Transmission, LP and Dominion Transmission, Inc. The Project will also increase system reliability, efficiency, and operational flexibility for the benefit of all Equitrans customers.

The purpose of this Project within Allegheny County is to install one 20" natural gas pipeline (H-318) approximately 3 miles long. The pipeline will generally run east-west and will be located in Allegheny and Washington Counties, Pennsylvania in the northern portion of Equitrans' system. The H-318 pipeline will move gas from proposed modifications at the existing Applegate Gathering System, which is operated by EQT Gathering, LLC (EQT Gathering), to Equitrans' existing H-148 pipeline for delivery south. Construction activities will clearing and grubbing within the right of way, trenching, boring, pipe installation, and site restoration. This project will require crossings through numerous streams and wetlands. The pipe will be installed under the streams and wetlands by either excavating a trench or boring beneath the stream or wetland. A temporary timber bridge will be used to move equipment across the streams and wetlands to install the pipeline. Once the pipeline is installed, the trench will be filled to preconstruction elevations. The stream banks will also be restored to their original topographic features and stabilized with erosion control matting. BMPs will be used to minimize erosion during all phases of construction.

Site Location: Project crosses Union Township, Washington County and Forward Township, Allegheny County.

Tetra Tech, Inc.
661 Andersen Drive, Pittsburgh, PA 15220-2700
Tel 412.921.7090 Fax 412.921.4040 www.tetratech.com

Enclosed find a location map with the site indicated and the General Permit Registration Form. Please submit any comments concerning this project within 30 days from date of receipt of this letter to:

PA DEP
400 Waterfront Drive
Pittsburgh, Pennsylvania 15222
Phone: (412) 442-4000

Should you have questions regarding this matter, please do not hesitate to contact me at (412) 921-8051 or Heather.Trexler@tetratech.com. In addition, Stephanie Frazier – Supervisor Permitting - Environmental for EQT Corporation can be reached at (412) 553-5798.

Sincerely,

Heather Trexler

Heather Trexler, P.G.
Project Manager

HT/clm

Enclosure (location map and General Permit Registration Form)
cc: File 212IC-PB-00176

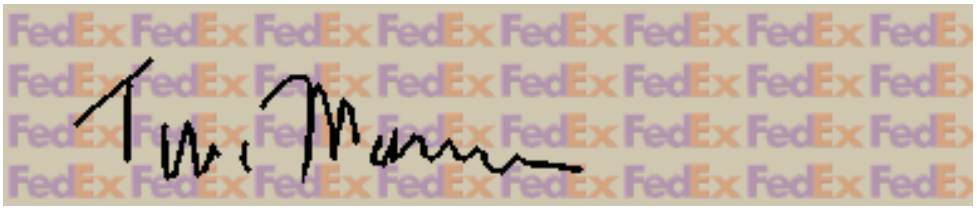
October 21,2015

Dear Customer:

The following is the proof-of-delivery for tracking number **653569430490**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	T.MARACINNI	**Delivery location:**	1000 GOLDEN CIR ELIZABETH, PA 15037
Service type:	FedEx Priority Overnight	**Delivery date:**	Oct 21, 2015 10:02
Special Handling:	Deliver Weekday Adult Signature Required		



Shipping Information:

Tracking number:	653569430490	**Ship date:**	Oct 20, 2015
		Weight:	0.5 lbs/0.2 kg

Recipient:
FORWARD TOWNSHIP
BOARD OF SUPERVISORS
1000 GOLDEN CIRCLE
ELIZABETH, PA 15037 US

Shipper:
TETRA TECH
TETRA TECH, INC.
661 ANDERSEN DRIVE
FOSTER PLAZA 7
PITTSBURGH, PA 15220 US

Reference
ICPB00176/FORWARD TWP
Purchase order number:
212IC-PB-00176
Department number
TREXLER/MORRIS

Thank you for choosing FedEx.

TETRA TECH

PITT-10-15-036

October 20, 2015

Project Number 212IC-PB-00176

Allegheny County Commissioners
Allegheny County Courthouse
436 Grant Street
Room 119
Pittsburgh, Pennsylvania 15219

Reference: Equitrans, LP
Equitrans Expansion Project

Dear Commissioners:

This municipal notice, under the requirements of Acts 14, 67, 68, and 127, is to inform you that our client, Equitrans, LP, intends to submit a Chapter 105 permit application to the Allegheny County Conservation District for the following proposed project:

Project Name: Equitrans Expansion Project

Applicant Name: Equitrans, LP
625 Liberty Avenue
Suite 1700
Pittsburgh, Pennsylvania 15222

Project Description: Equitrans, L.P. (Equitrans) proposes the Equitrans Expansion Project (Project) is located in Allegheny, Washington and Greene Counties, Pennsylvania and Wetzel County, West Virginia. The Project is designed to transport natural gas from the northern portion of the Equitrans system south to the interconnection with Mountain Valley Pipeline LLC's proposed pipeline, as well as to existing interconnects with Texas Eastern Transmission, LP and Dominion Transmission, Inc. The Project will also increase system reliability, efficiency, and operational flexibility for the benefit of all Equitrans customers.

The purpose of this Project within Allegheny County is to install one 20" natural gas pipeline (H-318) approximately 3 miles long. The pipeline will generally run east-west and will be located in Allegheny and Washington Counties, Pennsylvania in the northern portion of Equitrans' system. The H-318 pipeline will move gas from proposed modifications at the existing Applegate Gathering System, which is operated by EQT Gathering, LLC (EQT Gathering), to Equitrans' existing H-148 pipeline for delivery south. Construction activities will clearing and grubbing within the right of way, trenching, boring, pipe installation, and site restoration. This project will require crossings through numerous streams and wetlands. The pipe will be installed under the streams and wetlands by either excavating a trench or boring beneath the stream or wetland. A temporary timber bridge will be used to move equipment across the streams and wetlands to install the pipeline. Once the pipeline is installed, the trench will be filled to preconstruction elevations. The stream banks will also be restored to their original topographic features and stabilized with erosion control matting. BMPs will be used to minimize erosion during all phases of construction.

Site Location: Project crosses Union Township, Washington County and Forward Township, Allegheny County.

Tetra Tech, Inc.
661 Andersen Drive, Pittsburgh, PA 15220-2700
Tel 412.921.7090 Fax 412.921.4040 www.tetratech.com

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PA DEP
400 Waterfront Drive
Pittsburgh, Pennsylvania 15222
Phone: (412) 442-4000

Should you have questions regarding this matter, please do not hesitate to contact me at (412) 921-8051 or Heather.Trexler@tetratech.com. In addition, Stephanie Frazier – Supervisor Permitting - Environmental for EQT Corporation can be reached at (412) 553-5798.

Sincerely,

Heather Trexler

Heather Trexler, P.G.
Project Manager

HT/clm

Enclosure (location map and General Permit Registration Form)
cc: File 212IC-PB-00176

October 21,2015

Dear Customer:

The following is the proof-of-delivery for tracking number **653569430489**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	N.BALL	**Delivery location:**	ROOM 119 COUNTY COURTHOUSE PITTSBURGH, PA 15219
Service type:	FedEx Priority Overnight	**Delivery date:**	Oct 21, 2015 09:40
Special Handling:	Deliver Weekday Adult Signature Required		

Shipping Information:

Tracking number:	653569430489	**Ship date:**	Oct 20, 2015
		Weight:	0.5 lbs/0.2 kg

Recipient:
CHIEF CLERK
ALLEGHENY COUNTY COUNCIL
ROOM 119 COUNTY COURTHOUSE
436 GRANT STREET
PITTSBURGH, PA 15219 US

Shipper:
TETRA TECH
TETRA TECH, INC.
661 ANDERSEN DRIVE
FOSTER PLAZA 7
PITTSBURGH, PA 15220 US

Reference ICPB00176/ALLEGHENY COUNTY
Purchase order number: 212IC-PB-00176
Department number TREXLER/MORRIS

Thank you for choosing FedEx.

SECTION 4.0

PASPGP-4 CUMULATIVE IMPACTS PROJECT SCREENING FORM

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERWAYS ENGINEERING AND WETLANDS

DEP USE ONLY
☐ Category I
☐ Category II
☐ Category III

Applicant / Project Name: Equitrans, LP/ Equitrans Expansion Project	County(s): Allegheny, Greene, Washington

PASPGP-4 CUMULATIVE IMPACTS PROJECT SCREENING FORM

The following questionnaire must be completed and submitted to determine the appropriate Pennsylvania State Programmatic General Permit-4 (PASPGP-4) review procedure. Incomplete submissions will be returned. An "Overall Project," as defined for this form, includes all regulated activities that are reasonably related and necessary to accomplish the "Overall Project" purpose. An "Overall Project" must have a clear purpose, be able to function, and have independent utility. All regulated activities, including the direct and indirect impacts occurring as a result of the regulated activities, which are associated with the "Overall Project", should be considered cumulatively when completing this form. For linear projects, all impacts to waters and wetlands associated with the "Overall Project" should be added together and cumulatively viewed as impacts associated with the "Overall Project", which must have a defined beginning and end point. For linear projects, the application shall include a plan that depicts the location of the beginning and end points of the overall project, and all proposed crossings. See the PASPGP-4 permit document at: www.nab.usace.army.mil/Wetlands%20Permits and Part II, for the definition of Independent Utility and Single and Complete Project (discussion of "Overall Project").

The PASPGP-4authorizes the discharge of dredged or fill materials and/or the placement of structures, for a single and complete project, including all attendant features, both temporary and/or permanent, which individually or cumulatively results in impacts to 1.0 acre or less of waters of the United States including jurisdictional wetlands. These discharges and placement of structures must comply with all the terms, conditions, and processing procedures identified in this PASPGP-4. Refer to the definitions and sketches in PASPGP-4, Part II for calculating the 1.0-acre eligibility threshold for linear projects.

Determination of PASPGP-4 eligibility – For Category I and II Activities, PADEP/County Conservation Districts will review the applications, if applicable, and verify if work is authorized by PASPGP-4. For Category III Activities, the Corps reviews applications and makes a case by case determination that work is eligible for authorization under PASPGP-4.

Applications for activities that individually or cumulatively impact more than 1.0 acre of waters of the United States, including jurisdictional wetlands, including all attendant features, both temporary and permanent, for a single and complete project; or that impact greater than 250 linear feet of streams, rivers, or other watercourses, except fish habitat enhancement structures authorized under PADEP GP-1 and bank rehabilitation and protection, authorized under PADEP GP-3 that affect 500 linear feet or less, are sent to the Corps as a Category III Activity, under PASPGP-4, Part IV, C, 2. The 1.0 acre area measurement includes the sum total of all waters of the United States including both jurisdictional wetlands and streams, rivers, other watercourses.

- For linear projects, the 250 linear foot Category III Activity threshold for stream impacts is applied to the total cumulative impacts of all crossings associated with the overall linear project, regardless of the type of PADEP authorization or combination of authorizations used to approve the overall project.
- Overall linear projects that have cumulative permanent and temporary impacts to waters of the United States, including jurisdictional wetlands, which exceed 1.0 acre, may still be eligible for PASPGP-4 authorization through a Category III review, provided no single and complete project exceeds the 1 acre threshold (see PASPGP-4, Part II for definition of single and complete project and acreage calculations). This verification of eligibility will be made by the Corps of Engineers.
- For phased projects, including phased linear projects, an overall project plan depicting all previously authorized or proposed impacts to waters and/or wetland is required as part of the application. A plan depicting phase I of the overall project would be submitted with any applications associated with phase I. At a later date, when applications associated with phase II are submitted, an overall plan that depicts the impacts for phase I and phase II is required. For example, if a utility line was previously authorized to run from point A to point B, and the permittee now wants to expand the utility line to point C, the plan will depict from point A to point C. In such a case, the overall project has been expanded to extend from point A to point C; the portion from point A to point B is needed for the section from point B to point C to function and meet the overall project purpose. If plan is not submitted as part of application, the application for the purposes of PASPG-4 will be considered incomplete and the application may be sent to the Corps as a Category III Activity.

SECTION A: PROPOSED IMPACTS

Provide the size of impacts to waters and/or wetlands associated with your application, including temporary and/or permanent impacts, and direct and indirect impacts.

Included in this calculation are the areas directly and indirectly affected by the regulated activities, including the area of waters and/or wetlands filled, drained and/or flooded as a result of the regulated activities. See PASPGP-4, Part II, Definitions, for calculation of linear footage of stream impact, and Part IV, C, 2 for thresholds which require a Corps review of application (Category III Activity).

PADEP GP–11 allows for the registration of multiple overall projects at one time through submission of a project/work site table that identifies each of the separate overall projects. For work associated with PADEP GP-11 registrations, impacts associated with each project/work site should be list separately. This can be done through a separate PASPGP-4 Project Screening Form for each project/work site, or submission of a separate document/table that identifies each separate project/work site, the proposed work and impact information, as required by this section.

		square feet	linear feet
Permanent Impacts	**to waters:**	0	0
	to wetlands:	4181	
Temporary Impacts	**to waters:**	16038.5	1370.6
	to wetlands:	48472	

SECTION B: OTHER CHAPTER 105/SECTION 10/404 AUTHORIZATIONS

YES NO

☐ ☒ 1. If known, has any work associated with the Overall Project been previously authorized by the Corps or DEP? If YES, please complete the table below. If additional space is needed, please attach the applicable information. Include the type of authorization or permit, permit or authorization number(s), date(s) of issuance, and permitted impacts (including square feet and/or linear footage), if applicable, with your application/registration form(s).Types of authorizations or permits may be abbreviated and include: Corps Nationwide Permit, Corps Individual Permit, Corps PASPGP, DEP General Permit, DEP Individual Permit (Dam and/or Encroachment) or DEP Environmental Assessment. See PASPGP-4, Part IV, C, 3 for applications which require a Corps review (Category III Activity).

EXAMPLES:

a. If application is associated with the expansion of a residential development, i.e., construction of phase II, the authorizations and impacts, if applicable, associated with construction of phase I are to be identified and listed.

b. If application is associated with a linear project, i.e., sewer line, waterline, utility line, etc., and the proposed work is an extension or additional phase being added to a previous segment, the authorizations, and impacts, if applicable, associated with construction of the previous segment(s) are to be identified and listed. For example, if a utility line is constructed from point A to point B, and a year later an extension of the line to point C is proposed, the authorizations and impacts associated with construction of point A to point B should be listed/identified. In this case, the overall project is from point A to point C, as the portion from point A to point B is needed for the section from point B to point C to function and meet the overall project purpose.

Authorization Type	**Authorization Number**	**Date** (mm/dd/yyyy)	**Permitted Impacts**	
			wetlands	**waters**

YES NO

☐ ☒ 2. Are additional Corps and/or DEP authorizations required for your proposed work to function and have independent utility? If YES, please complete the table below. If additional space is needed, please attach the applicable information.

EXAMPLES:

a. Development of a residential subdivision may require the filling of waters and/or wetlands for the construction of access roads, utility line crossings, and/or lot development. In such a case, if application is only for the utility lines, the work and impacts associated with the road crossings and lot development need to be identified. For the overall development to function, the road crossings and lot development are needed, not just utilities.

b. If widening of a road for construction of a turn lane is needed to facilitate an industrial development, applications associated for the industrial development to construct utility lines and lot development need to include the work and impacts associated with the construction of the turn lane. The construction of the turn lane is needed for the industrial development to function; the two projects are not separate independent projects.

c. If the application is associated with a linear project, such as an underground electric line or waterline, and additional permits are needed for the utility lines to function, i.e., convey electricity or water from source to user, the additional work and impacts need to be identified. For the overall utility line to function the entire line needs to be constructed; a segment that will not function does not have independent utility.

Authorization Type	Date (if known)	Anticipated Impacts	
		wetlands	waters

SECTION C: ACTIVITIES RELATED TO RESIDENTIAL, COMMERCIAL AND INSTITUTIONAL DEVELOPMENTS

The term "Subdivision", for the purposes of this form, is defined as the division or redivision of a lot, tract or parcel of land into two or more lots, tracts, parcels or other divisions of land including changes to existing lot lines.

YES NO

☐ ☐ 1. Does the Overall Project involve the construction or expansion of a residential, commercial or institutional subdivision or development? If YES, proceed to question 2. If NO, leave questions 2 and 3 blank.

☐ ☐ 2. Does greater than 0.25 acres of wetlands exist within the property boundary (not including those being directly impacted as part of this application)? If YES, provide wetland acreage: _____ acres. If NO, leave question 3 blank.

☐ ☐ 3. Are you proposing to protect the wetland area(s) through a deed restriction or conservation easement that follows the Corps' Model Conservation Instruments? If YES, attach a copy of the proposed deed restriction or conservation easement to this form and submit with your application/registration form. Model Conservation Instruments are available at www.nab.usace.army.mil/Wetlands%20Permits/. Failure to submit a proposed deed restriction or conservation easement with permit application/registration form requires a Category III review under PASPGP-4, Part IV, C, 24.

SECTION D: CERTIFICATION

I certify that the information provided on this form is true and correct to the best of my knowledge and information. If any of the information and/or plans is found to be in error, falsified, and/or incomplete, your Chapter 105/PASPGP-4 authorization/verification may be subject to modification, suspension, or revocation in accordance with applicable regulations.

Signature of Applicant

22 Oct 2015

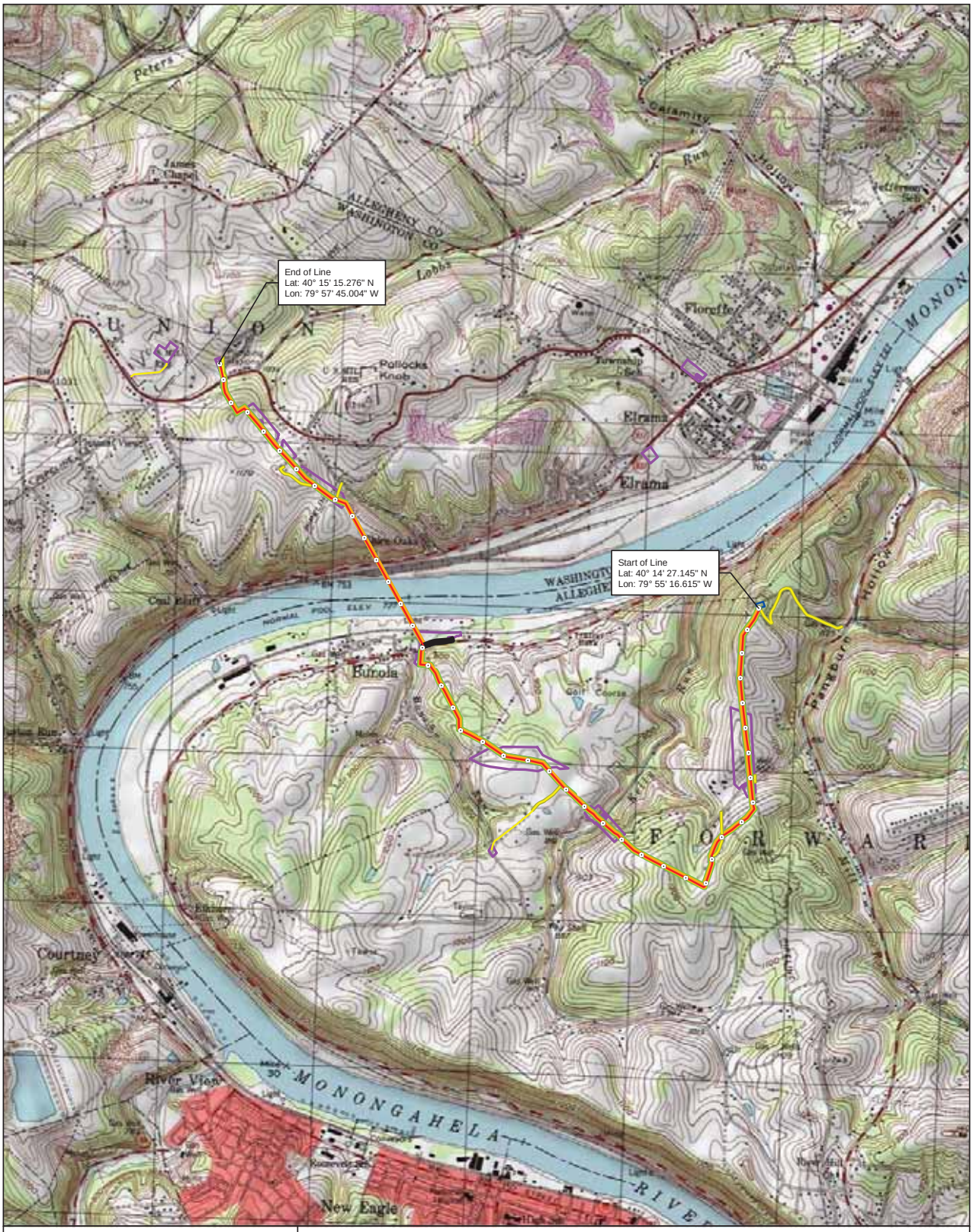
Date

Stephanie Frazier – Supervisor Permitting - Environmental

Name Typed or Printed

SECTION 5.0

LOCATION MAP



Equitrans Expansion Project

N

1:24,000

0 2,000 4,000 Feet

EQUITRANS

Attachment #: 1-1
USGS Project Location Map
Washington & Allegheny County, PA

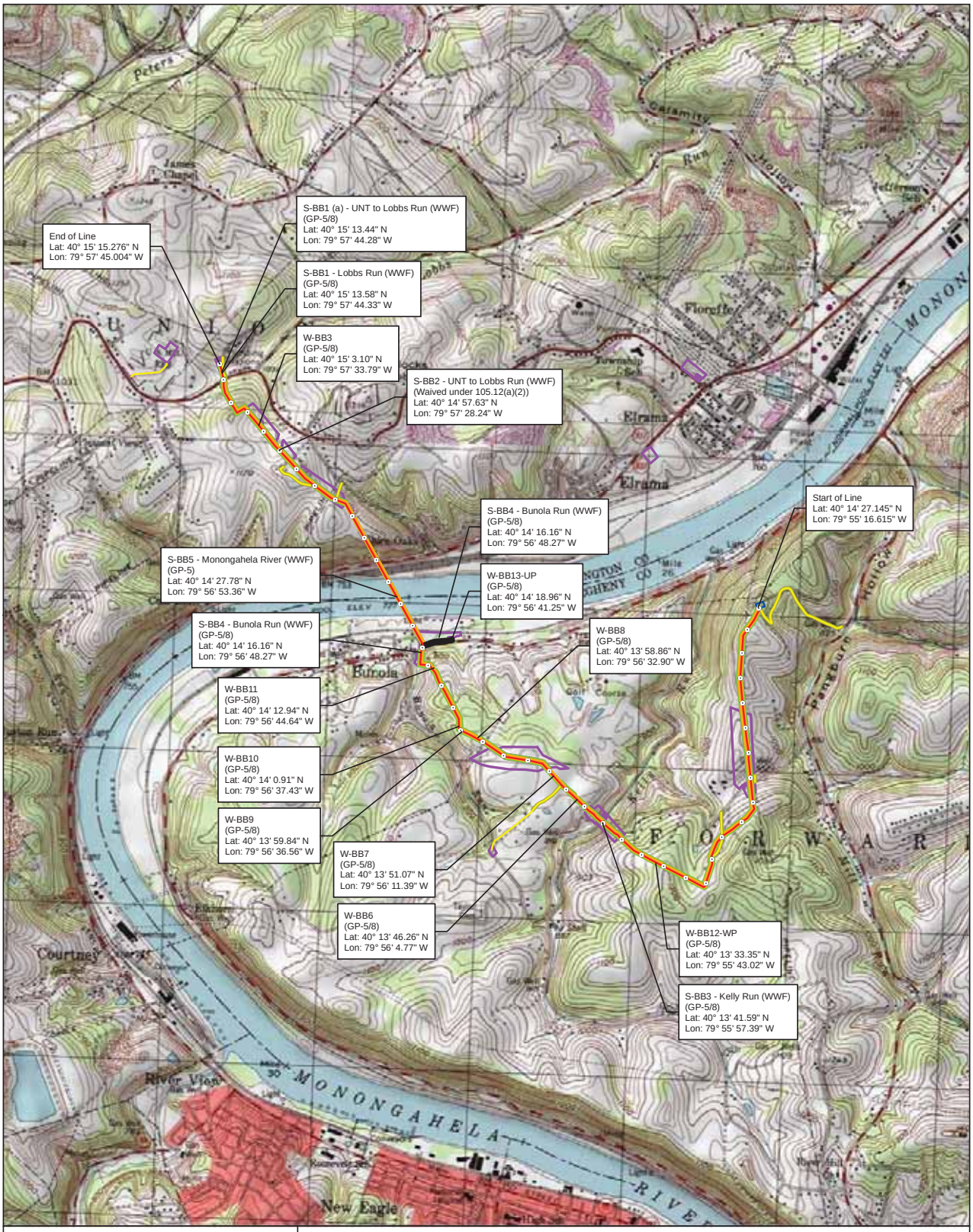
October 2015

Data Sources: Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site

Document Path: P:\GIS\EQT\MapDocs\esrp_pa_washallegCo_usgs.mxd



Equitrans Expansion Project

N

1:24,000

0 2,000 4,000 Feet

EQUITRANS

Attachment #: 1
USGS Project Location Map
Washington & Allegheny County, PA

October 2015

Data Sources: Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site

Document Path: P:\GIS\EQT\MapDocs\wep_pa_washalleghCo_usgsGP.mxd

SECTION 6.0

COLOR PHOTOGRAPHS

SECTION 6.0 - COLOR PHOTOGRAPHS

Not applicable since General Permit 3 (GP-3) and/or GP-11 registration is not required for Equitrans Expansion Project (Project) activities. Photographs have been provided in the Wetland Identification and Stream Identification Report in Section 15, Attachment 15-A.

SECTION 7.0

STREAM NAME AND CHAPTER 93 CLASSIFICATIONS

Equitrans Expansion Project - Allegheny and Washington County
Impact Summary Table

Waters Name	Stream/ Wetland Type	Applicable Permits	Latitude (N)			Longitude (W)			PA Code 25 Chapter 93 Designated Use	Temporary Stream Impact			Installation Method	Wetlands Onsite	Wetland Impact	
			DD	MM	SS	DD	MM	SS		Length (ft)*	Width (ft)**	Area (ft^2)		Area (ft^2)	Area (ft^2)	
S-BB1 - Lobbs Run	Intermitent	GP-5/8	40	15	13.58	79	57	44.33	WWF	5	75	375	open cut trench and timber mat crossing	N/A	N/A	
S-BB1 (a) - UNT to Lobbs Run	Intermitent	GP-5/8	40	15	13.44	79	57	44.28	WWF	2	75	150	open cut trench and timber mat crossing	N/A	N/A	
W-BB3	PEM	GP-5/8	40	15	3.10	79	57	33.79	WWF	N/A	N/A	N/A	open cut trench and timber mat crossing	2993	2218	
S-BB2 - UNT to Lobbs Run	Ephemeral	Waived under 105.12(a)(2)	40	14	57.63	79	57	28.24	WWF	1	75	75	open cut trench and timber mat crossing	N/A	N/A	
S-BB5 - Monongahela River	Perennial	GP-5	40	14	27.78	79	56	53.36	WWF	860	1.6	1376	HDD Bore	N/A	N/A	
S-BB4 - Bunola Run	Perennial	GP-5/8	40	14	16.16	79	56	48.27	WWF	20	75	1500	open cut trench and timber mat crossing	N/A	N/A	
S-BB4 - Bunola Run (workspace in floodplain)	Perennial	GP-8	40	14	16.16	79	56	48.27	WWF	20	16	320	timber mat crossing	N/A	N/A	
W-BB13-UP	PFO/PSS	GP-5/8	40	14	18.96	79	56	41.25	WWF	N/A	N/A	N/A	open cut trench and timber mat crossing	11620	2787	
W-BB11	PFO	GP-5/8	40	14	12.94	79	56	44.64	WWF	N/A	N/A	N/A	open cut trench and timber mat crossing	2492	1168	
W-BB10	PFO	GP-5/8	40	14	0.91	79	56	37.43	WWF	N/A	N/A	N/A	open cut trench and timber mat crossing	1016	1016	
W-BB9	PFO	GP-5/8	40	13	59.84	79	56	36.56	WWF	N/A	N/A	N/A	open cut trench and timber mat crossing	709	669	
W-BB8	PFO	GP-5/8	40	13	58.86	79	56	32.90	WWF	N/A	N/A	N/A	open cut trench and timber mat crossing	1619	1328	
W-BB7	PEM	GP-5/8	40	13	51.07	79	56	11.39	WWF	N/A	N/A	N/A	open cut trench and timber mat crossing	87132	23961	
W-BB6	PEM	GP-5/8	40	13	46.26	79	56	4.77	WWF	N/A	N/A	N/A	open cut trench and timber mat crossing	4031	3067	
S-BB3 - Kelly Run	Perennial	GP-5/8	40	13	41.59	79	55	57.39	WWF	30	75	2250	open cut trench and timber mat crossing	N/A	N/A	
W-BB12-WP	PFO/PSS	GP-5/8	40	13	33.35	79	55	43.02	WWF	N/A	N/A	N/A	open cut trench and timber mat crossing	250	221	
Allegheny County Totals (applying for General Permits):										930	167.6	5446	**sf**	108,869	34,217	**sf**
												0.13	**acre**	2.50	0.79	**acre**
Washington County Totals:										8	225	600	**sf**	2,993	2,218	**sf**
												0.01	**acre**	0.07	0.05	**acre**
Washington County Totals (applying for General Permits)										7	150	525	**sf**	2,993	2,218	**sf**
												0.01	**acre**	0.07	0.05	**acre**
Project Totals:										**938**	**392.6**	**6046**	**sf**	111,862	36,435	**sf**
														2.57	0.84	**acre**

Note:
* As measured transversely from top of bank to top of bank
** As measured along centerline of stream from where water is directed out of the stream to where it is returned to the stream
Washington County

UNT - unnamed tributary
GP - General Permit
WWF - warm water fish
N/A - not applicable

SECTION 8.0

PROJECT DESCRIPTION

SECTION 8.0 - PROJECT DESCRIPTION

8.1 DESCRIPTION

Equitrans, L.P. (Equitrans) proposes the Equitrans Expansion Project (Project) located in Allegheny, Washington and Greene Counties, Pennsylvania and Wetzel County, West Virginia. The Project is designed to transport natural gas from the northern portion of the Equitrans system south to the interconnection with Mountain Valley Pipeline LLC's proposed pipeline, as well as to existing interconnects with Texas Eastern Transmission, LP and Dominion Transmission, Inc. The Project will also increase system reliability, efficiency, and operational flexibility for the benefit of all Equitrans customers.

The portion of the Project within Allegheny County proposes to install one 20" natural gas pipeline (H-318) approximately 3 miles long within a 100' construction right-of-way and 50' permanent right-of-way. The pipeline will generally run east-west and will be located in Forward Township, Allegheny County, and Union Township, Washington County, Pennsylvania, in the northern portion of Equitrans' system. The H-318 pipeline will move gas from new modifications at the existing Applegate Gathering System, which is operated by EQT Gathering, LLC (EQT Gathering), to a new Hartson tie-in at Equitrans' existing H-148 pipeline for delivery south.

8.2 STREAM AND WETLAND CROSSINGS

Construction activities will include clearing and grubbing within the right of way, trenching, boring, pipe installation, and site restoration. This project will require crossings through numerous streams and wetlands.

The Allegheny County portion of the project will involve crossing 3 streams, Monongahela River, Bunola Run, Kelly Run and within the floodway of Bunola Run, and crossing 8 wetlands to install the pipeline. The Monongahela River will be crossed by directional bore and the remaining streams and wetlands will be open cut. Temporary timber bridges will be used to move equipment across the streams and wetlands that are open cut. Construction of the pipeline will result in approximatley 168 linear feet and 5446 square feet of temporary stream impacts and 34,217 square feet of temporary wetland impacts in Allegheny County. Once the pipeline is installed, the streams and wetlands will be restored to their original topographic condition. BMPs will be used during all phases of construction.

8.3 PENNSYLVANIA NATURAL DIVERSITY INVENTORY PROJECT ENVIRONMENTAL REIVEW

A large project PNDI was submitted to the PA Department of Conservation and Natural Resources (DCNR), PA Fish and Boat Commission, PA Game Commission, and US Fish and Wildlife Service (USFWS) on June 24, 2015 (Section 13.0).

DCNR responded that based on the PNDI review that there was the potential to impact several plant species. Field surveys to identify these species are planned for late spring and summer 2016, during the appropriate flowering time.

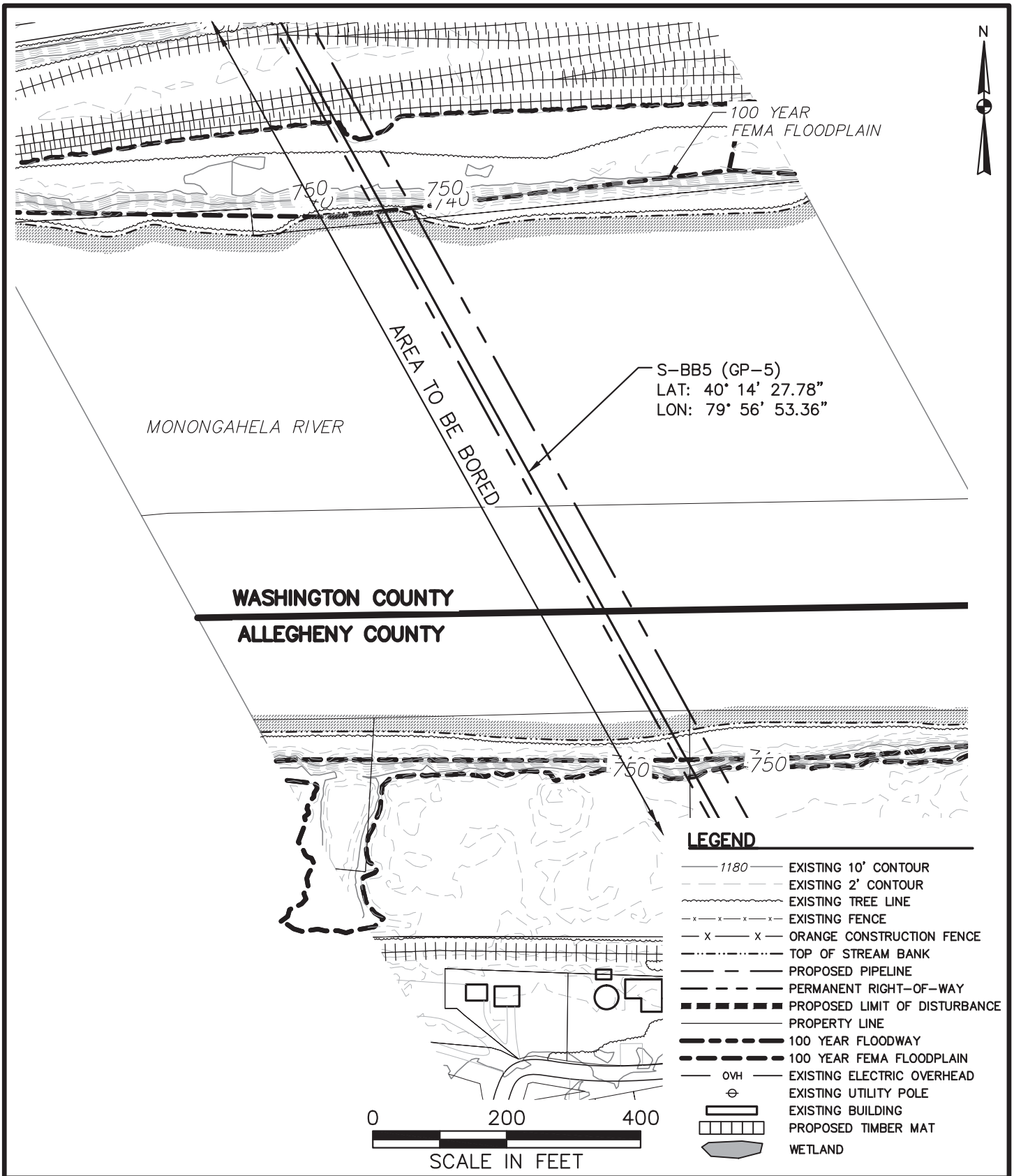
The PA Fish and Boat Commission responded that rare or protected freshwater mussel species are known in the vicinity of the project area in South Fork Tenmile Creek, Greene County. No impacts are proposed since this stream will be crossed by directional bore. A mussel survey of South Fork Tenmile Creek was conducted during October 2015 for the proposed crossing location. Native freshwater mussels were observed (in low abundunce), however, no federally listed mussels were located. A report is being prepared for submittal to PA Fish and Boat.

The PA Game Commission responded that they have no records that indicate species or resources of concern are locoated in the vicinity of the project.

The USFWS responded that the proposed project is located within the range of two bat species. Mist netting was conducted from July 26 to August 9, 2015 at 10 sites for a total of 60 complete net nights. Netting resulted in the capture of 94 bats representing three species: big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), and eastern pipistrelle (*Pipistrellus subflavus*). No federally listed or state-listed bats were captured. Searches for summer bat habitat (roost trees) were completed in the Project area. Searches for underground (winter) bat habitat are on-going. Potential habitat (i.e., portals) were identified in the Project area. Portal searches along the project alignment have been completed. A report is being prepared for submittal to USFWS.

SECTION 9.0

SITE-SPECIFIC AND/OR STANDARD DRAWINGS



TETRA TECH
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661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
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EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALL. & WASH. COUNTY
GP-5 FOR S-BB5
PLAN
SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 3

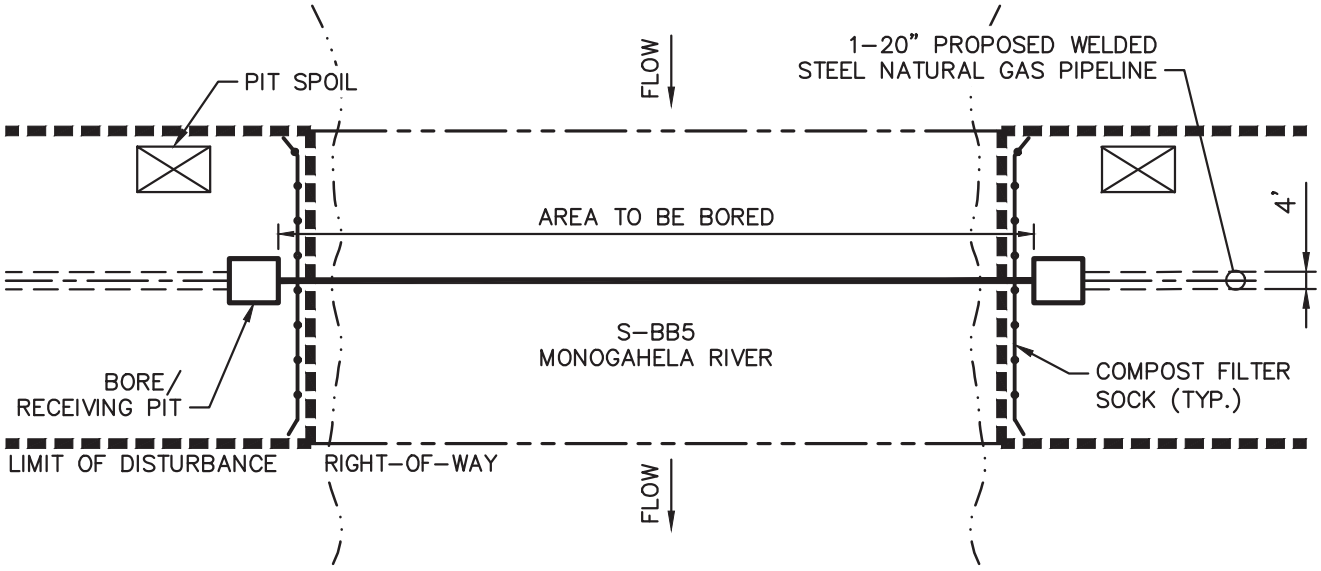
FIGURE 1

NOTES:

1. TOPO AND SITE FEATURE CREATED USING http:\\www.pasda.psu.edu.

2. TOPSOIL STOCKPILES SHALL BE LOCATED A MINIMUM OF 50' AWAY FROM THE EDGE OF THE WETLAND.

3. THE RIGHTS-OF-WAY AND EASEMENTS SHOWN ON THIS PLAN ARE THE RESPONSIBILITY OF EQUITRANS, LP TO SECURE WITH THE INDIVIDUAL PROPERTY OWNER. THE RIGHTS-OF-WAYS AND EASEMENTS SHOWN ON THIS PERMIT DRAWING REPRESENT THE BEST AVAILABLE PROPERTY INFORMATION AS PROVIDED TO TETRA TECH NUS, INC. BY EQUITRANS, LP. THE RIGHTS-OF-WAYS AND EASEMENTS SHALL BE VERIFIED AND LOCATED IN THE FIELD BY EQUITRANS, LP.



STREAM IMPACTS:
LENGTH: 860'
WIDTH: 1.6'
TOTAL AREA: 1,376 S.F.

FLOODPLAIN IMPACTS:
LENGTH: 925.58'
WIDTH: 1.6'
TOTAL AREA: 1,480.93 S.F.

PLAN
NOT TO SCALE

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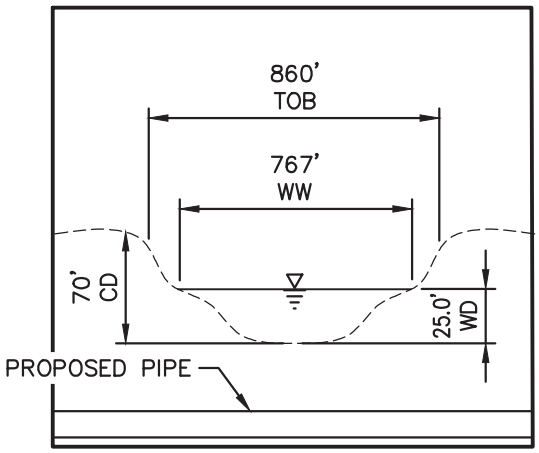
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALL. & WASH. COUNTY
GP-5 FOR S-BB5
PLAN
SCALE: NOT TO SCALE

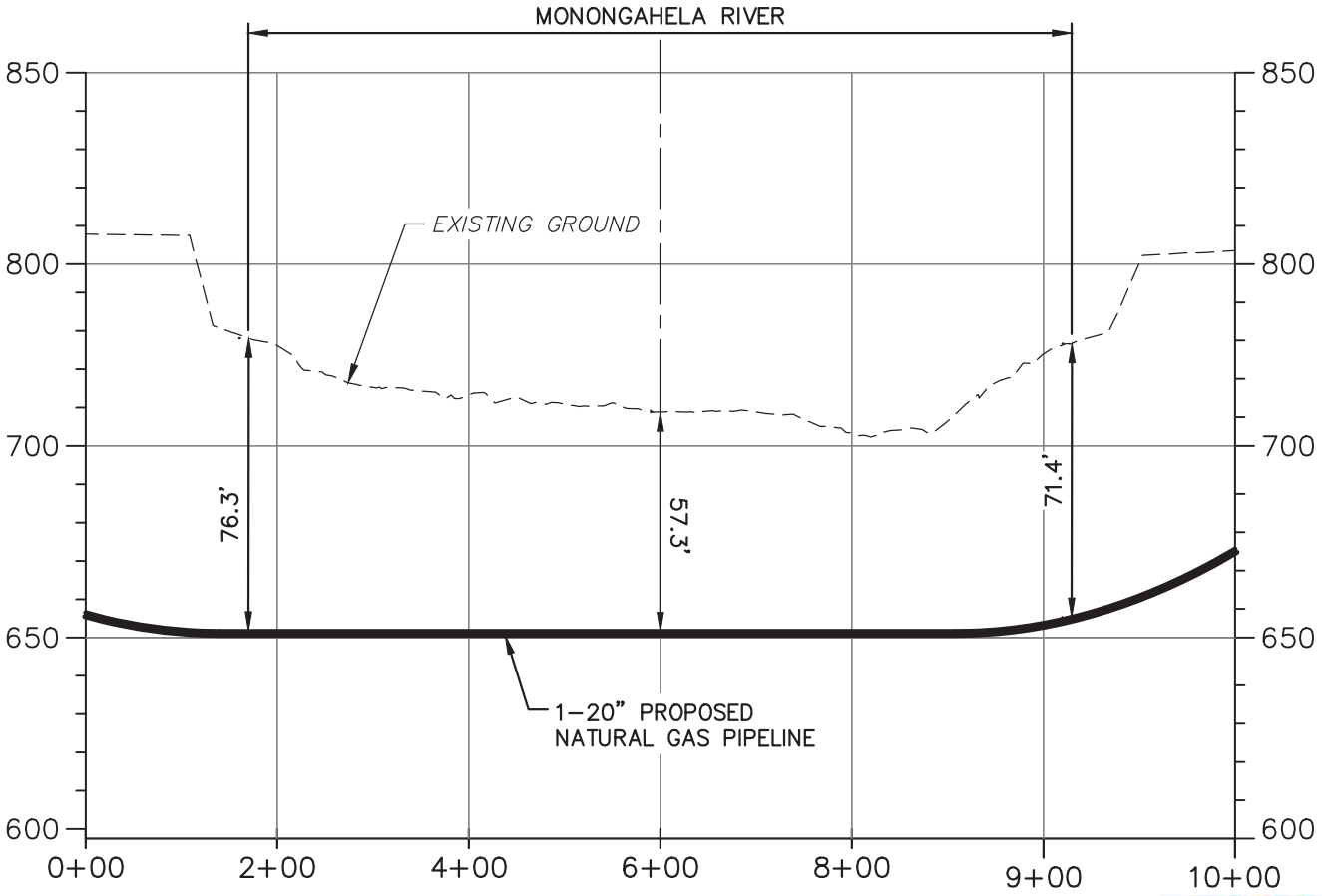
DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 3

FIGURE 2



NOT TO SCALE

S–BB5 CHANNEL WIDTH = 860'
S–BB5 CHANNEL DEPTH = 70'
S–BB5 WATER WIDTH = 767'
S–BB5 WATER DEPTH = 25.0'



PROFILE FOR S–BB5 HDD PROFILE

SCALE: HORIZ: 1" = 200'
VERT: 1" = 50'

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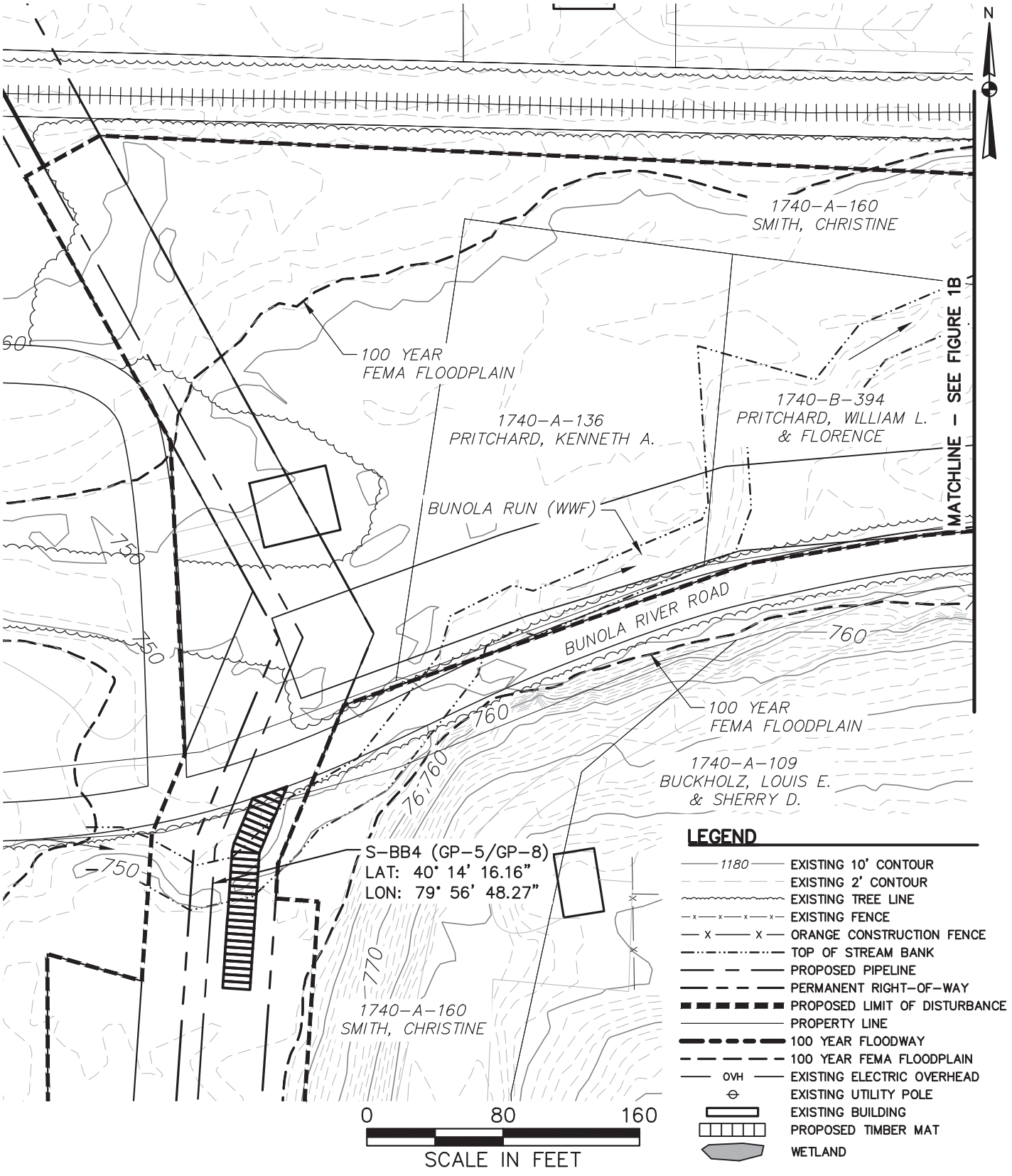
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALL. & WASH. COUNTY
GP–5 FOR S–BB5
PROFILE
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	212IC–PB–00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 3

FIGURE 3



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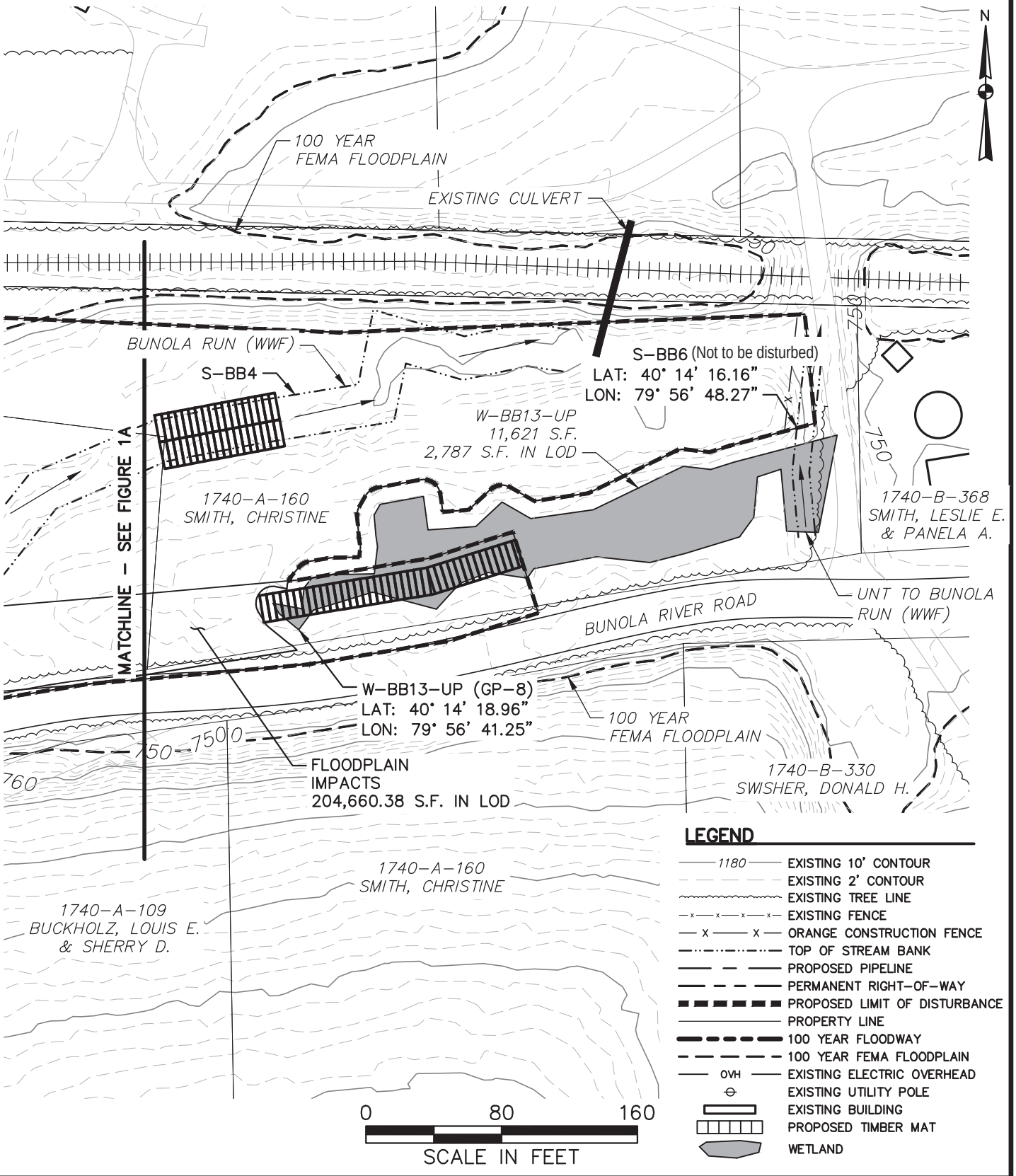
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP–5/GP–8 FOR S–BB4
PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC–PB–00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 5

FIGURE 1A



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EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP-8 FOR S-BB6/W-BB13-UP
PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 5

FIGURE 1B

NOTES:

1. TOPO AND SITE FEATURE CREATED USING http:\\www.pasda.psu.edu.

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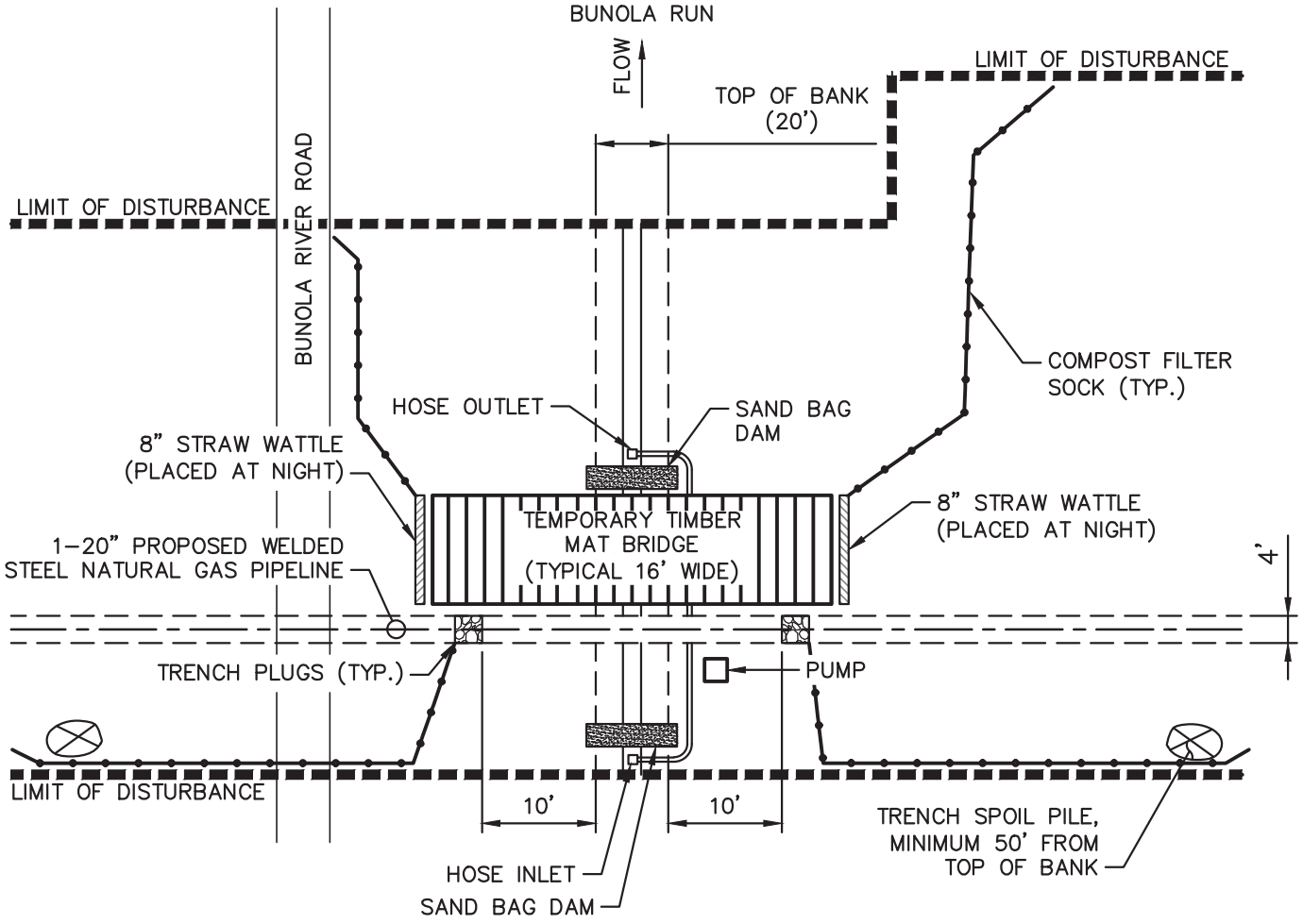

STREAM IMPACTS:
LENGTH: 20'
WIDTH: 75'
TOTAL AREA: 1,500 S.F.

PLAN
NOT TO SCALE

TETRA TECH
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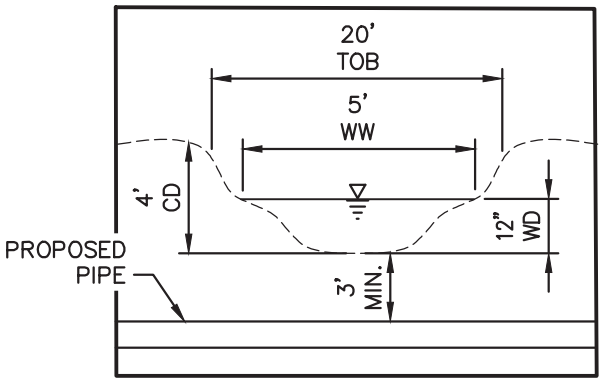
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHNEY COUNTY
GP-5/GP-8 FOR S-BB4
PLAN
SCALE: NOT TO SCALE

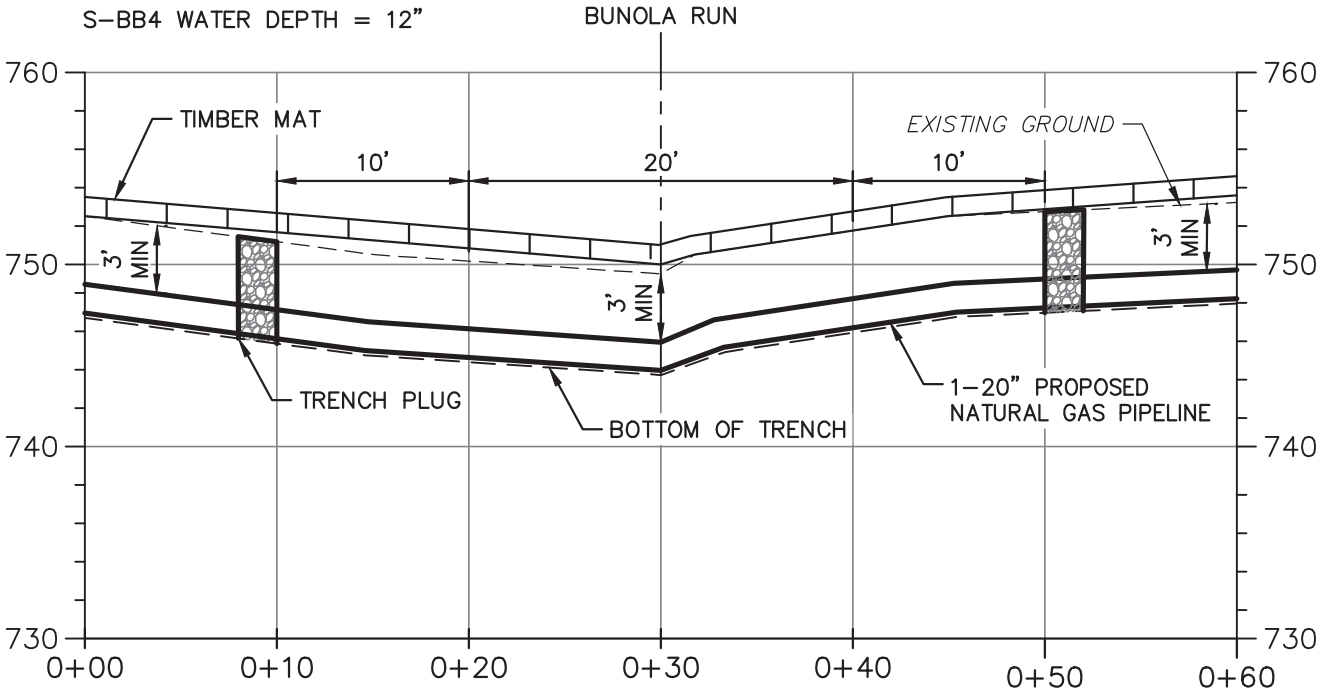
DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 5

FIGURE 2



NOT TO SCALE

S-BB4 CHANNEL WIDTH = 20'
S-BB4 CHANNEL DEPTH = 4'
S-BB4 WATER WIDTH = 5'
S-BB4 WATER DEPTH = 12"



PROFILE FOR S-BB4 OPEN-CUT TRENCH PROFILE

SCALE: HORIZ: 1" = 10'
VERT: 1" = 10'

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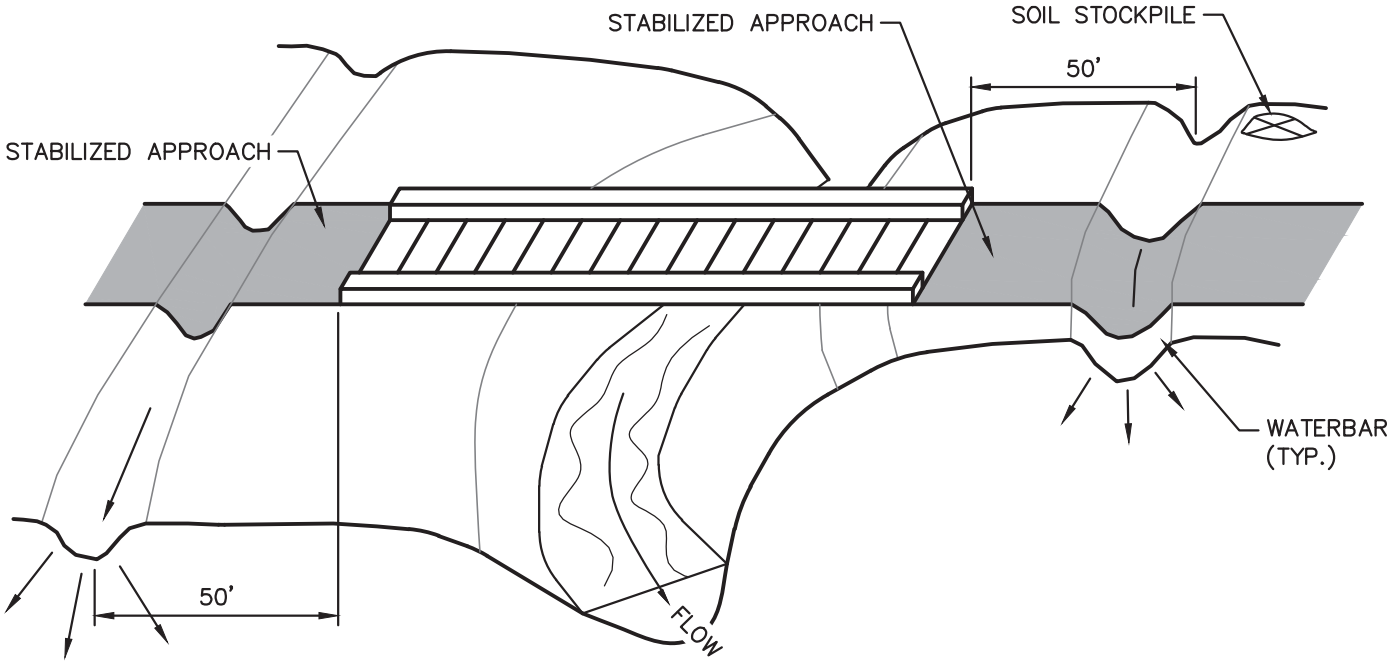
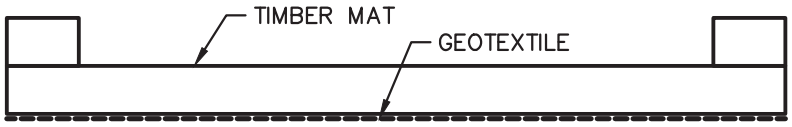
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE - ALLEGHENY COUNTY
GP-5/GP-8 FOR S-BB4
PROFILE
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	4 OF 5

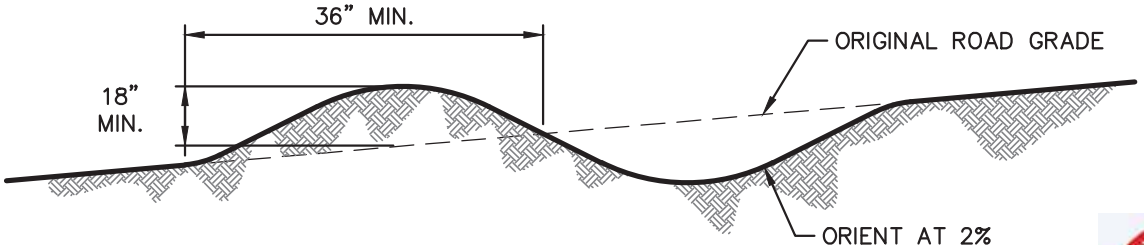
FIGURE 3



TEMPORARY STREAM CROSSING
NOT TO SCALE



TYPICAL STREAM CROSSING
NOT TO SCALE



WATERBAR DETAIL
NOT TO SCALE

NOTE:
APPROACH TO CROSSING NOT TO EXCEED A DEPTH OF 6" ABOVE ORIGINAL GRADE

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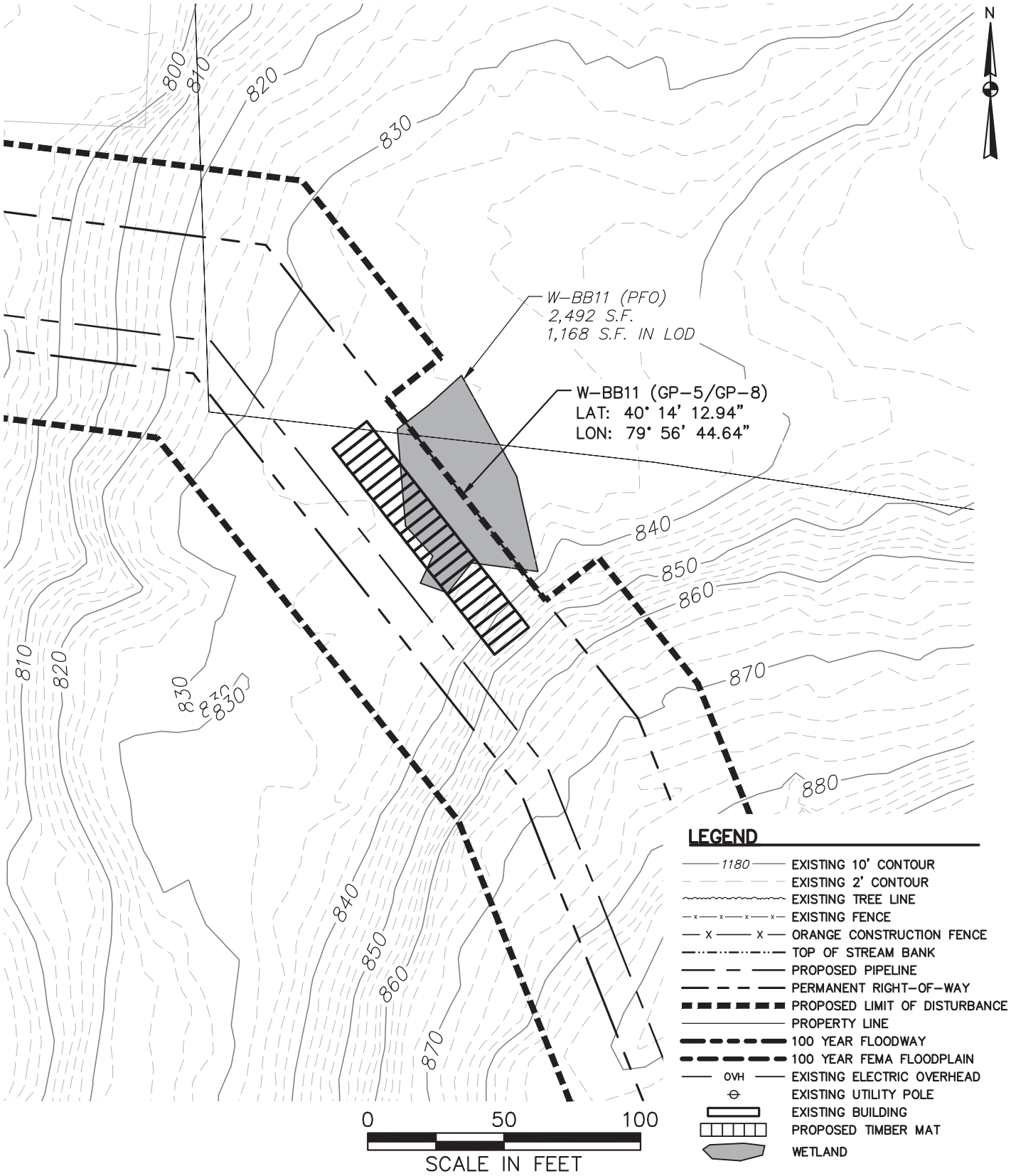
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP-8 FOR S-BB4
STREAM CROSSING
SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	5 OF 5

FIGURE 4



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EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP–5/GP–8 FOR W–BB11
PLAN
SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC–PB–00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

FIGURE 1

NOTES:

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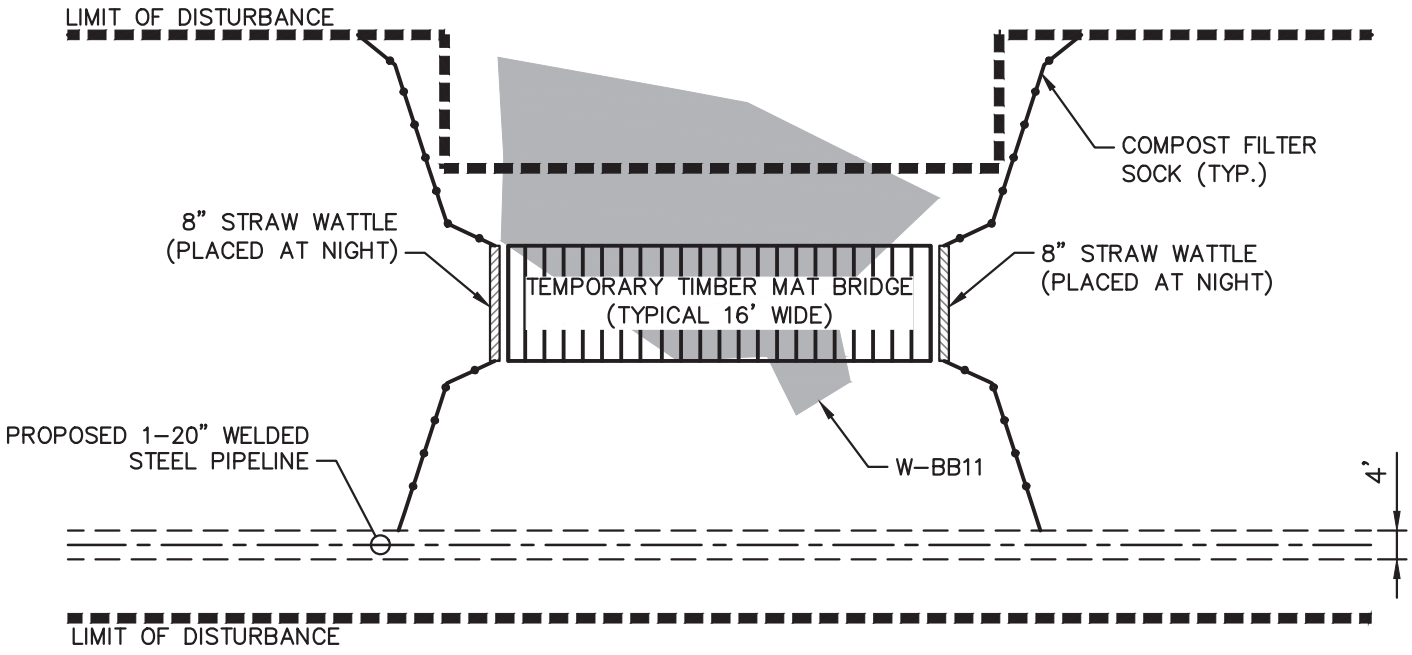

WETLAND IMPACTS:
TOTAL AREA: 1,168 S.F.

PLAN
NOT TO SCALE

TETRA TECH
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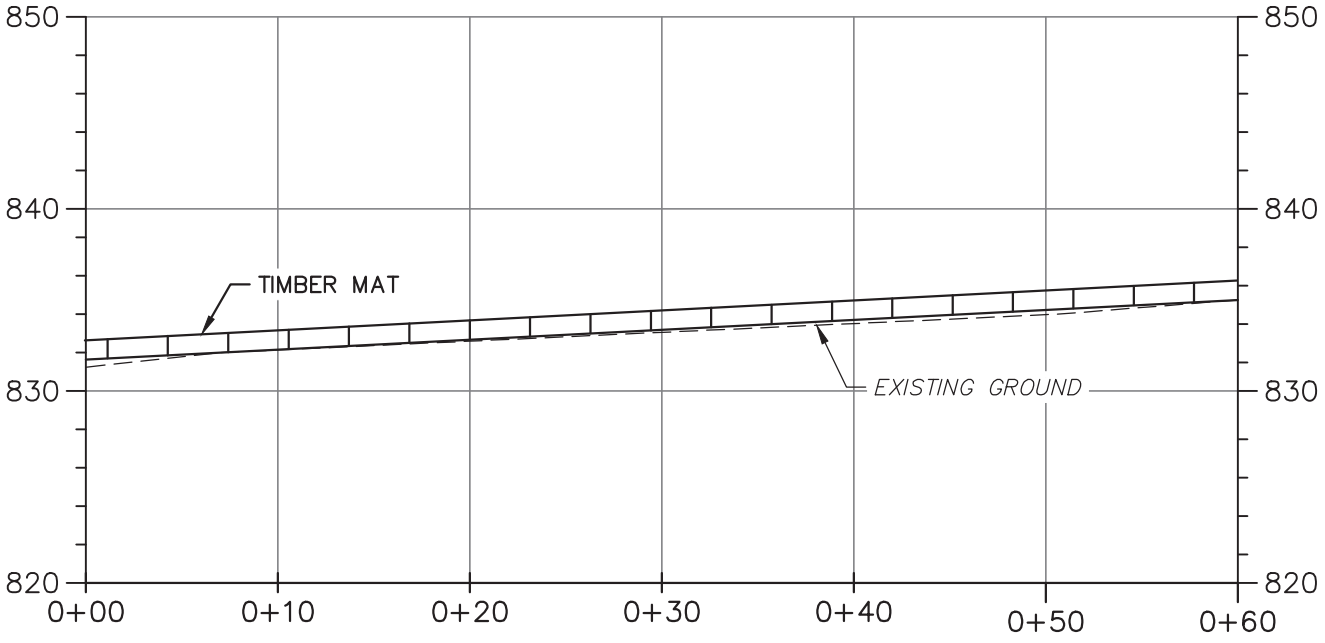
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHNEY COUNTY
GP-5/GP-8 FOR W-BB11
PLAN

SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 4

FIGURE 2



PROFILE FOR W-BB11 OPEN-CUT TRENCH PROFILE

SCALE: HORIZ: 1" = 10'
VERT: 1" = 10'

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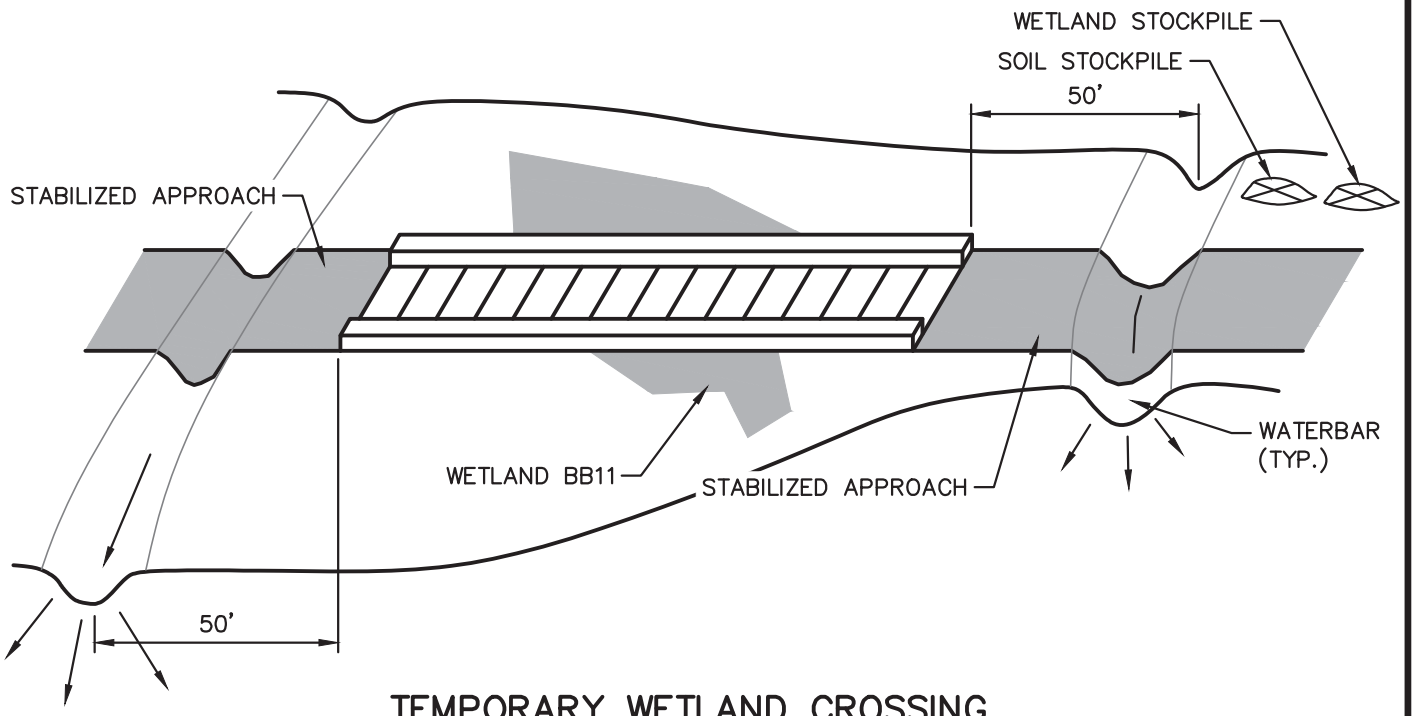
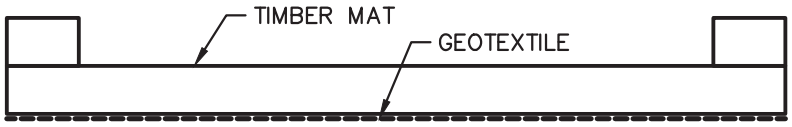
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE - ALLEGHENY COUNTY
GP-5/GP-8 FOR W-BB11
PROFILE
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 4

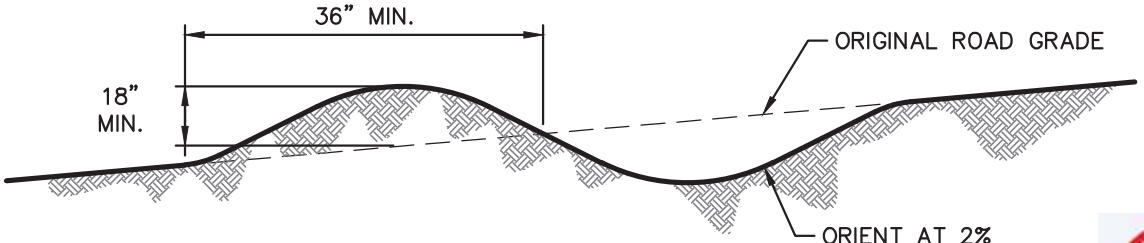
FIGURE 3



TEMPORARY WETLAND CROSSING
NOT TO SCALE



TYPICAL WETLAND CROSSING
NOT TO SCALE



WATERBAR DETAIL
NOT TO SCALE

NOTE:
APPROACH TO CROSSING NOT TO EXCEED A DEPTH OF 6" ABOVE ORIGINAL GRADE

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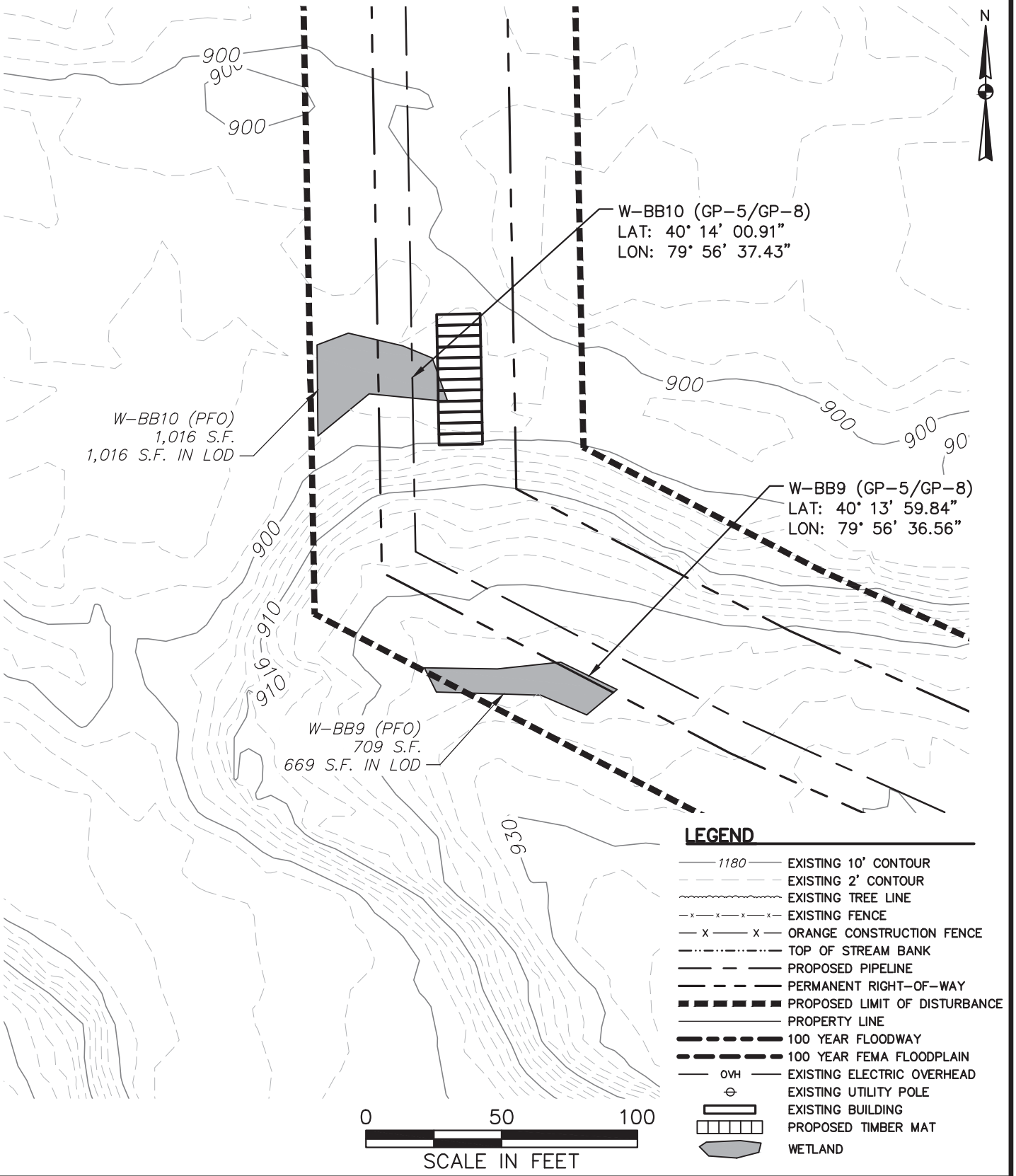
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP-8 FOR W-BB11
WETLAND CROSSING
SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	4 OF 4

FIGURE 4



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EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP–5/GP–8 FOR W–BB10/W–BB9
PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC–PB–00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

FIGURE 1

NOTES:

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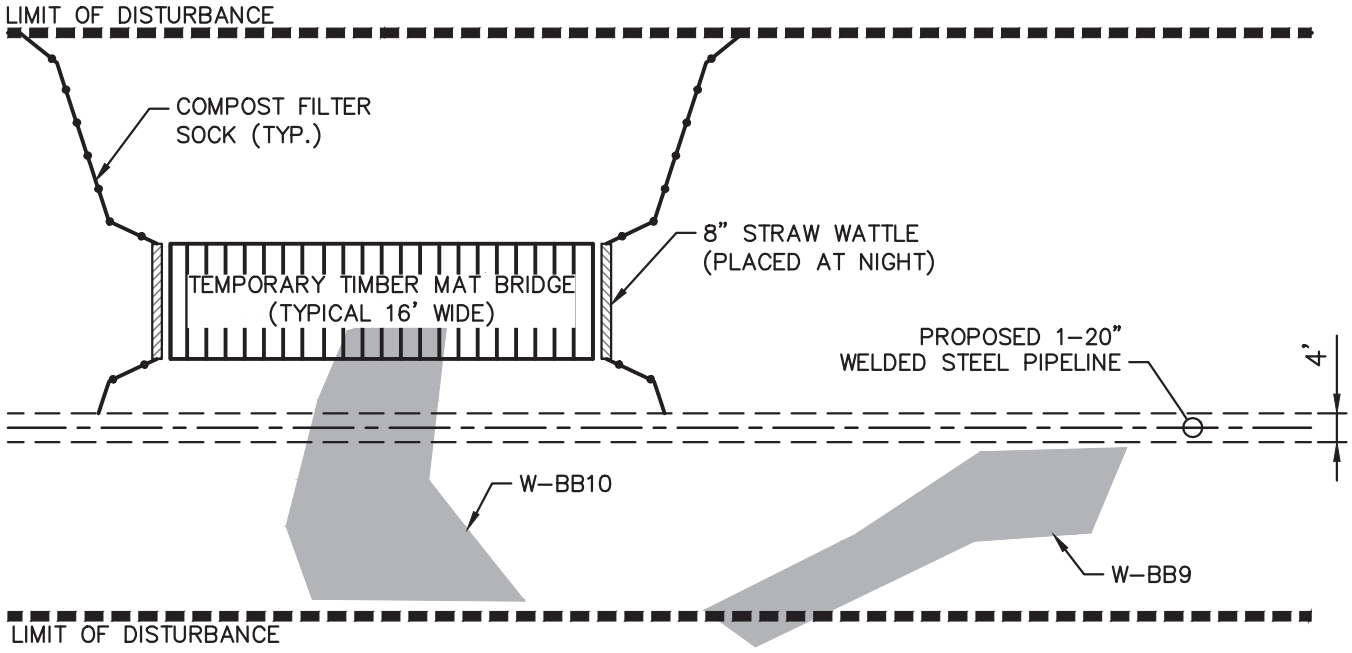

WETLAND BB10 IMPACTS:
TOTAL AREA: 1,016 S.F.

WETLAND BB9 IMPACTS:
TOTAL AREA: 669 S.F.

PENNSYLVANIA ONE CALL SYSTEM INC. 1-800-242-1776 STOP-CALL BEFORE YOU DIG!

PLAN
NOT TO SCALE

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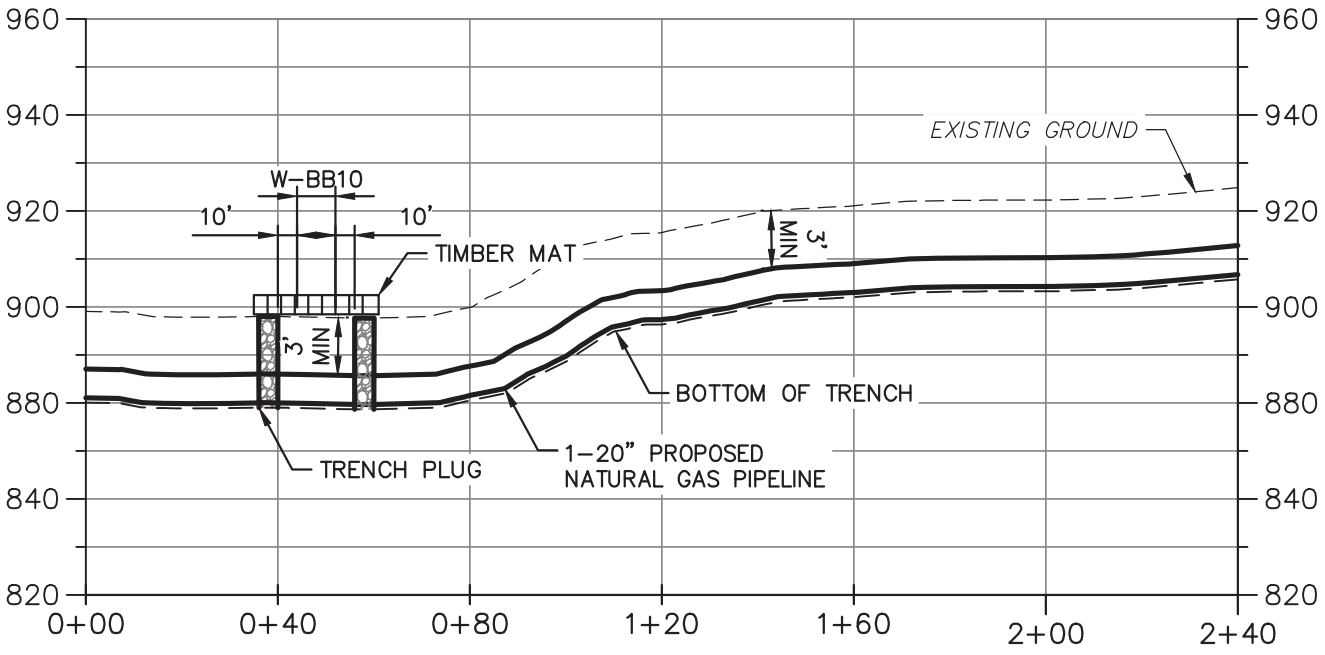
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE - ALLEGHNEY COUNTY
GP-5/GP-8 FOR W-BB10/W-BB9
PLAN
SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 4

FIGURE 2



PROFILE FOR W-BB10/W-BB9 OPEN-CUT TRENCH PROFILE

SCALE: HORIZ: 1" = 40'
VERT: 1" = 40'

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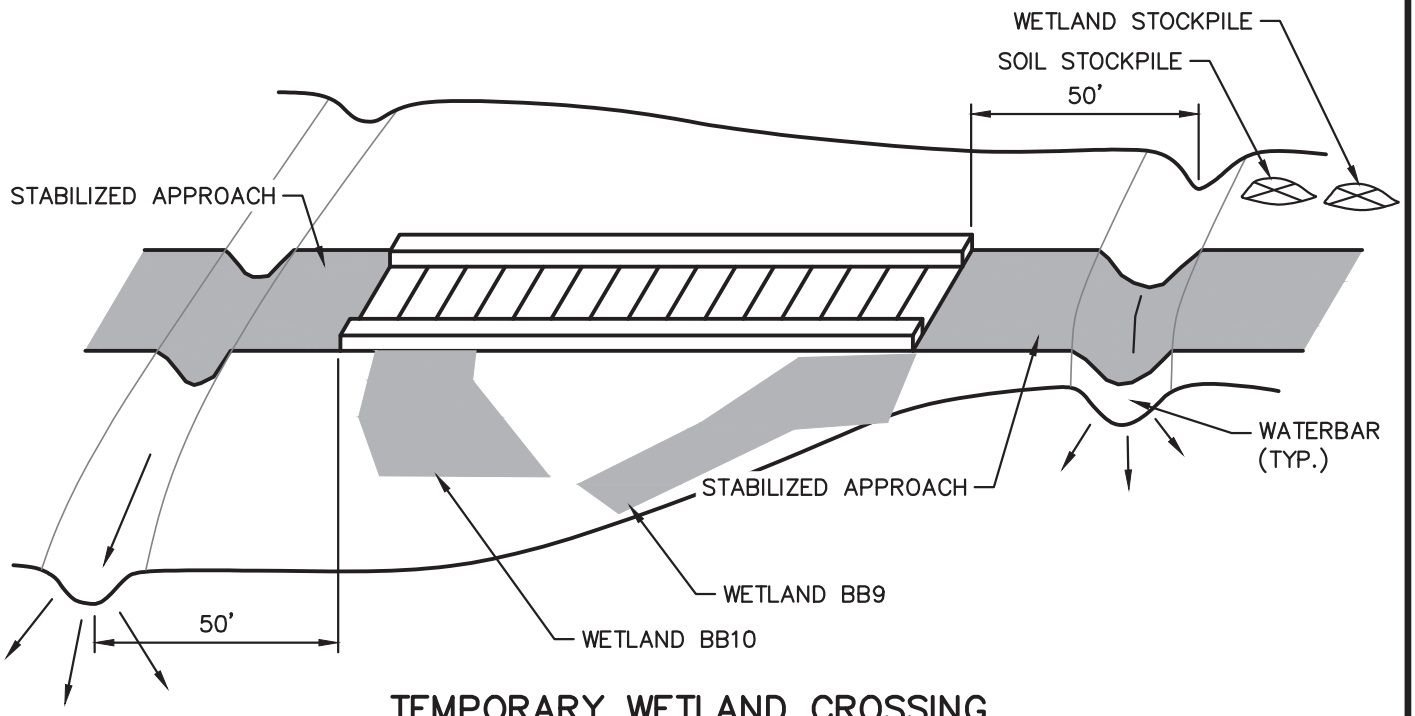
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE - ALLEGHENY COUNTY
GP-5/GP-8 FOR W-BB10/W-BB9
PROFILE
SCALE: AS NOTED

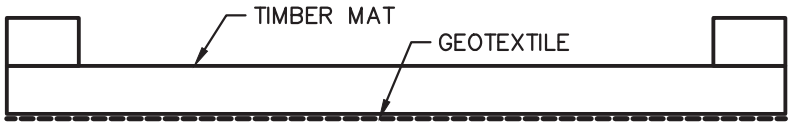
DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 4

FIGURE 3



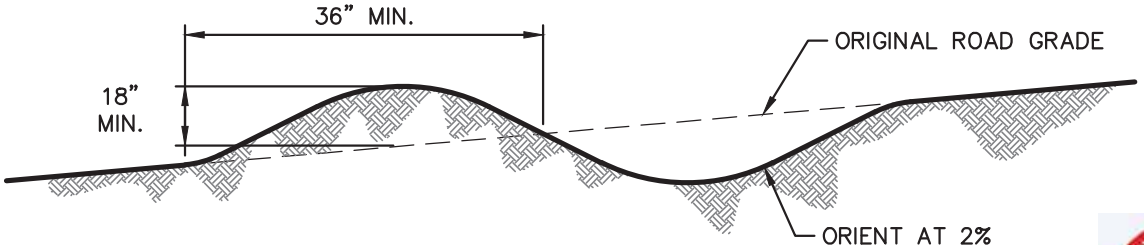
TEMPORARY WETLAND CROSSING

NOT TO SCALE



TYPICAL WETLAND CROSSING

NOT TO SCALE



WATERBAR DETAIL

NOT TO SCALE

NOTE:
APPROACH TO CROSSING NOT TO EXCEED A DEPTH OF 6" ABOVE ORIGINAL GRADE

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WWW.TETRATECH.COM
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PITTSBURGH, PA 15220
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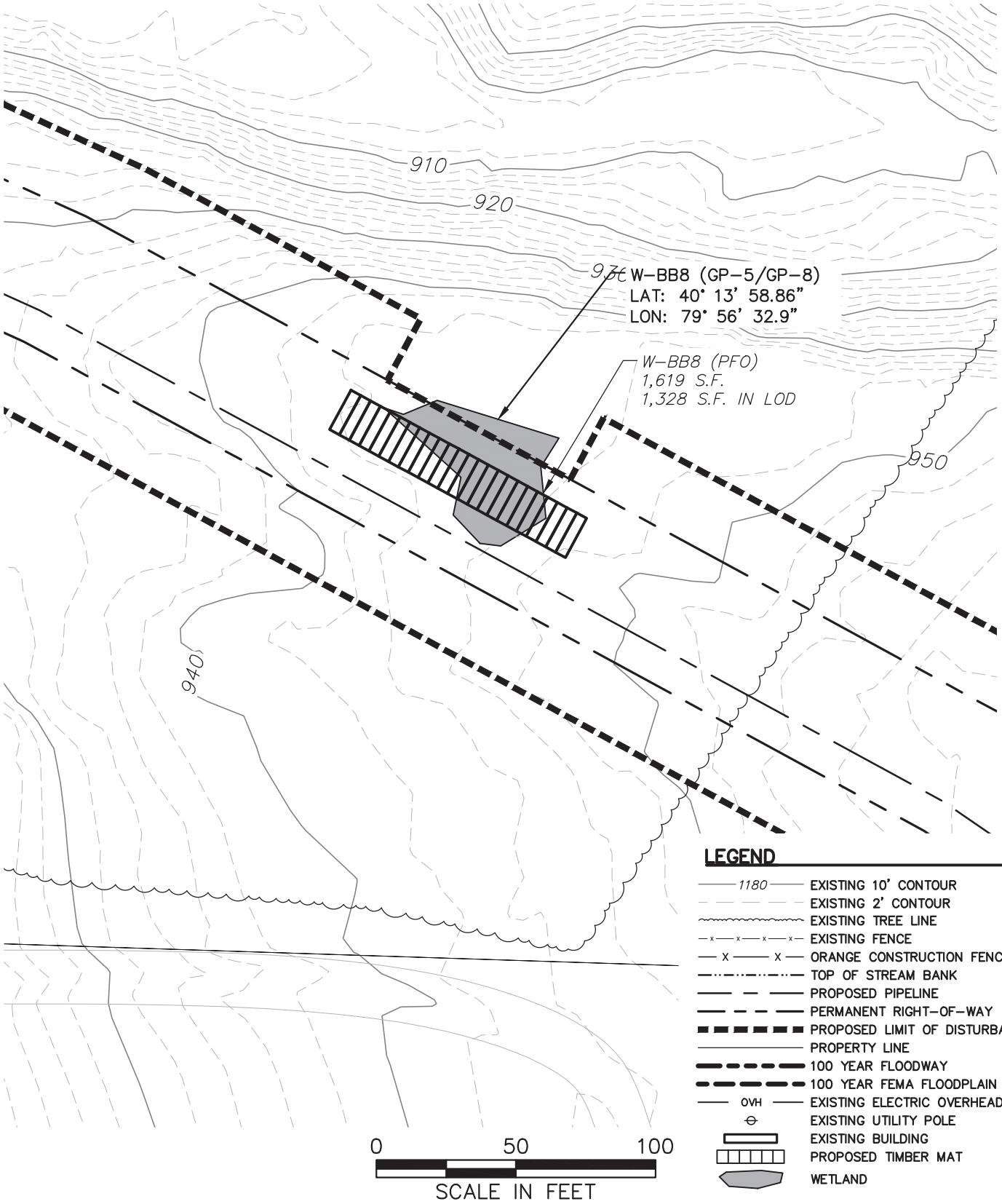
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP-8 FOR W-BB10/W-BB9 WETLAND CROSSING

SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	4 OF 4

FIGURE 4



TETRA TECH
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661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP-5/GP-8 FOR W-BB8
PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

FIGURE 1

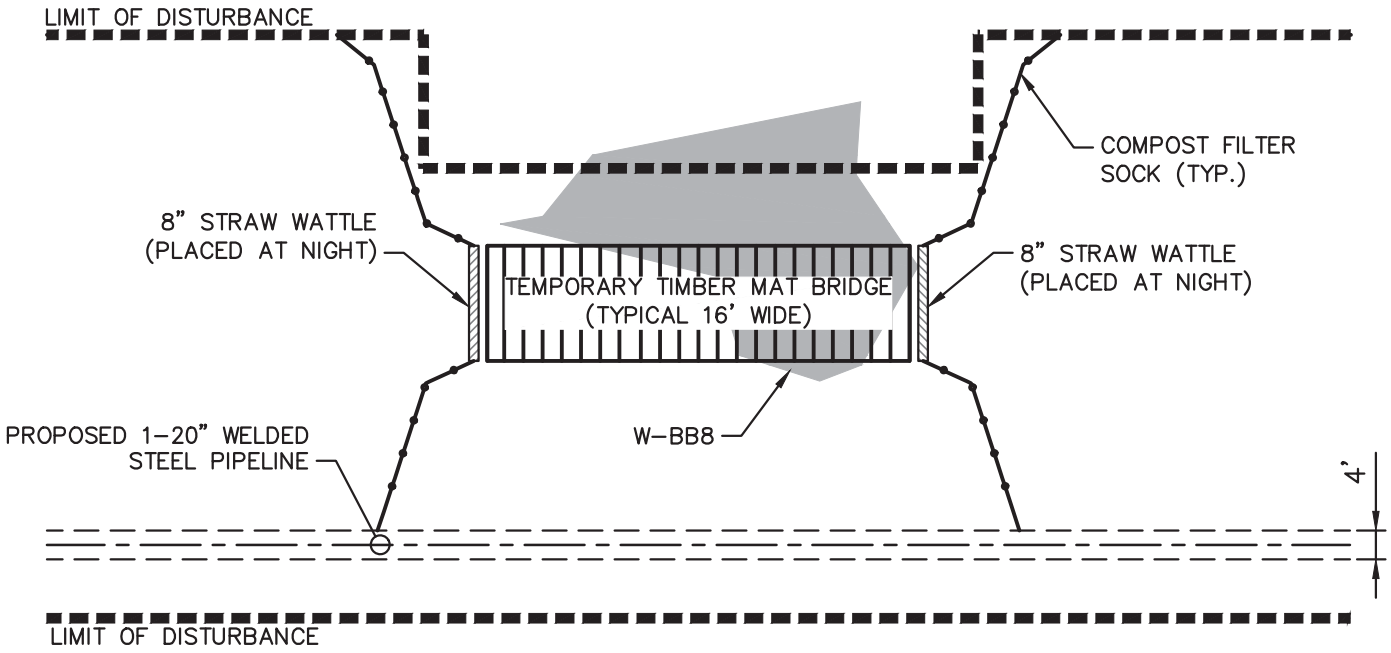
R:_212 - OGA\O&G\EQT\00176 - EEP\GPs\H318\H318 - 00176GP025.dwg PIT NICHOLE.NAJESKI 10/20/2015 7:49:37 AM

NOTES:

1. TOPO AND SITE FEATURE CREATED USING http:\\www.pasda.psu.edu.

2. TOPSOIL STOCKPILES SHALL BE LOCATED A MINIMUM OF 50' AWAY FROM THE EDGE OF THE WETLAND.

3. THE RIGHTS-OF-WAY AND EASEMENTS SHOWN ON THIS PLAN ARE THE RESPONSIBILITY OF EQUITRANS, LP TO SECURE WITH THE INDIVIDUAL PROPERTY OWNER. THE RIGHTS-OF-WAYS AND EASEMENTS SHOWN ON THIS PERMIT DRAWING REPRESENT THE BEST AVAILABLE PROPERTY INFORMATION AS PROVIDED TO TETRA TECH NUS, INC. BY EQUITRANS, LP. THE RIGHTS-OF-WAYS AND EASEMENTS SHALL BE VERIFIED AND LOCATED IN THE FIELD BY EQUITRANS, LP.



WETLAND IMPACTS:
TOTAL AREA: 1,328 S.F.

PLAN
NOT TO SCALE

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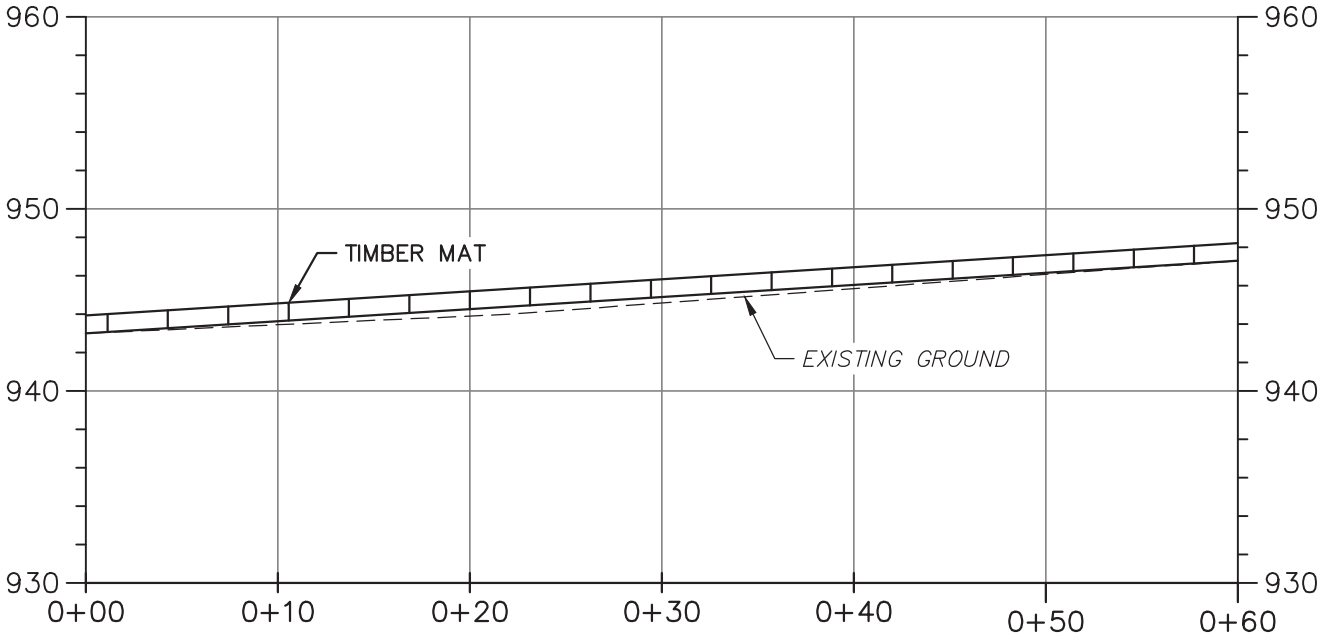
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHNEY COUNTY
GP-5/GP-8 FOR W-BB8
PLAN

SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 4

FIGURE 2



PROFILE FOR W–BB8 OPEN–CUT TRENCH PROFILE

SCALE: HORIZ: 1" = 10'
VERT: 1" = 10'

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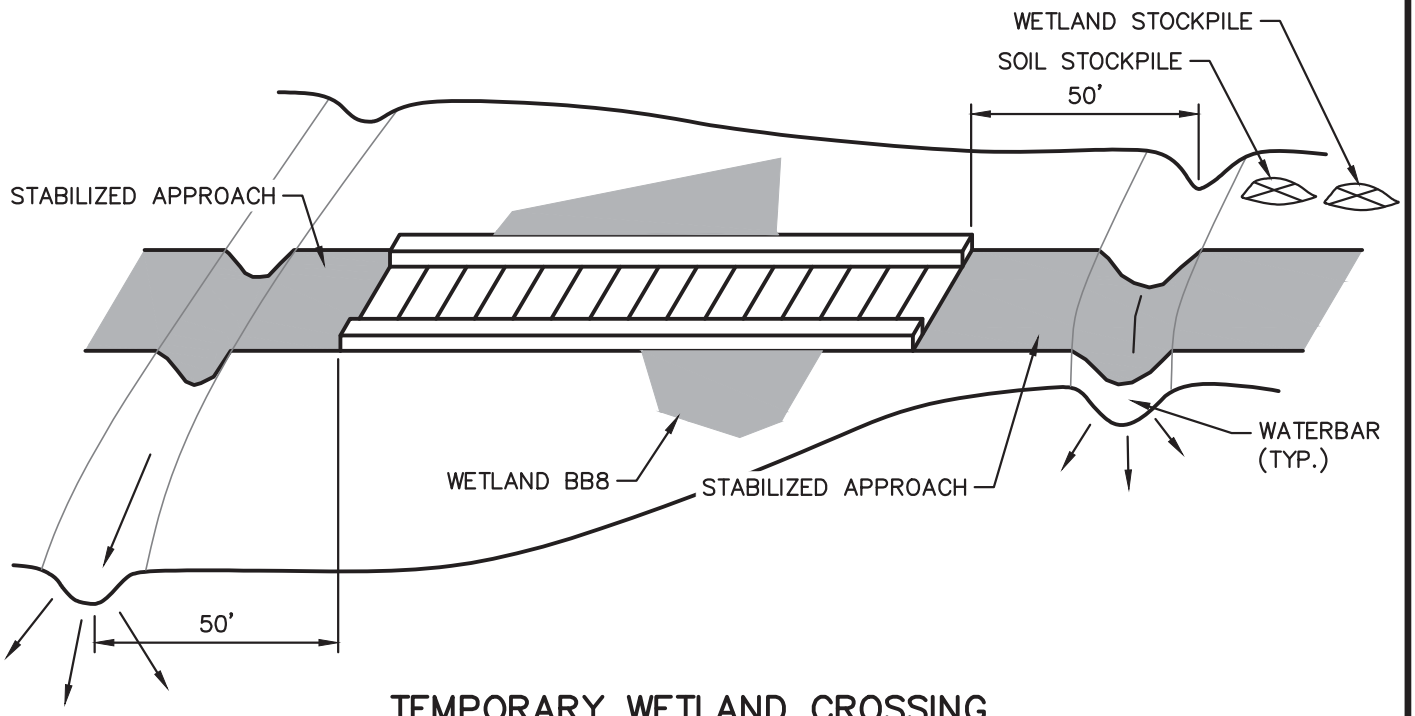
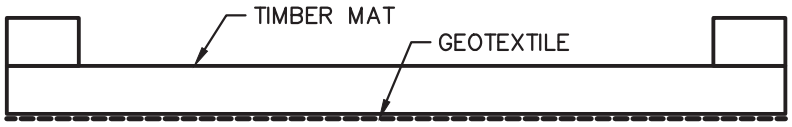
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP–5/GP–8 FOR W–BB8
PROFILE
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	212IC–PB–00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 4

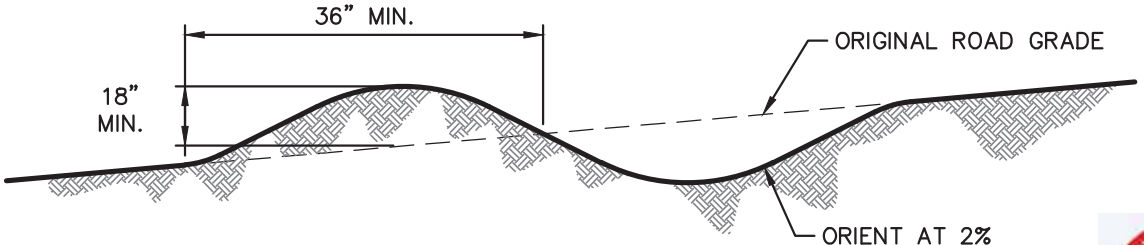
FIGURE 3



TEMPORARY WETLAND CROSSING
NOT TO SCALE



TYPICAL WETLAND CROSSING
NOT TO SCALE



WATERBAR DETAIL
NOT TO SCALE

NOTE:
APPROACH TO CROSSING NOT TO EXCEED A DEPTH OF 6" ABOVE ORIGINAL GRADE

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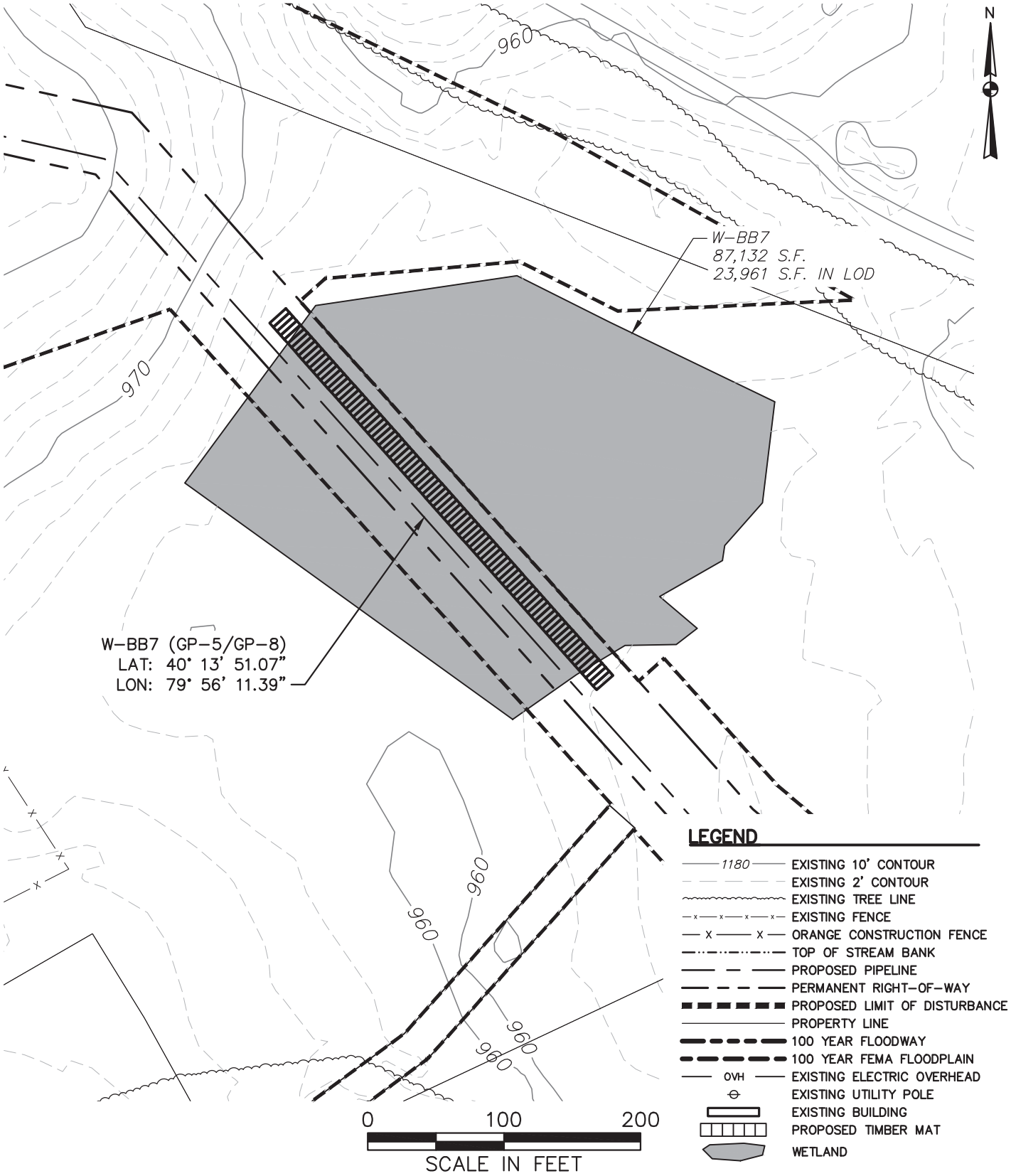
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP-8 FOR W-BB8
WETLAND CROSSING
SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	4 OF 4

FIGURE 4



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EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP-5/GP-8 FOR W-BB7
PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

FIGURE 1

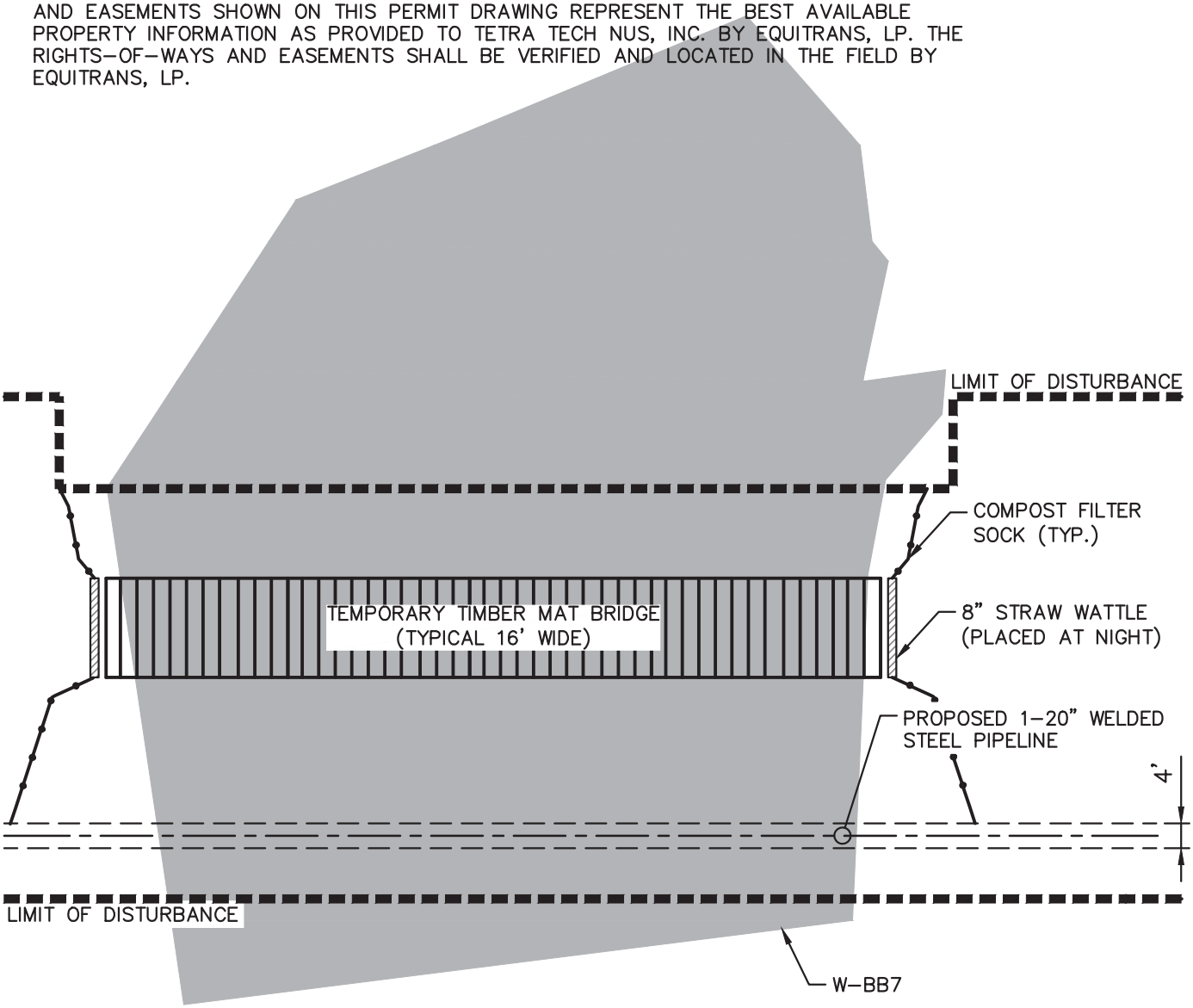
R:_212 – OGA\O&G\EQT\00176 – EEP\GPs\H318\H318 – 00176GP029.dwg PIT NICHOLE.NAJESKI 10/20/2015 7:50:47 AM

NOTES:

1. TOPO AND SITE FEATURE CREATED USING http:\\www.pasda.psu.edu.

2. TOPSOIL STOCKPILES SHALL BE LOCATED A MINIMUM OF 50' AWAY FROM THE EDGE OF THE WETLAND.

3. THE RIGHTS-OF-WAY AND EASEMENTS SHOWN ON THIS PLAN ARE THE RESPONSIBILITY OF EQUITRANS, LP TO SECURE WITH THE INDIVIDUAL PROPERTY OWNER. THE RIGHTS-OF-WAYS AND EASEMENTS SHOWN ON THIS PERMIT DRAWING REPRESENT THE BEST AVAILABLE PROPERTY INFORMATION AS PROVIDED TO TETRA TECH NUS, INC. BY EQUITRANS, LP. THE RIGHTS-OF-WAYS AND EASEMENTS SHALL BE VERIFIED AND LOCATED IN THE FIELD BY EQUITRANS, LP.



WETLAND IMPACTS:
TOTAL AREA: 23,961 S.F.

PLAN
NOT TO SCALE

TETRA TECH
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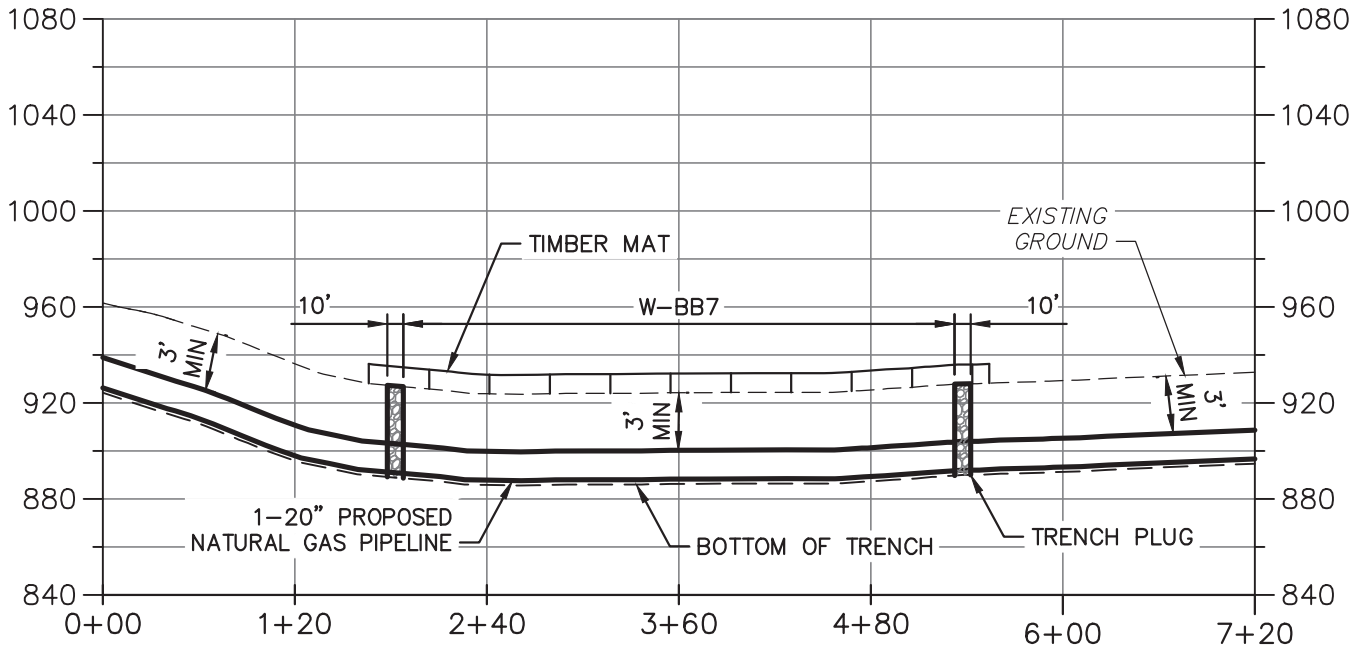
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE - ALLEGHNEY COUNTY
GP-5/GP-8 FOR W-BB7
PLAN

SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 4

FIGURE 2



PROFILE FOR W-BB7 OPEN-CUT TRENCH PROFILE

SCALE: HORIZ: 1" = 120'
VERT: 1" = 40'

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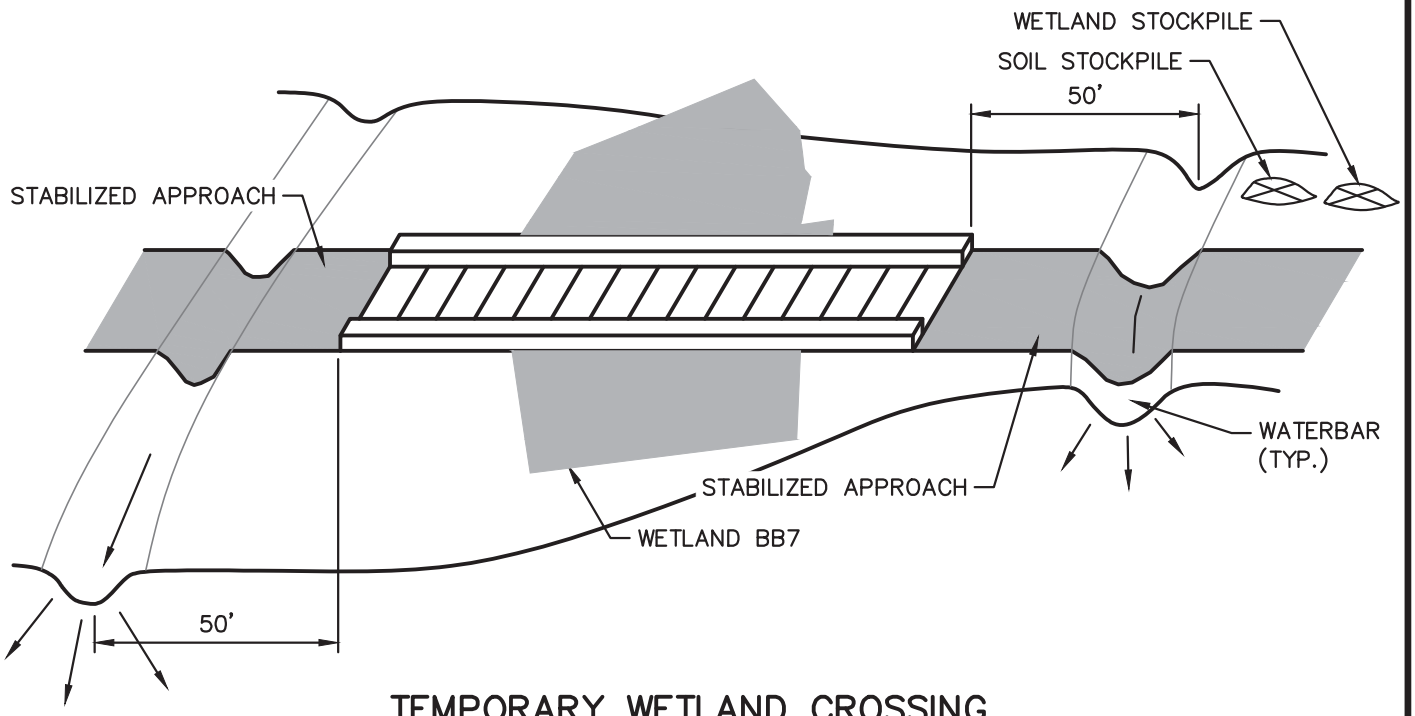
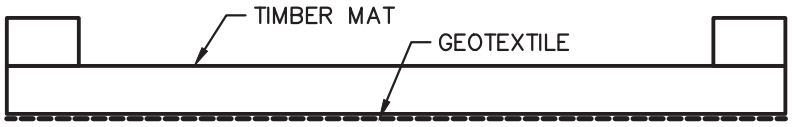
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP-5/GP-8 FOR W-BB7
PROFILE
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 4

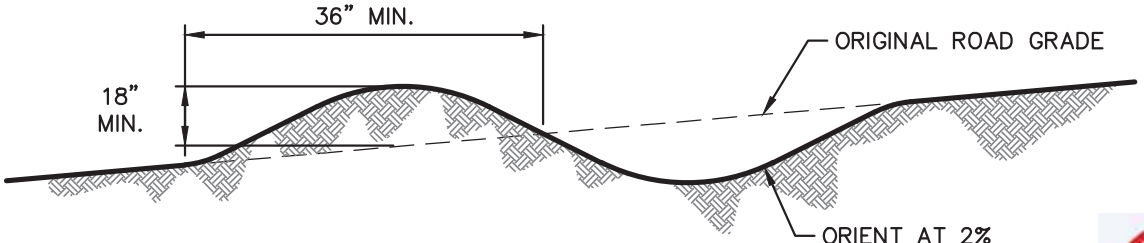
FIGURE 3



TEMPORARY WETLAND CROSSING
NOT TO SCALE



TYPICAL WETLAND CROSSING
NOT TO SCALE



WATERBAR DETAIL
NOT TO SCALE

NOTE:
APPROACH TO CROSSING NOT TO EXCEED A DEPTH OF 6" ABOVE ORIGINAL GRADE

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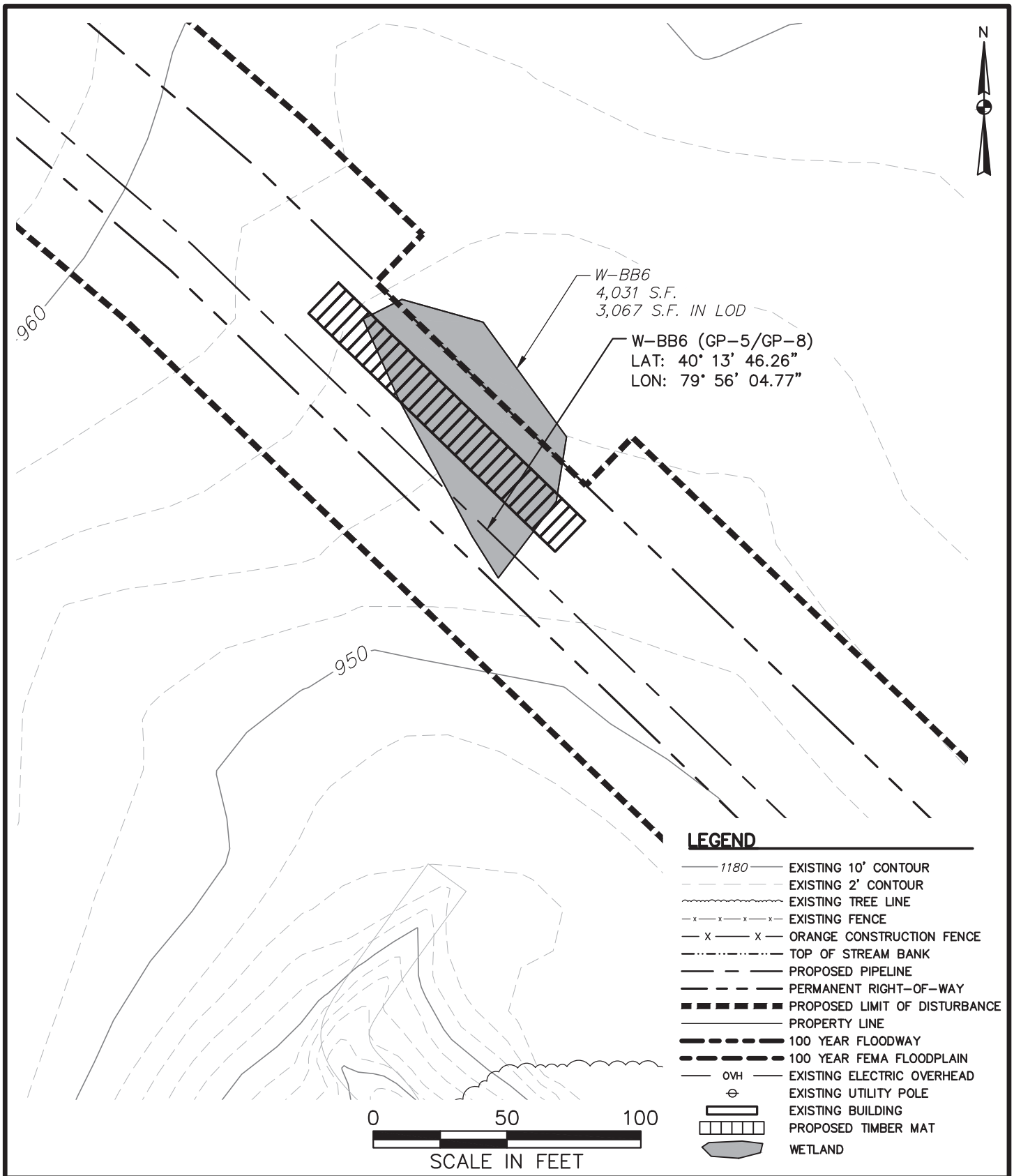
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP-8 FOR W-BB7
WETLAND CROSSING
SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	4 OF 4

FIGURE 4



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EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP-5/GP-8 FOR W-BB6
PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

FIGURE 1

R:_212 – OGA\O&G\EQT\00176 – EEP\GPs\H318\H318 – 00176GP033.dwg PIT NICHOLE.NAJESKI 10/20/2015 7:51:57 AM

NOTES:

1. TOPO AND SITE FEATURE CREATED USING http:\\www.pasda.psu.edu.

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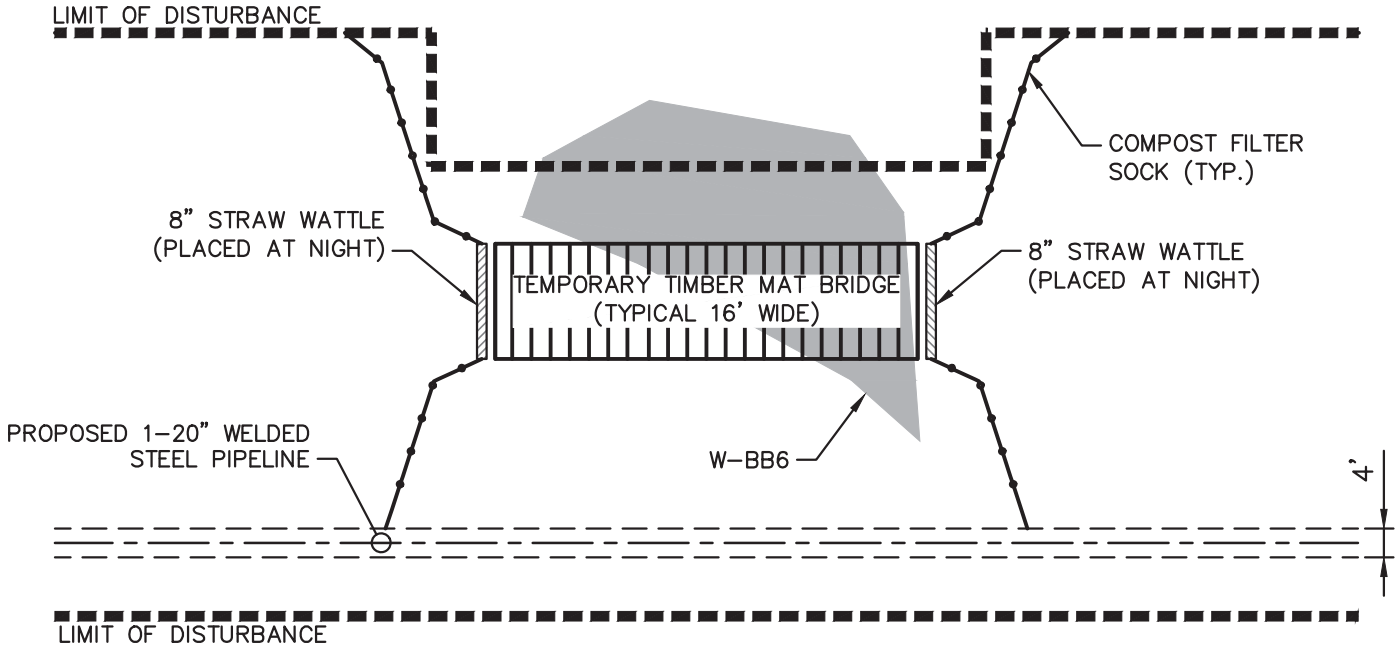

WETLAND IMPACTS:
TOTAL AREA: 3,067 S.F.

PLAN
NOT TO SCALE

TETRA TECH
WWW.TETRATECH.COM
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
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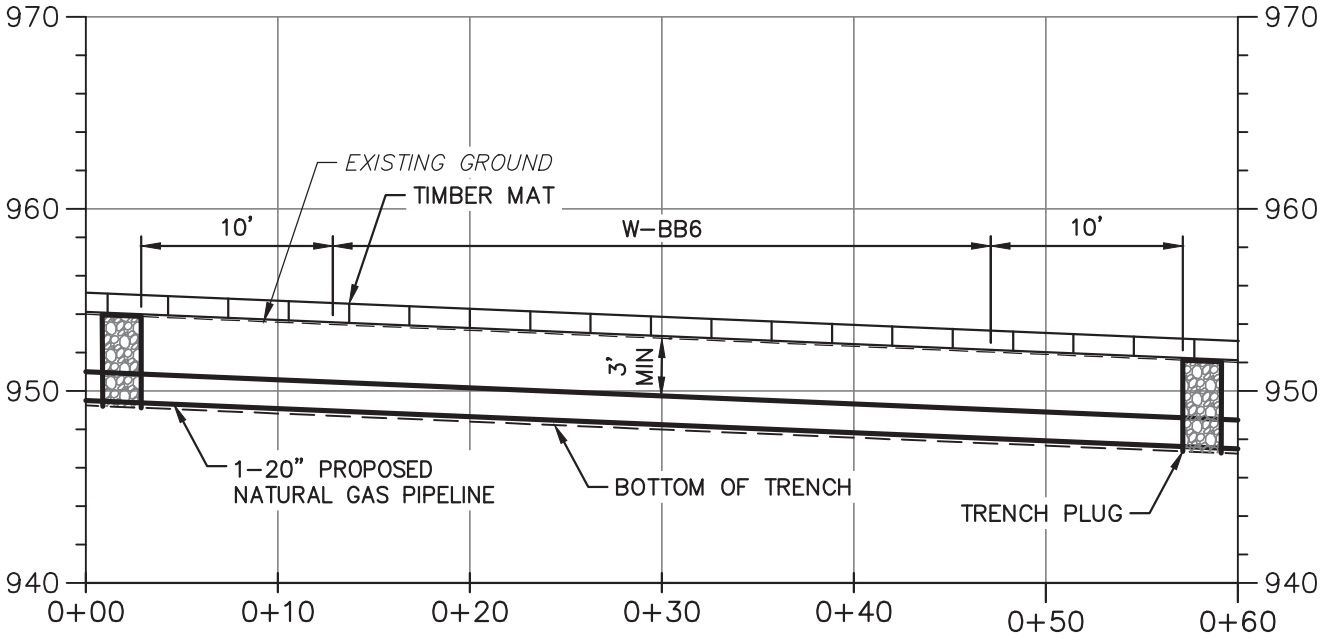
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHNEY COUNTY
GP-5/GP-8 FOR W-BB6
PLAN

SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 4

FIGURE 2



PROFILE FOR W-BB6 OPEN-CUT TRENCH PROFILE

SCALE: HORIZ: 1" = 10'
VERT: 1" = 10'

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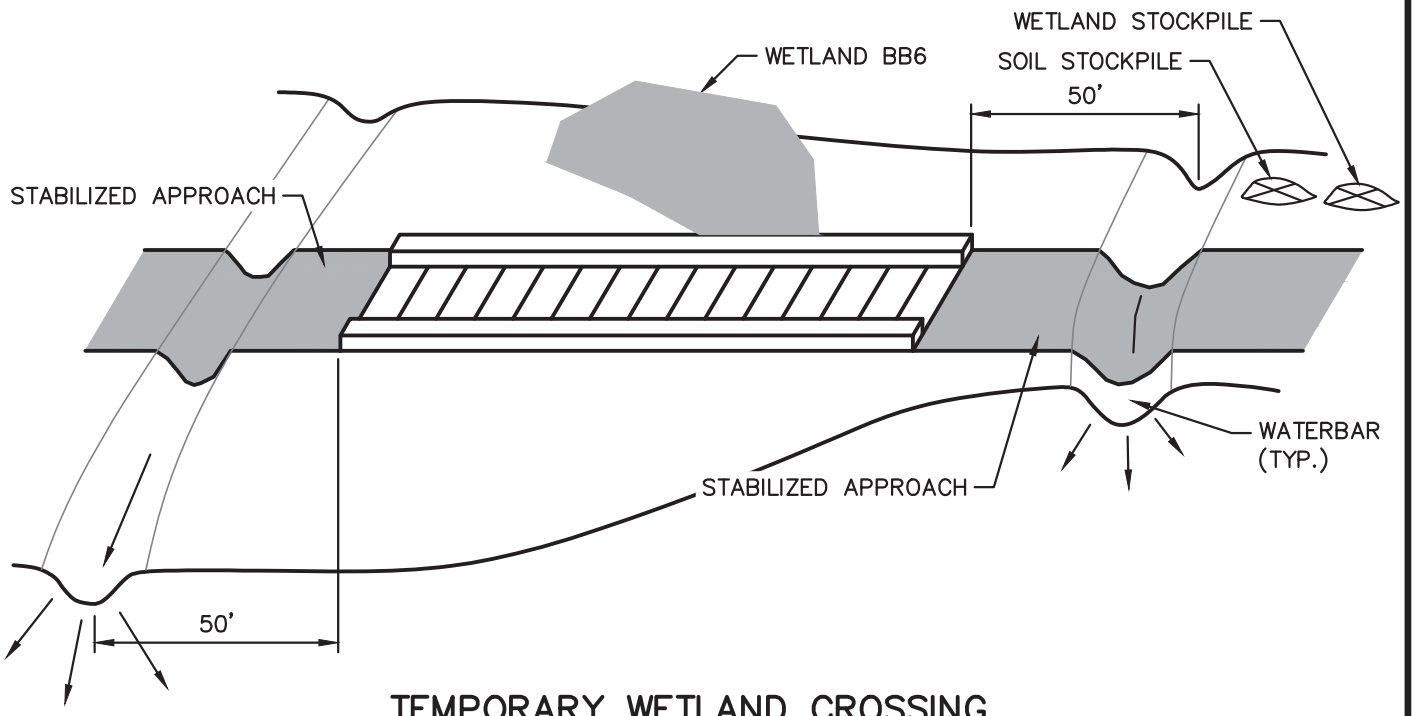
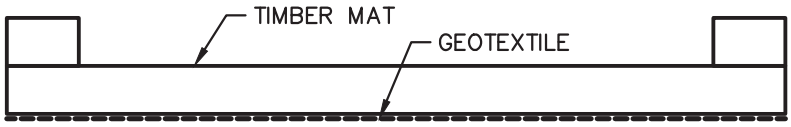
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE - ALLEGHENY COUNTY
GP-5/GP-8 FOR W-BB6
PROFILE
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 4

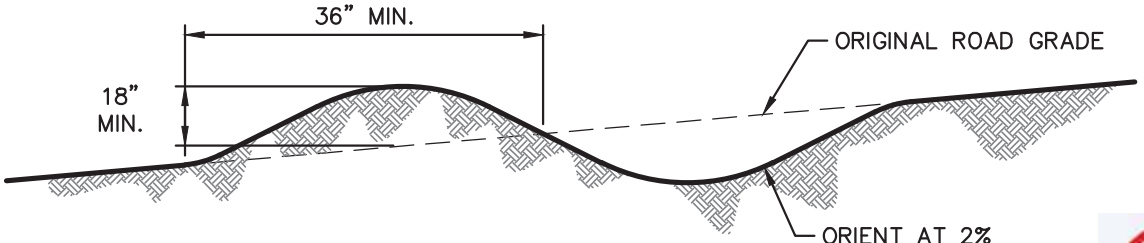
FIGURE 3



TEMPORARY WETLAND CROSSING
NOT TO SCALE



TYPICAL WETLAND CROSSING
NOT TO SCALE



WATERBAR DETAIL
NOT TO SCALE

NOTE:
APPROACH TO CROSSING NOT TO EXCEED A DEPTH OF 6" ABOVE ORIGINAL GRADE

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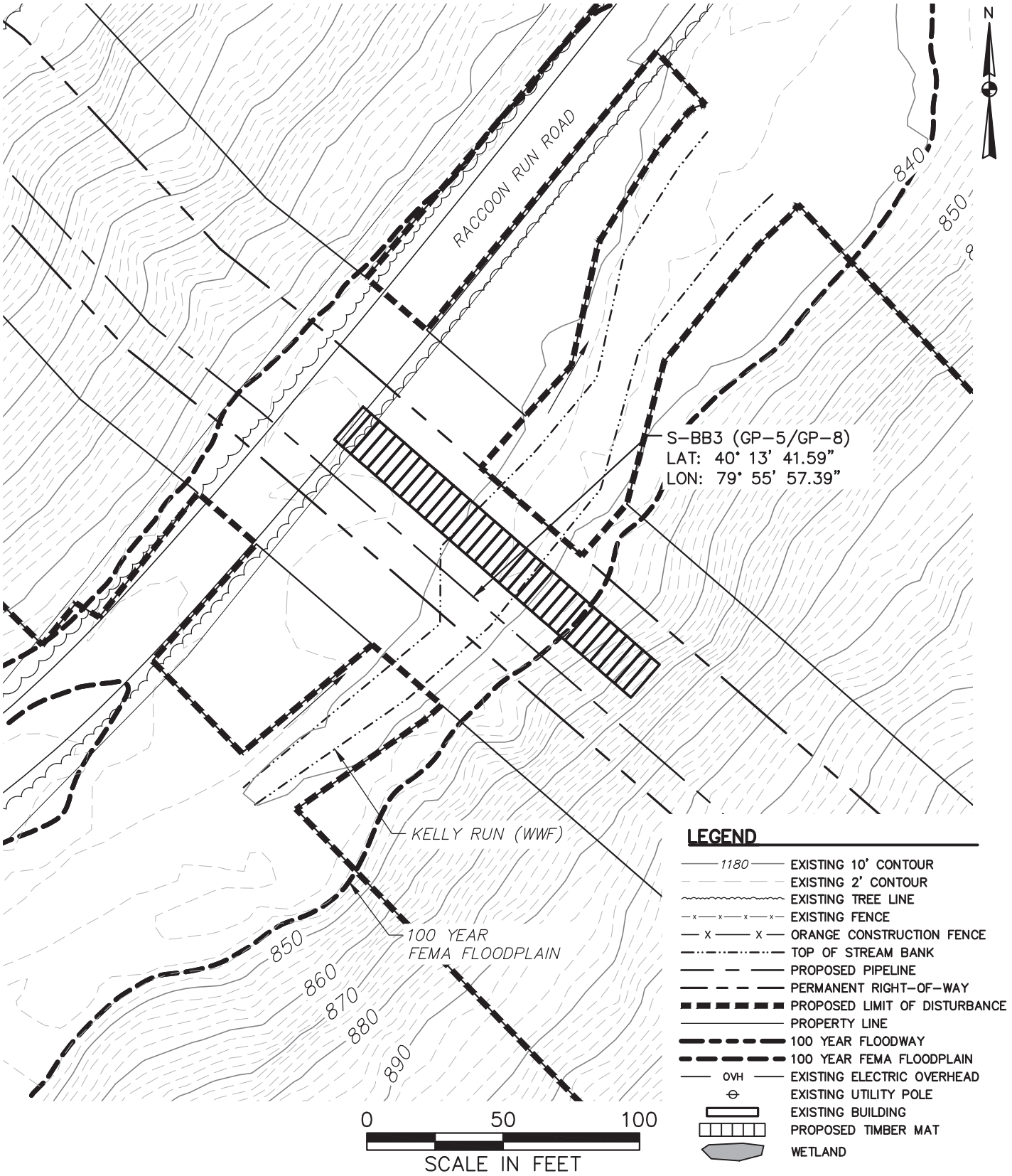
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP-8 FOR W-BB6
WETLAND CROSSING
SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	4 OF 4

FIGURE 4



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EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP-5/GP-8 FOR S-BB3
PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

FIGURE 1

R:_212 – OGA\O&G\EQT\00176 – EEP\GPs\H318\H318 – 00176GP037.dwg PIT NICHOLE.NAJESKI 10/19/2015 10:56:35 AM

NOTES:

1. TOPO AND SITE FEATURE CREATED USING http:\\www.pasda.psu.edu.

2. TOPSOIL STOCKPILES SHALL BE LOCATED A MINIMUM OF 50' AWAY FROM THE EDGE OF THE WETLAND.

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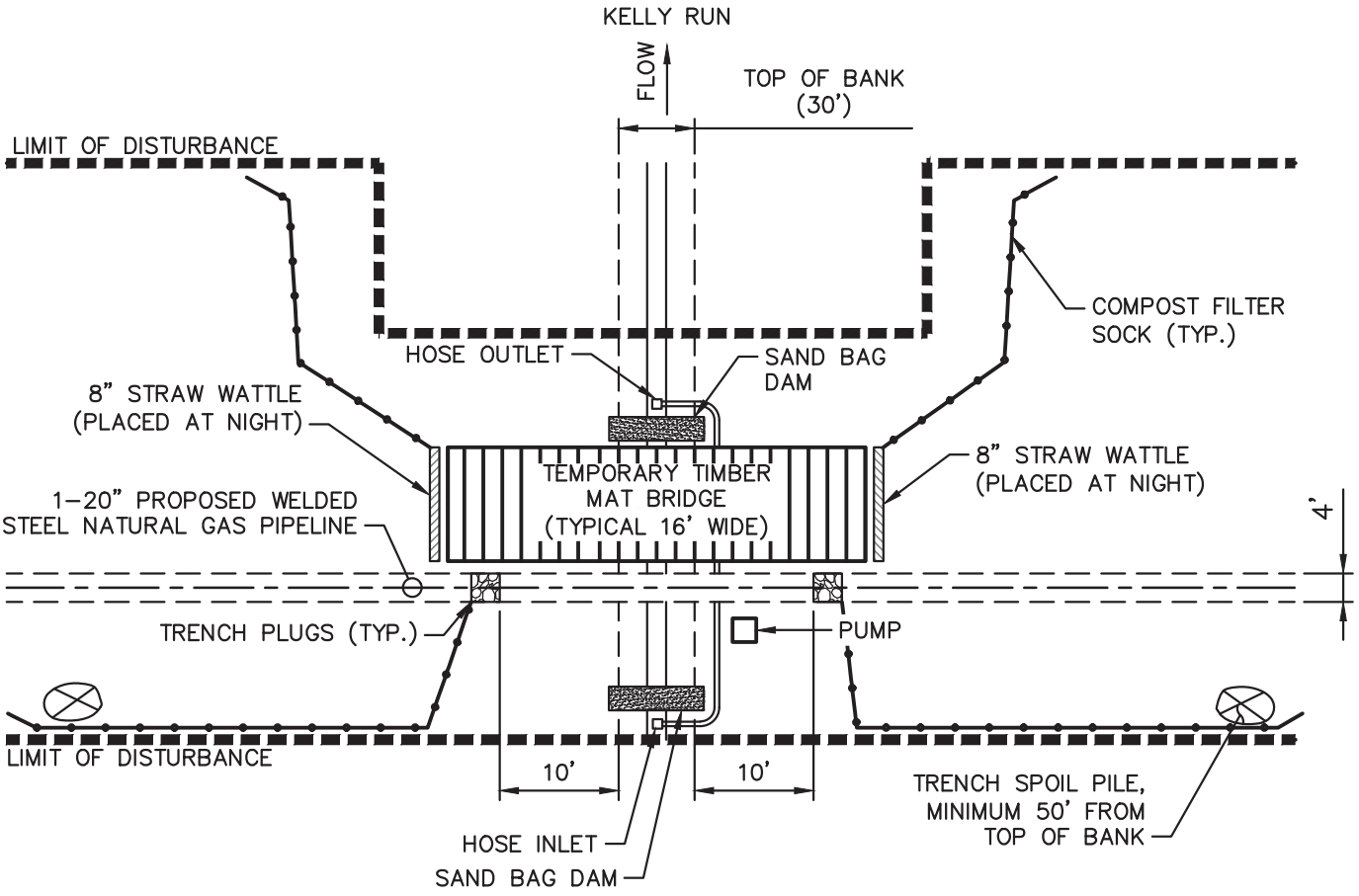

STREAM IMPACTS:
LENGTH: 30'
WIDTH: 75'
TOTAL AREA: 2,250 S.F.

FLOODPLAIN IMPACTS:
LENGTH: 141.65'
WIDTH: 75'
TOTAL AREA: 10,620 S.F.

PLAN
NOT TO SCALE

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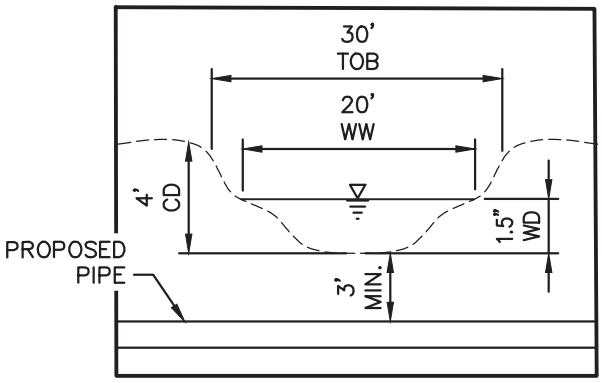
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE - ALLEGHNEY COUNTY
GP-5/GP-8 FOR S-BB3
PLAN
SCALE: NOT TO SCALE

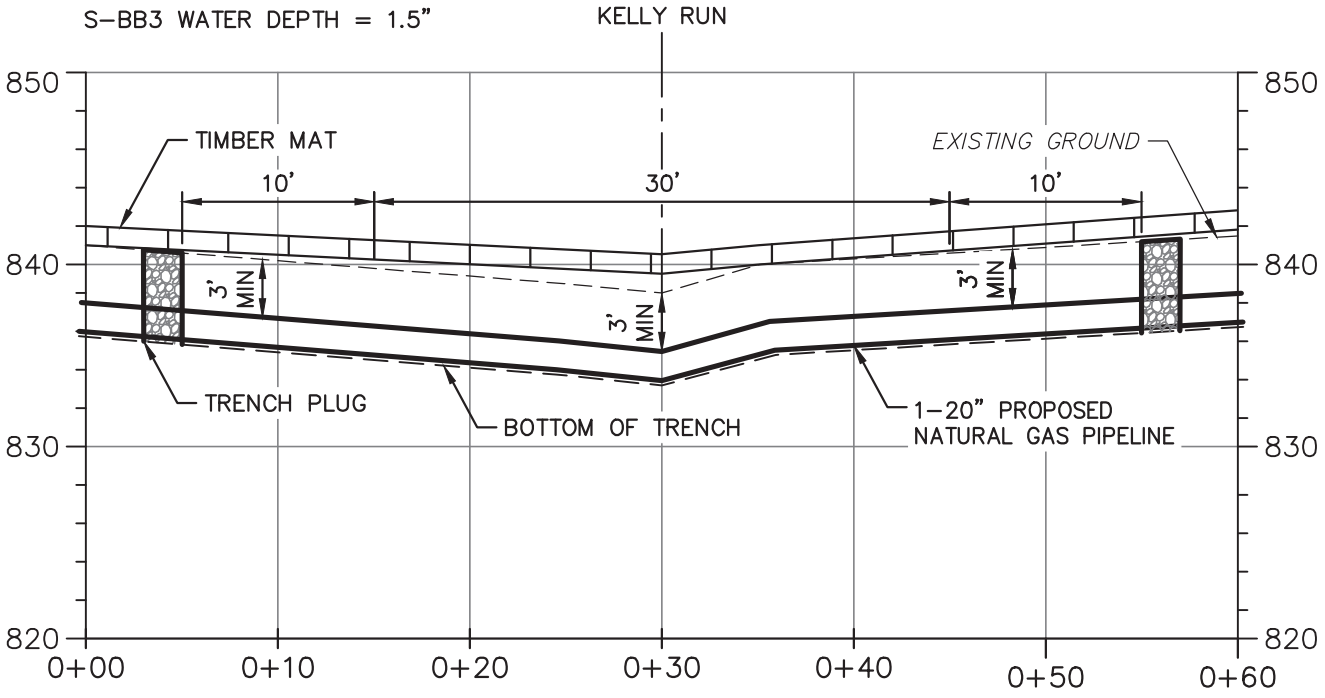
DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 4

FIGURE 2



NOT TO SCALE

S–BB3 CHANNEL WIDTH = 30'
S–BB3 CHANNEL DEPTH = 4'
S–BB3 WATER WIDTH = 20'
S–BB3 WATER DEPTH = 1.5"



PROFILE FOR S–BB3 OPEN–CUT TRENCH PROFILE

SCALE: HORIZ: 1" = 10'
VERT: 1" = 10'

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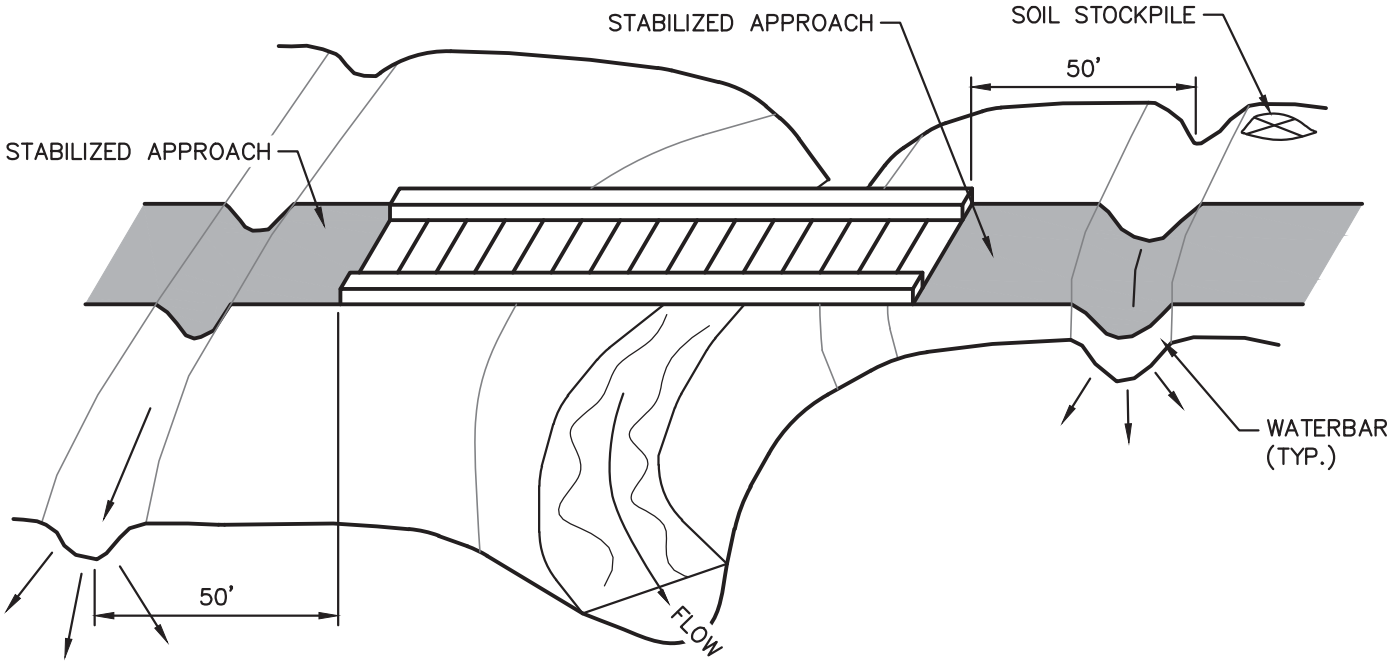
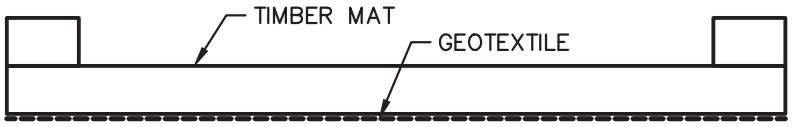
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP–5/GP–8 FOR S–BB3
PROFILE
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	212IC–PB–00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 4

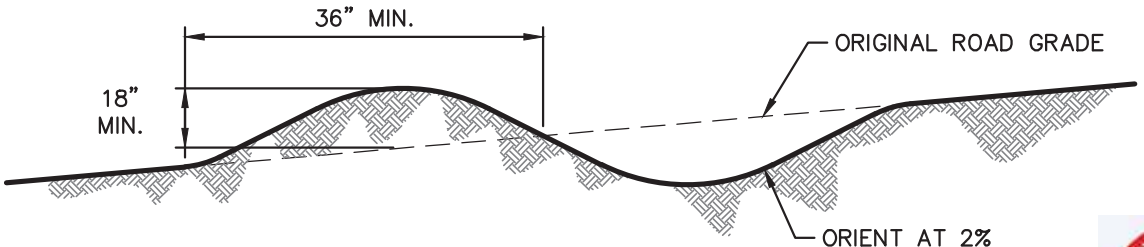
FIGURE 3



TEMPORARY STREAM CROSSING
NOT TO SCALE



TYPICAL STREAM CROSSING
NOT TO SCALE



WATERBAR DETAIL
NOT TO SCALE

NOTE:
APPROACH TO CROSSING NOT TO EXCEED A DEPTH OF 6" ABOVE ORIGINAL GRADE

TETRA TECH
WWW.TETRATECH.COM
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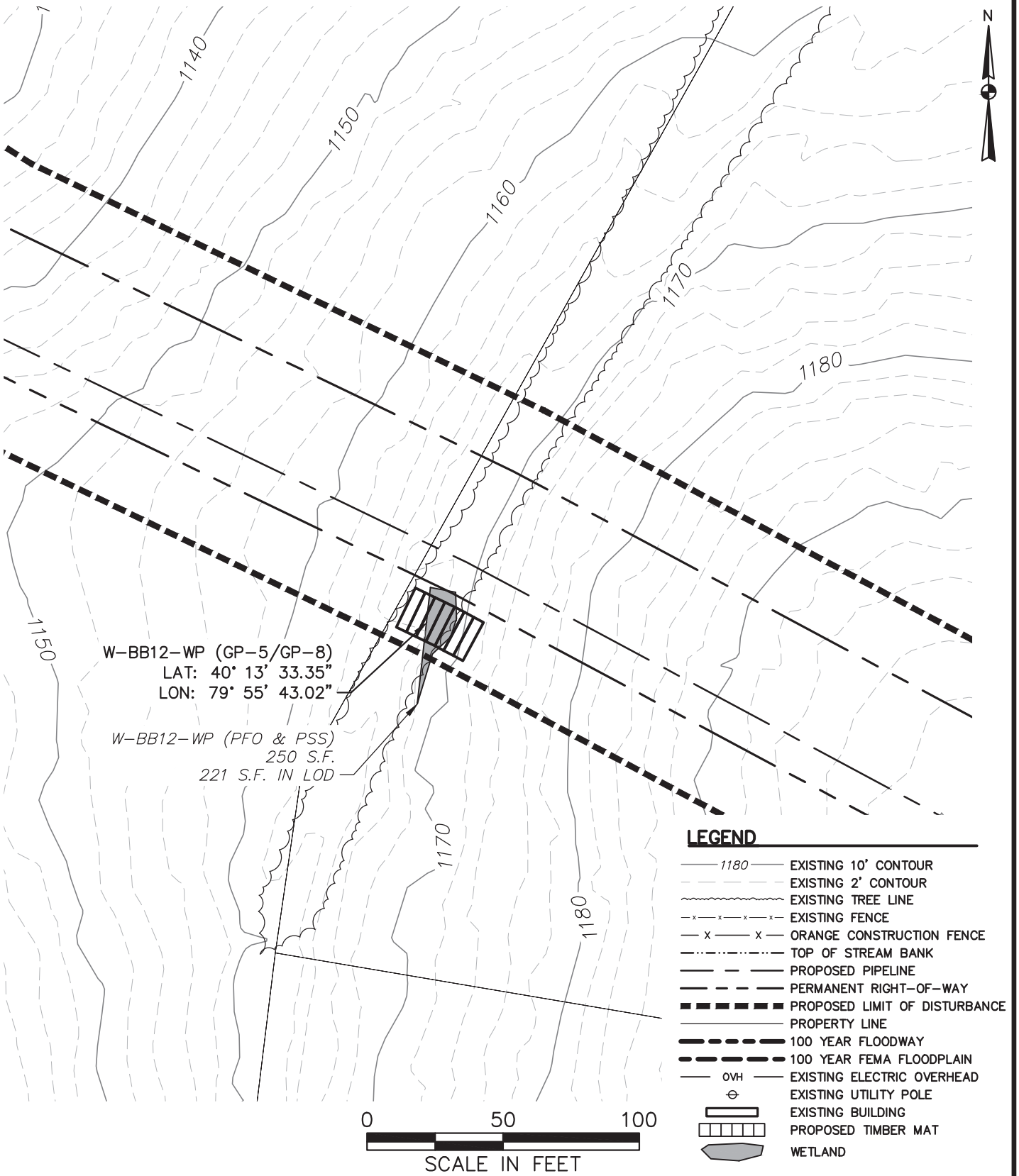
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP-8 FOR S-BB3
STREAM CROSSING
SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	4 OF 4

FIGURE 4



TETRA TECH
WWW.TETRATECH.COM
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921–7090 | F: (412) 921–4040

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP–5/GP–8 FOR W–BB12–WP
PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC–PB–00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

FIGURE 1

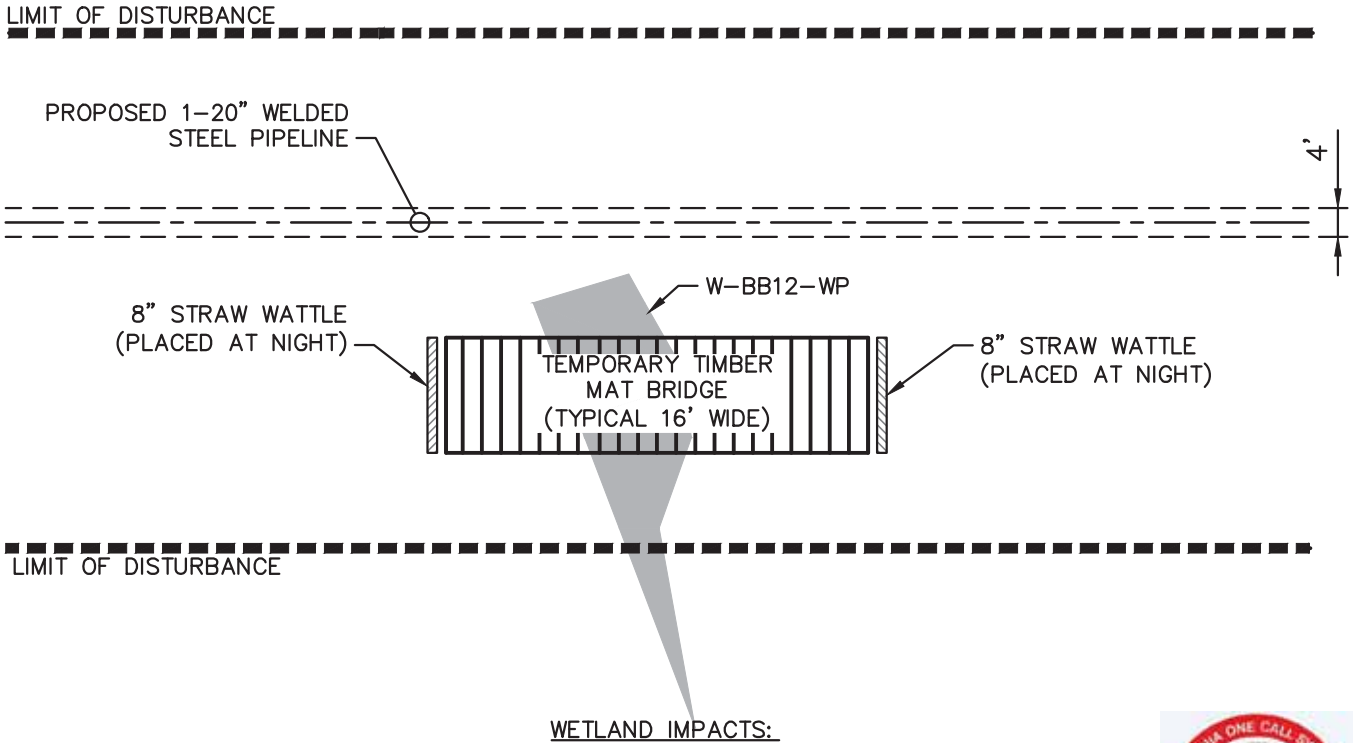
R:_212 – OGA\O&G\EQT\00176 – EEP\GPs\H318\H318 – 00176GP041.dwg PIT NICHOLE.NAJESKI 10/20/2015 12:51:04 PM

NOTES:

1. TOPO AND SITE FEATURE CREATED USING http:\\www.pasda.psu.edu.

2. TOPSOIL STOCKPILES SHALL BE LOCATED A MINIMUM OF 50' AWAY FROM THE EDGE OF THE WETLAND.

3. THE RIGHTS-OF-WAY AND EASEMENTS SHOWN ON THIS PLAN ARE THE RESPONSIBILITY OF EQUITRANS, LP TO SECURE WITH THE INDIVIDUAL PROPERTY OWNER. THE RIGHTS-OF-WAYS AND EASEMENTS SHOWN ON THIS PERMIT DRAWING REPRESENT THE BEST AVAILABLE PROPERTY INFORMATION AS PROVIDED TO TETRA TECH NUS, INC. BY EQUITRANS, LP. THE RIGHTS-OF-WAYS AND EASEMENTS SHALL BE VERIFIED AND LOCATED IN THE FIELD BY EQUITRANS, LP.



WETLAND IMPACTS:
TOTAL AREA: 221 S.F.

PLAN
NOT TO SCALE

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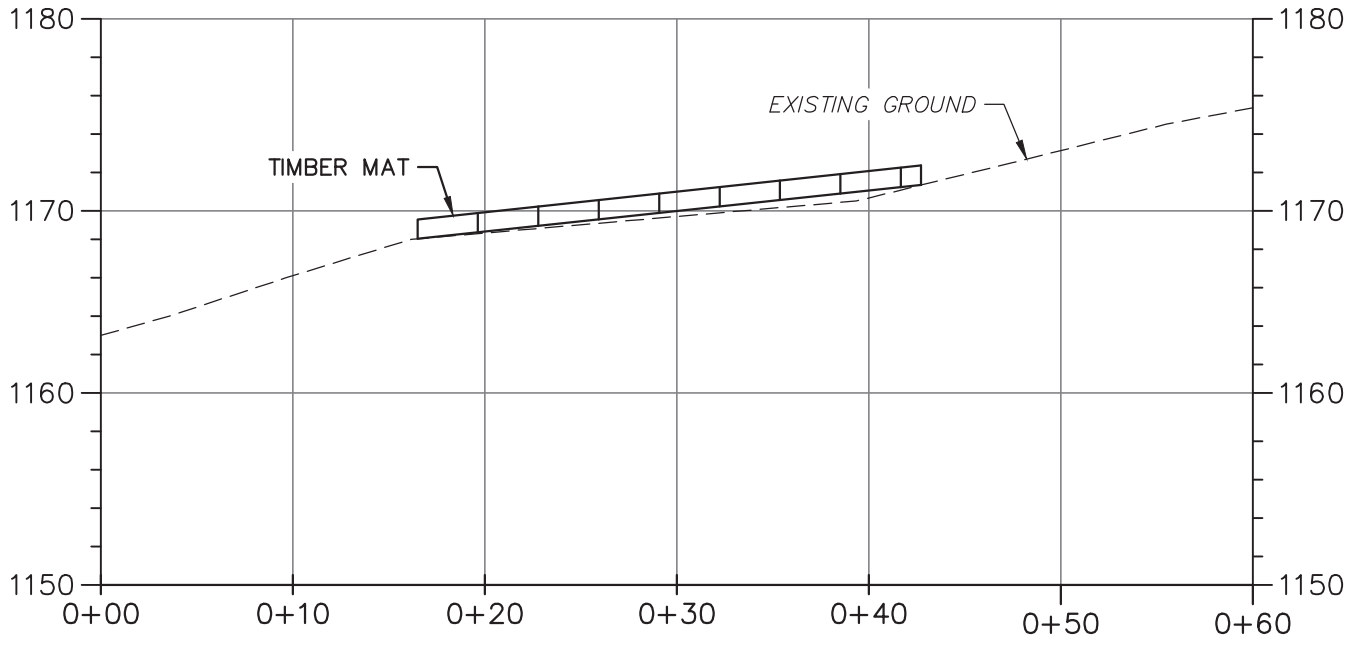
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE - ALLEGHNEY COUNTY
GP-5/GP-8 FOR W-BB12-WP
PLAN
SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 4

FIGURE 2



PROFILE FOR W-BB12-WP OPEN-CUT TRENCH PROFILE

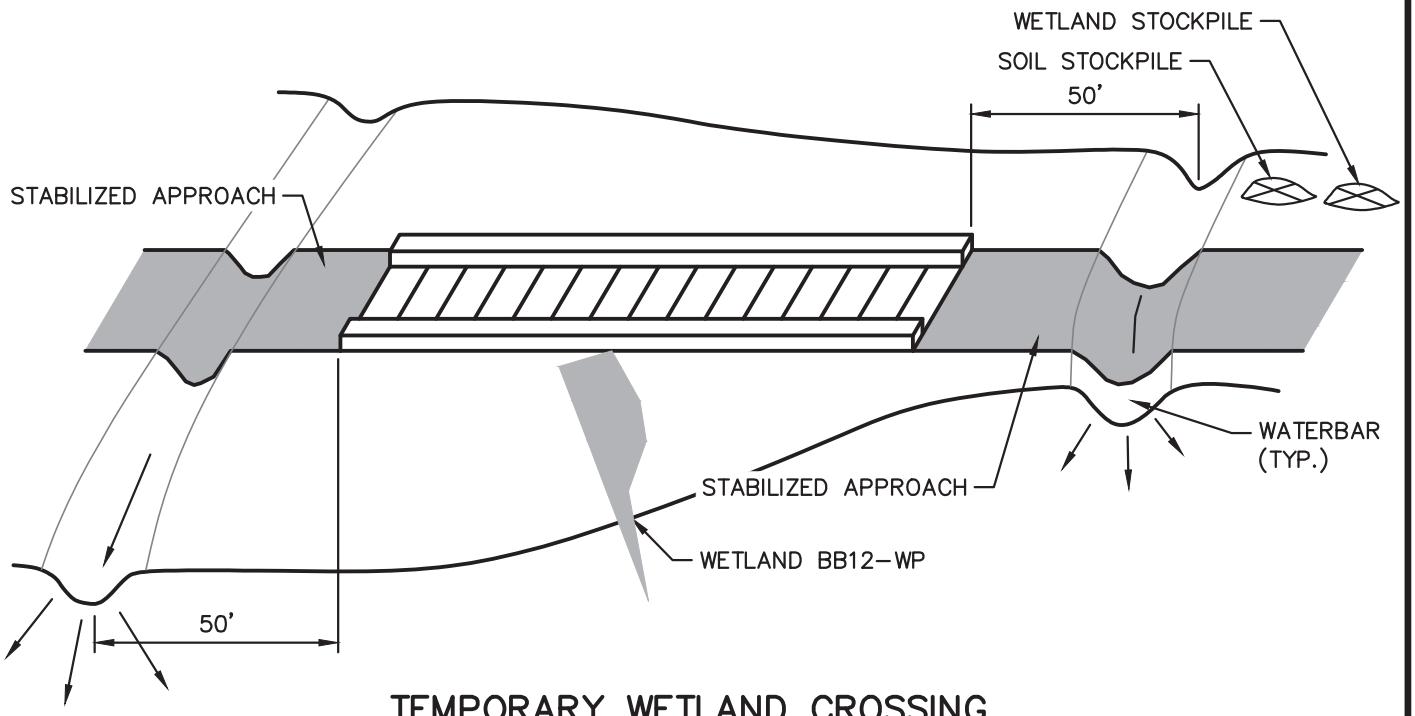
SCALE: HORIZ: 1" = 10'
VERT: 1" = 10'

TETRA TECH
WWW.TETRATECH.COM
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

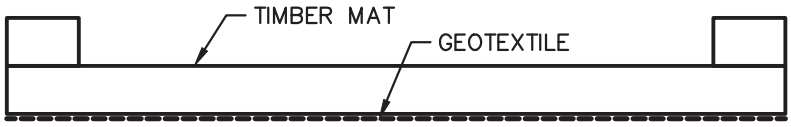
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP-5/GP-8 FOR W-BB12-WP
PROFILE
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 4

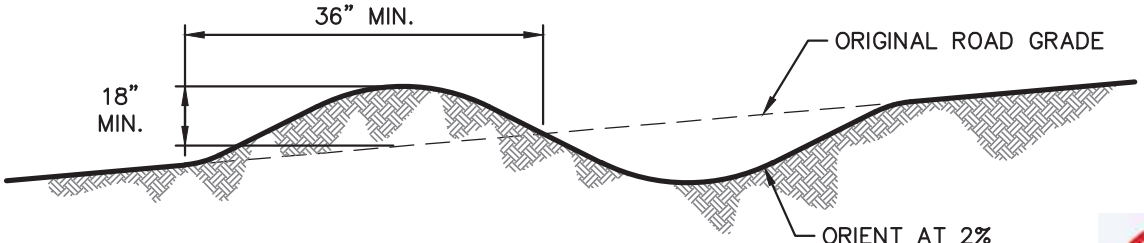
FIGURE 3



TEMPORARY WETLAND CROSSING
NOT TO SCALE



TYPICAL WETLAND CROSSING
NOT TO SCALE



WATERBAR DETAIL
NOT TO SCALE

NOTE:
APPROACH TO CROSSING NOT TO EXCEED A DEPTH OF 6" ABOVE ORIGINAL GRADE

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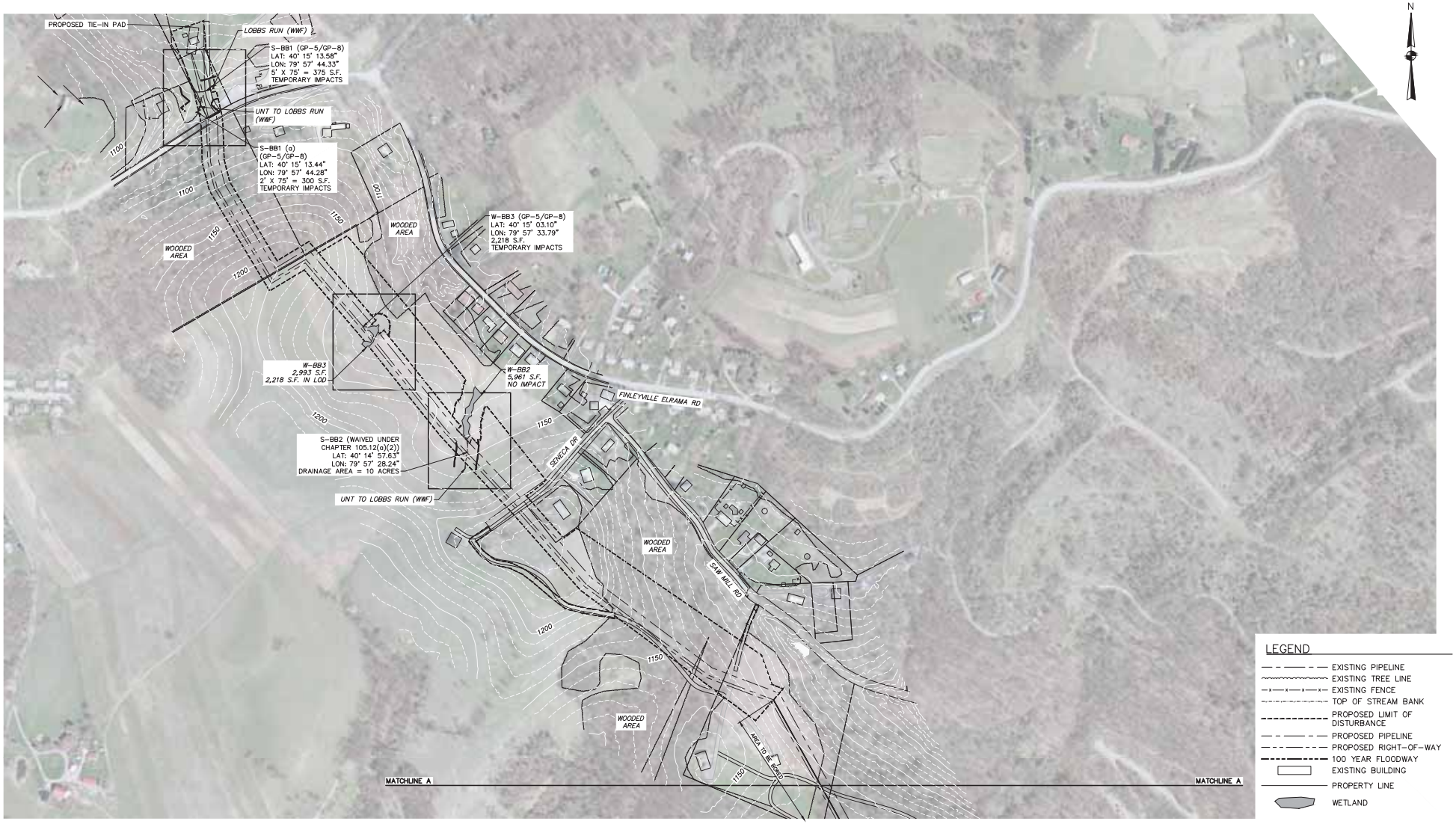
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP-8 FOR W-BB12-WP
WETLAND CROSSING
SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	4 OF 4

FIGURE 4

SECTION 10.0

SITE PLAN



TETRA TECH
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661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

REVISIONS

NO.	BY	DATE	REMARKS

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT

H318 PIPELINE – WASHINGTON/ALLEGHENY COUNTY

1–20" PROPOSED WELDED STEEL NATURAL GAS PIPELINE

SITE PLAN

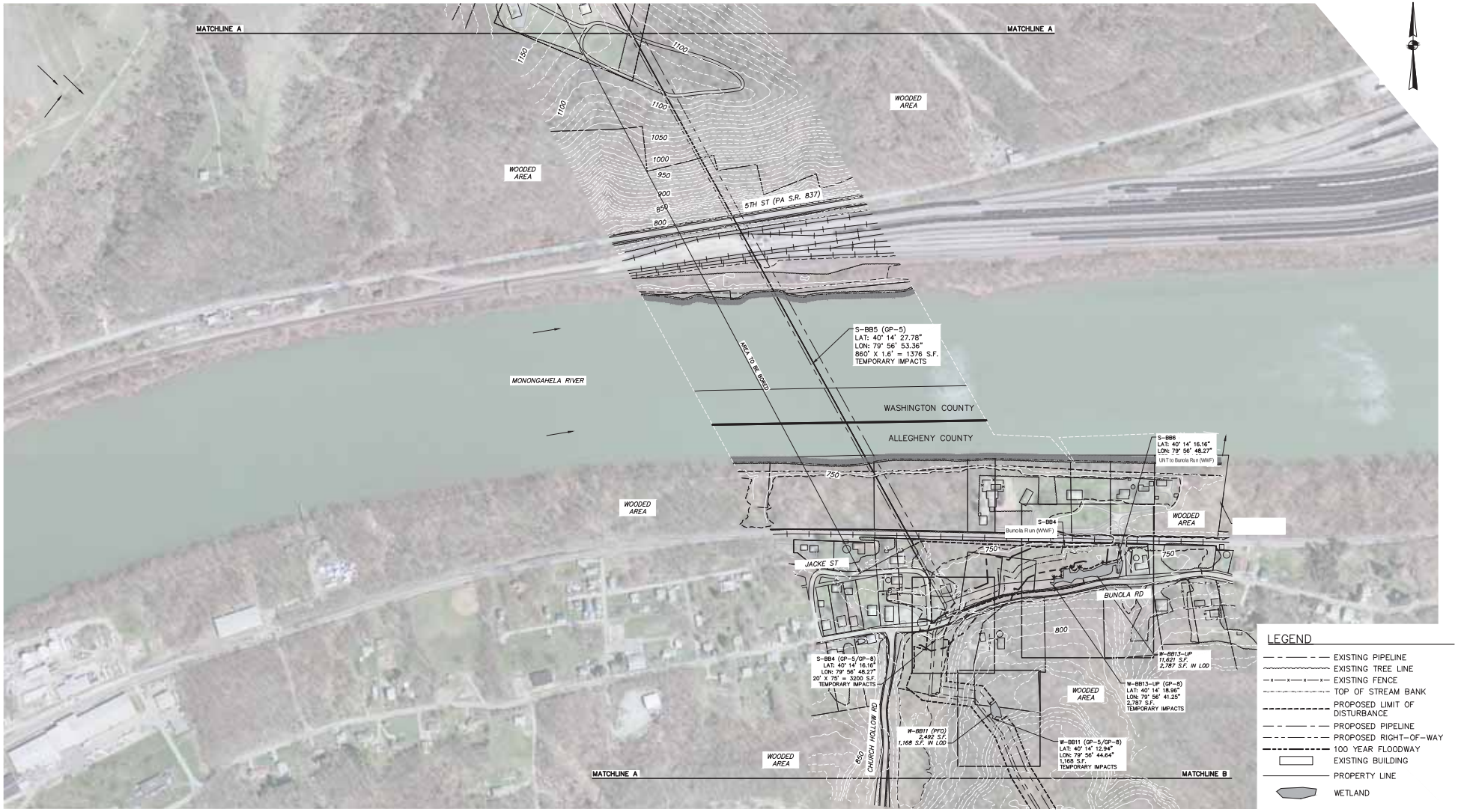
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	PB-00179
DESIGNED BY:	DZ
DRAWN BY:	DZ
CHECKED BY:	HT

FIGURE 1

SHEET 1 OF 4

R:_212 – OGA\O&G\EQT\00176 – EEP\Figures\00176F0004.dwg PIT DAN.ZINDREN 10/23/2015 4:17:15 PM



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PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

REVISIONS

NO.	BY	DATE	REMARKS

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT

H318 PIPELINE – WASHINGTON/ALLEGHENY COUNTY

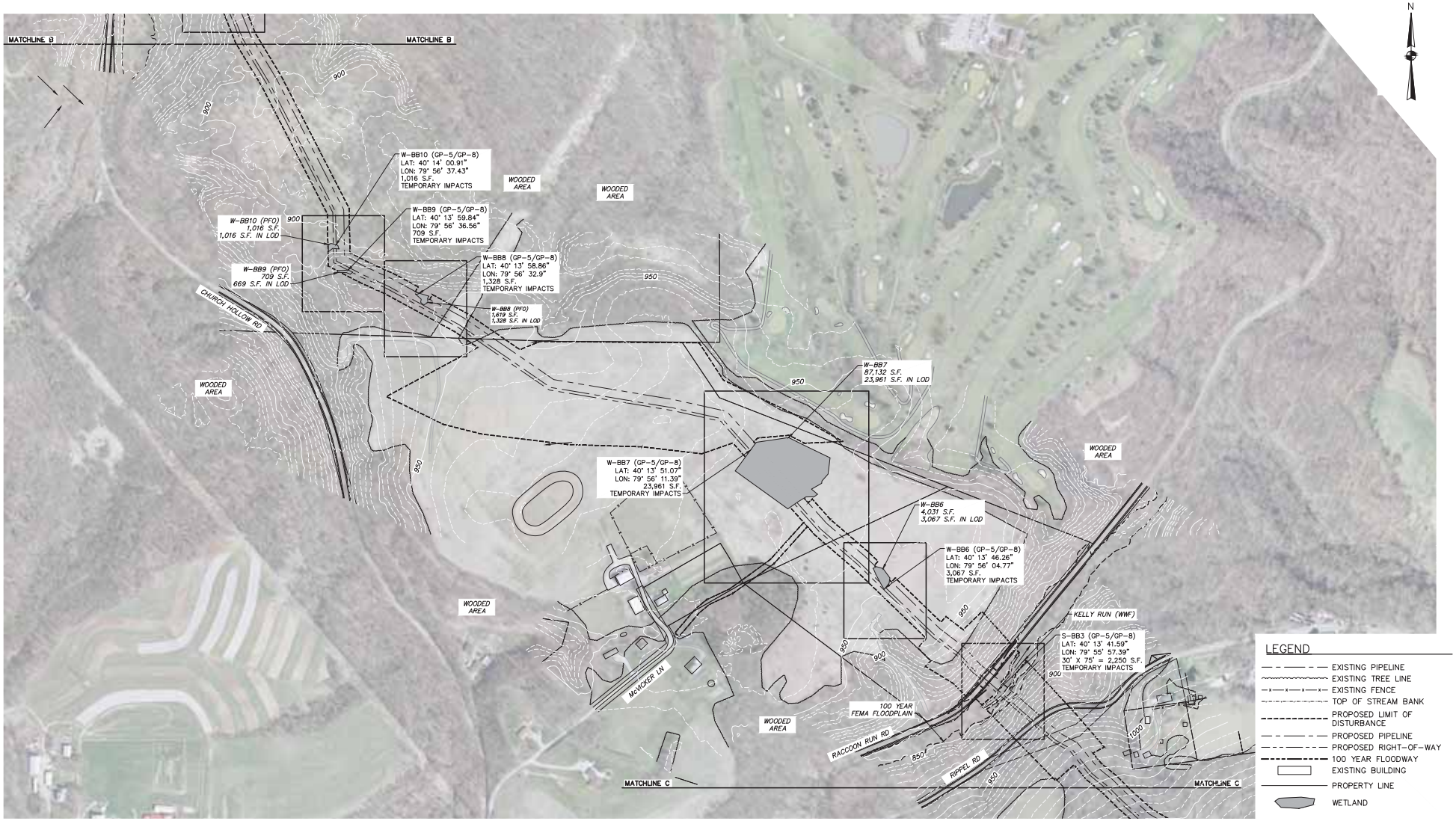
1–20" PROPOSED WELDED STEEL NATURAL GAS PIPELINE

SITE PLAN
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	PB-00179
DESIGNED BY:	DZ
DRAWN BY:	DZ
CHECKED BY:	HT

FIGURE 2
SHEET 2 OF 4

R:_212 – OGA\O&G\EQT\00176 – EEP\Figures\00176F0005.dwg PIT DAN.ZINDREN 10/23/2015 3:51:27 PM



TETRA TECH
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REVISIONS

NO.	BY	DATE	REMARKS

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT

H318 PIPELINE – WASHINGTON/ALLEGHENY COUNTY

1–20" PROPOSED WELDED STEEL NATURAL GAS PIPELINE

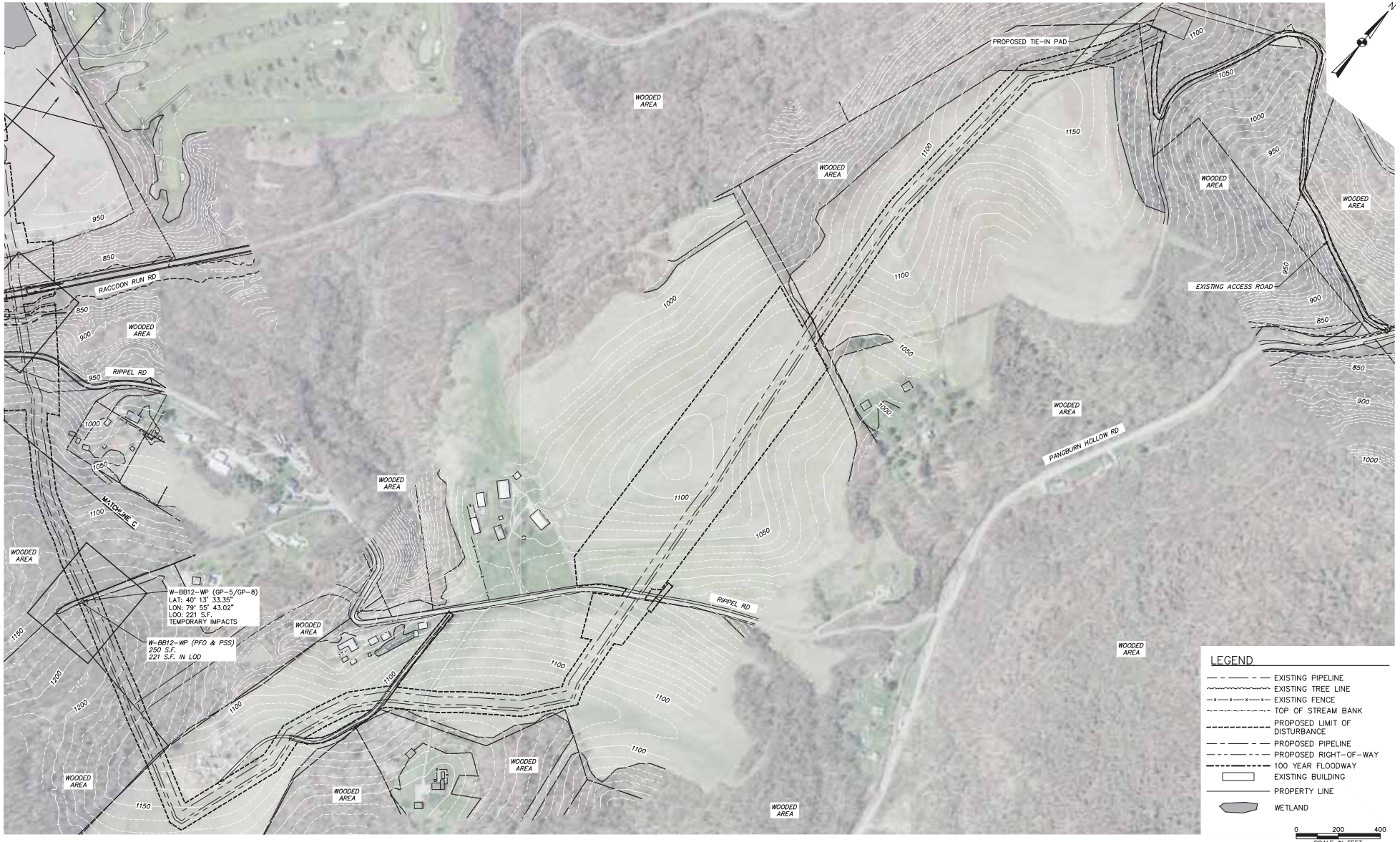
SITE PLAN

SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	PB-00179
DESIGNED BY:	DZ
DRAWN BY:	DZ
CHECKED BY:	HT

FIGURE 2
SHEET 2 OF 4

R:_212 – OGA\O&G\EQT\00176 – EQP\Figures\00176FG006.dwg PIT DAN.ZINDREN 10/23/2015 3:51:31 PM



TETRA TECH
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PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

REVISIONS

NO.	BY	DATE	REMARKS

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT

H318 PIPELINE – WASHINGTON/ALLEGHENY COUNTY

1–20" PROPOSED WELDED STEEL NATURAL GAS PIPELINE

SITE PLAN
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	PB-00179
DESIGNED BY:	DZ
DRAWN BY:	DZ
CHECKED BY:	HT

FIGURE 3
SHEET 3 OF 4

R:_212 – OGA\O&G\EQT\00176 – EEP\Figures\0017MF0007.dwg PIT DAN.ZINDREN 10/23/2015 3:51:36 PM

SECTION 11.0

EROSION AND SEDIMENT CONTROL PLAN

SECTION 11.0 – E&S Plan

Refer to Section 9.0 for site-specific drawings and Best Management Practices. The limits of disturbance shown is the proposed limits of disturbance for the ESCGP-2 which will be submitted at a later date.

SECTION 12.0

WRITTEN DIRECTIONS TO THE PROJECT SITE

SECTION 12.0 - WRITTEN DIRECTIONS TO THE PROJECT SITE

1. From the PA DEP Southwest Regional Office, merge onto PA-28 South.
2. Take the Interstate 579S/376E exit.
3. Continue onto I-579 S.
4. Merge onto Crosstown Blvd.
5. Continue onto Liberty Bridge and continue onto W Liberty Ave.
6. Exit onto PA-51 S to Uniontown and continue onto PA-51 S/Clariton Blvd.
7. Keep right to continue to Market St.
8. Turn left onto 2nd Ave.
9. Turn left onto Center Ave, Center Ave turns slightly right and becomes Bunola River Rd
10. Turn left onto Pangburn Hollow Rd.
11. The start of the project, Applegate Gathering System, will be on the right. Project center coordinates: 40° 14' 27" N, 79° 55' 16" W.

SECTION 13.0

PENNSYLVANIA NATURAL DIVERSITY INVENTORY RECEIPT

ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.

4525 Este Avenue
Cincinnati, OH 45232
Phone: (513) 451-1777; Fax: (513) 451-3321

Pesi 639

24 June 2015

Dept. of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market St., PO Box 8552
Harrisburg, PA 17105

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning & Habitat Protection
2001 Elmerton Avenue
Harrisburg, PA 17110-9797

PA Fish and Boat Commission
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823

US Fish and Wildlife Service
Pennsylvania Field Office
110 Radnor Rd; Suite 101
State College, PA 16801

RE: Large Project PNDI – Equitrans Expansion Project

Dear Reviewer:

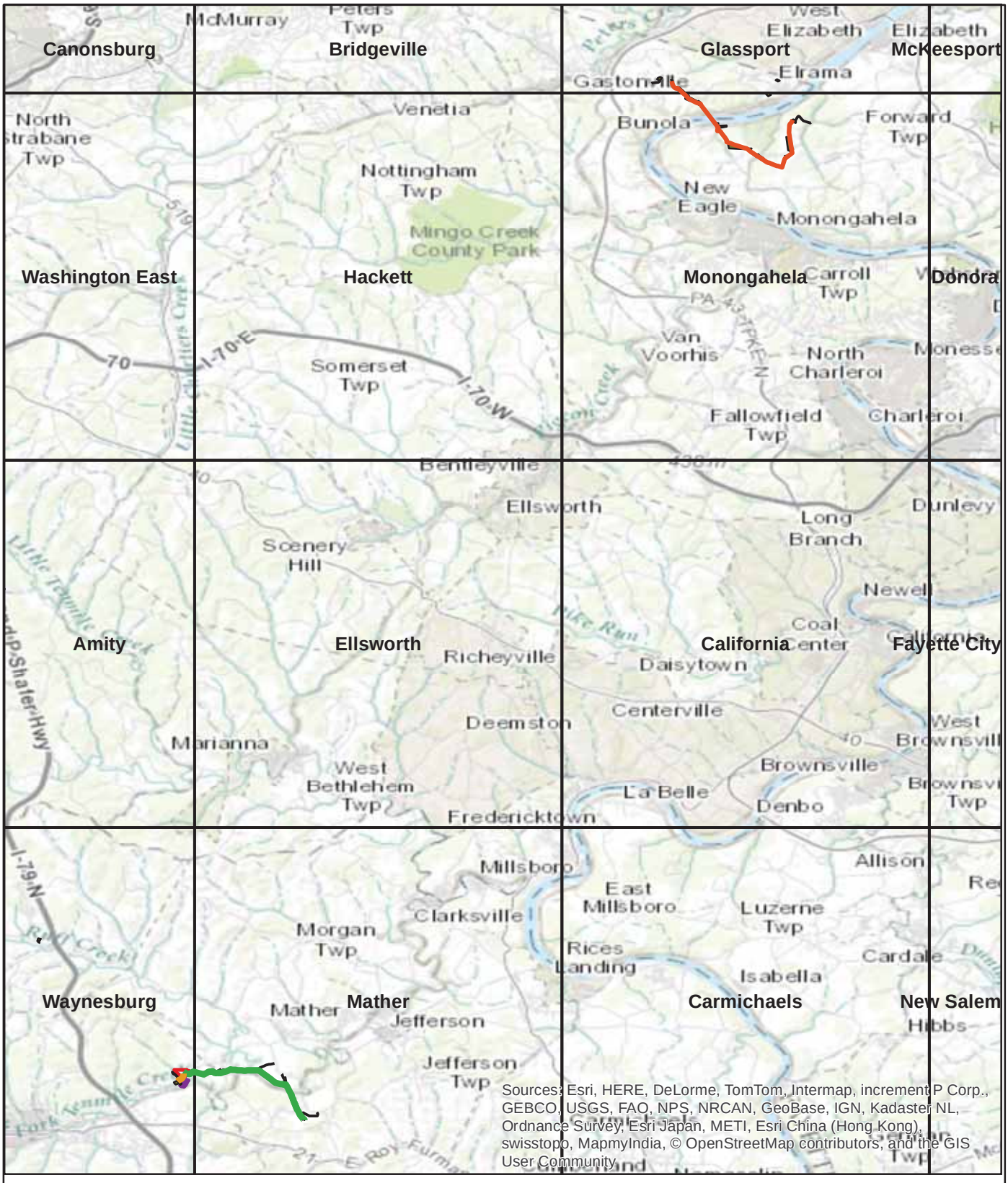
EQT proposes to develop the Equitrans Expansion Project (Project) in Allegheny, Washington, and Greene counties, Pennsylvania and Wetzel County, West Virginia. The Project will involve the construction of three individual pipeline segments totaling approximately 7.3 miles of new 24 to 30-inch-diameter natural gas transmission pipelines. In addition, EQT plans to replace an existing compressor station with a newer, larger compressor station, adding approximately 48,000 horsepower of centrifugal compression and 12,600 horsepower of reciprocating compression in Greene County, Pennsylvania. USGS 7.5 minute quadrangle maps illustrating the individual segments of this Project are included as Attachment 1. The completed PNDI Review Form is included as Attachment 2. Shapefiles of the Project are also included on the disc enclosed with this submission.

Though the Project was designed to parallel existing EQT Rights-of-Way whenever possible, review of aerial photography indicates that the current route crosses through farmland and forest of various ages. Based on desktop analysis, the Project crosses multiple streams and waterways, and thus will require permits from the U.S. Army Corps of Engineers. No surveys have been conducted for the Project, so no specific wetland data or site specific photographs are yet available. Land disturbance is estimated at approximately 213 acres. Approximately 50 acres of tree removal is expected.

Thank you for your review. I can be contacted at 513-451-1777 or dsparks@envsi.com.

Sincerely,

Dale W. Sparks, Ph.D.
Senior Project Manager



H316 | H318 | Pratt Compressor Station | Ground Bed | Temporary Work Spaces

H158-M80 | Redhook Compressor Station | Access Roads | Permanent Work Site

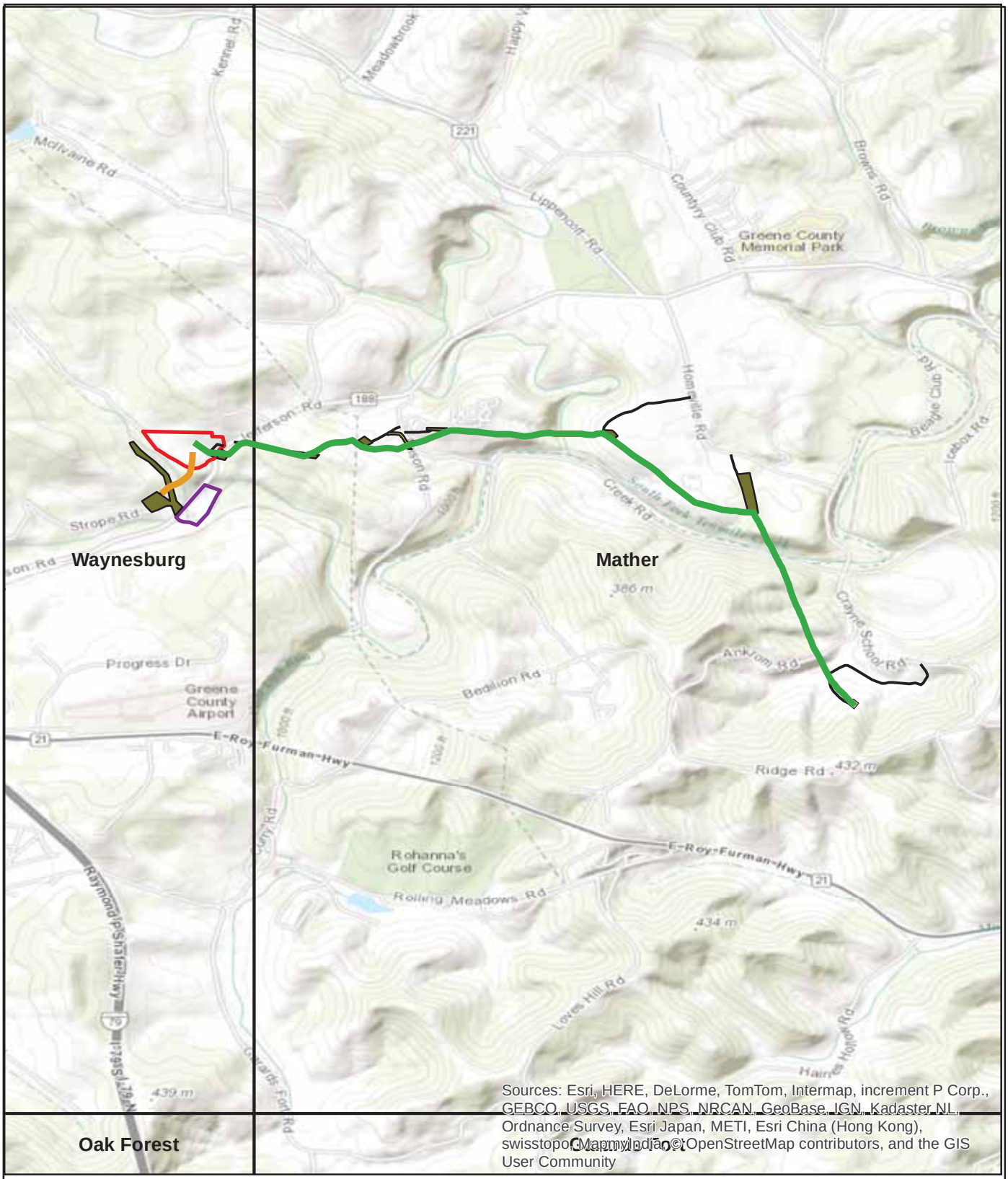
2

Figure 1. Location of Equitrans Expansion Project in Allegheny, Greene and Washington counties, Pennsylvania; USGS Quadrangles Mather, Waynesburg, Glassport and Monongahela.

Project No. 639

0 2.75 5.5 Mile

ESI ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.



H158-M80 | H316 Ground Bed | H316 Temporary Work Spaces | Pratt Compressor Station

H316 | H316 Permanent Work Site | H316 Access Roads | Redhook Compressor Station

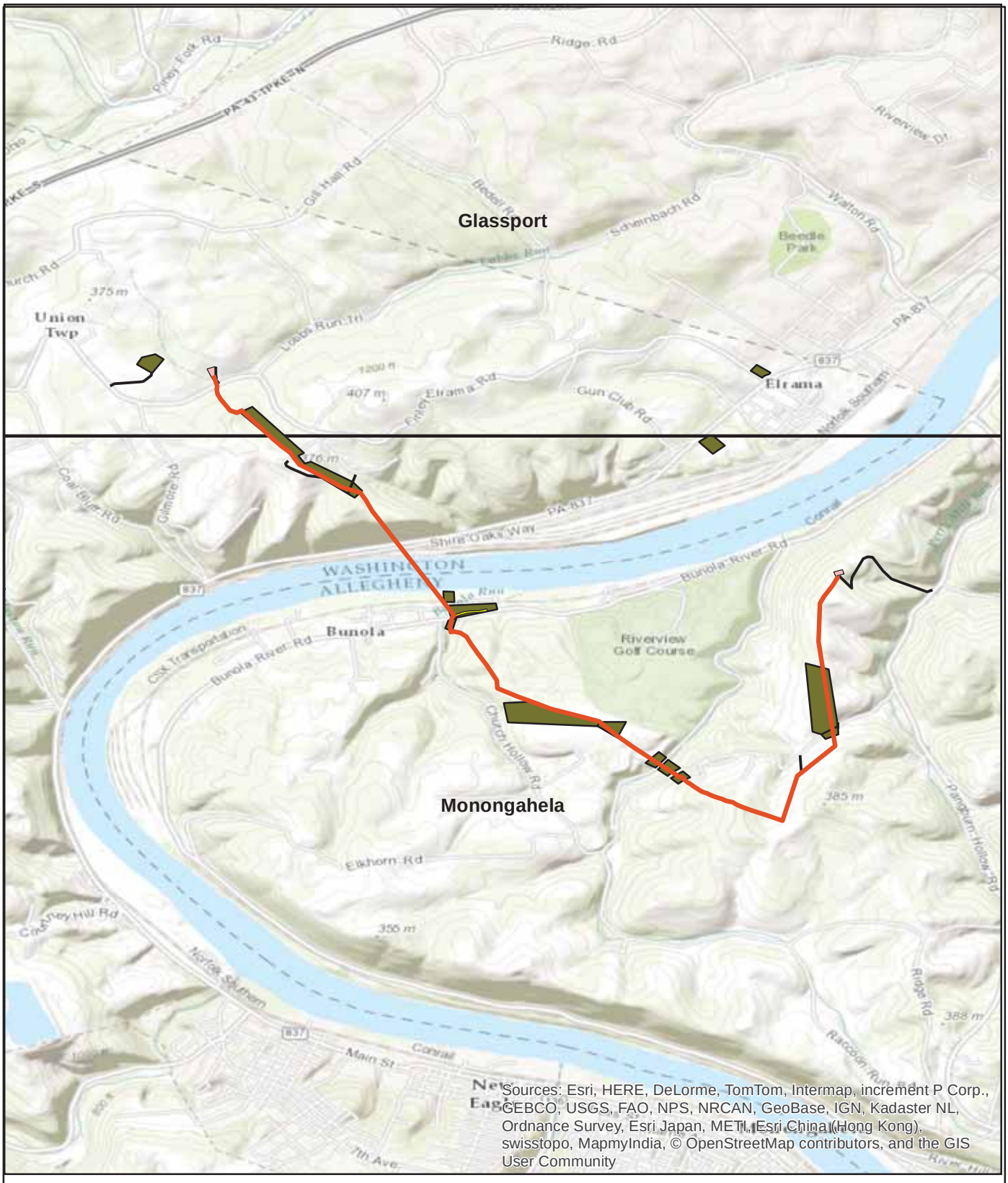
2

Figure 2. Location of Equitrans Expansion Project in Greene County, Pennsylvania; USGS Quadrangles Waynesburg and Mather.

Project No. 639

0 0.5 1 Mile

ESI ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.



H318
H318 Access Roads
H318 Ground Bed
H318 Permanent Work Site
H318 Temporary Work Spaces

2

Figure 3. Location of Equitrans Expansion Project in Allegheny and Washington counties, Pennsylvania; USGS Quadrangles Glassport and Monongahela.

Project No. 639

0 0.5 1 Mile

ESI ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.

Pennsylvania Natural Diversity Inventory
LARGE PROJECT FORM

How to Use the PNDI Large Project Form

If your Project is a "Large Project"— too large/long to search on the online system
Projects are considered "Large Projects" when the ENTIRE project is:

- Linear/Large Projects that exceed the PNDI online project size limits of 10 miles in length or 5165 acres
- Township-wide, Countywide or Statewide Projects. Examples: Act 537 Sewage Plans, Wind Farms, Roadway Improvements exceeding map limits above.

Due to system limitations and agency requirements, projects should not be submitted piecemeal. The entire project area including roads and infrastructure should be submitted as a single unit.

What to Send to Jurisdictional Agencies

Send the following information to all of the agencies listed on the Large Project Form.

Check-list of Minimum Materials to be submitted:
__X__Completed Large Project Form
__X__Supplemental project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
__X__USGS 7.5-minute Quadrangle with project boundary clearly indicated, and quad name on the map

The inclusion of the following information may expedite the review process.
__X__GIS shapefiles depicting the project extent
__X__A basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
____Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
____Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams

PNDI Large Project Form Definitions

***Applicant*:** Person that owns the property or is proposing the project or activity

Contact Person: Person to receive response if different than applicant (e.g. Consultant)

Project Name: Descriptive title of project (e.g. Twin Pines Subdivision, Miller Bridge Replacement)

***Proposed Activity*:** Include ALL earth disturbance activities for project (e.g. for a timber sale—include stream crossings, cutting areas and new roadway accesses). Also include Current Conditions (e.g. housing, farmland, current land cover), and how Construction/Maintenance Activity is to be accomplished

Total Acres of Property: Entire site acreage (e.g. timber sale property—including road access (200 acres)

Acreage to be Impacted: Disturbance acreage (e.g. timber sale—if the property is 200 acres, but only 100 acres will be disturbed, for example: cutting on 90 acres, a road impacting 10 acres); include all temporary and permanent activities

Pennsylvania Natural Diversity Inventory

LARGE PROJECT FORM

This form provides site information necessary to perform an Environmental Review for special concern species and resources listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, the Pennsylvania Fish and Boat Code or the Pennsylvania Game and Wildlife Code.

Applicant Information

Name: Stephanie Frazier - Eqt
Address: 625 Liberty Avenue, Suite 1700, Pittsburgh, Pa 15222
Phone Number: (412) 553-5798 Fax Number: (412) 395-2156

Contact Person Information - if different from applicant

Name: Environmental Solutions & Innovations, Inc.
Address: 4525 Este Ave., Cincinnati, Oh 45232
Phone Number: (513) 451-1777 Fax Number: (513) 451-3321
Email: dsparks@envsi.

Project Information

Project Name: Equitrans Expansion Project
Project Reference Point (center point of project): Latitude: 39 55 5.9 N Longitude: 80 7 12.6 W Datum:
Municipality: Franklin, Jefferson, Morgan, Forward, Union County: Allegheny, Washington, Greene
40 14 23.4 N 79 56 22.4 w
☐ Attach a copy of a U.S.G.S. 7 ½ Minute Quadrangle Map with Project Boundaries clearly marked.
U.S.G.S. Quad Name: Mather, Waynesburg, Glassport, Monongahela
Provide GIS shapefiles showing the project boundary (strongly recommended)

Project Description

Proposed Project Activity (including ALL earth disturbance areas and current conditions)

EQT proposes to develop the Equitrans Expansion Project (Project) in Allegheny, Washington, and Greene counties, Pennsylvania and Whetzel County, West Virginia. The Project will involve the construction of three individual pipeline segments totaling approximately 7.3 miles of new 24 to 30-inch-diameter natural gas transmission pipelines. In addition, EQT plans to replace an existing compressor station with a newer, larger compressor station, adding approximately 48,000 horsepower of centrifugal compression and 12,600 horsepower of reciprocating compression in Greene County, Pennsylvania.

Total Acres of Property: Approx 213 Acreage to be Impacted: Approx 213

1. Will the entire project occur in or on an existing building, parking lot, driveway, road, maintained road shoulder, street, runway, paved area, railroad bed, or maintained lawn? Yes ☐ No ☒
2. Are there any waterways or waterbodies (intermittent or perennial rivers, streams, creeks, tributaries, lakes or ponds) in or near the project area, or on the land parcel? If so, how many feet away is the project?
   Yes ☒ 0 Feet No ☐
3. Are wetlands located in or within 300 feet of the project area? Yes ☒ No ☐ If No, is this the result of a wetland delineation?
4. How many acres of tree removal, tree cutting or forest clearing will be necessary to implement all aspects of this project? Approx. 50 Acres

Dept. of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market St., PO Box 8552
Harrisburg, PA 17105
fax: 717-772-0271

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning & Habitat Protection
2001 Elmerton Avenue
Harrisburg, PA 17110-9797

PA Fish and Boat Commission
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823

US Fish and Wildlife Service
Pennsylvania Field Office
110 Radnor Rd; Suite 101
State College, PA 16801
no faxes please

Pennsylvania Fish & Boat Commission

established 1866

Division of Environmental Services
Natural Gas Section
450 Robinson Lane
Bellefonte, PA 16823

May 19, 2015

IN REPLY REFER TO
SIR# 44257

Equitrans
Stephanie Frazier
625 Liberty Avenue
Pittsburgh, Pennsylvania 15222

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
PNDI Search No.
Equitrans Expansion Project.
GREENE County: - WASHINGTON County:

Dear Stephanie Frazier:

This responds to your inquiry about a Pennsylvania Natural Diversity Inventory (PNDI) Internet Database search "potential conflict" or a threatened and endangered species impact review. These projects are screened for potential conflicts with rare, candidate, threatened or endangered species under Pennsylvania Fish & Boat Commission jurisdiction (fish, reptiles, amphibians, aquatic invertebrates only) using the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files. These species of special concern are listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, and the Pennsylvania Fish & Boat Code (Chapter 75), or the Wildlife Code.

Freshwater Mussels

Rare or protected freshwater mussel species are known from the vicinity of the project area in South Fork Tenmile Creek, Greene County:

Round Pigtoe (*Pleurobema sintoxia*, Rare)
Three-ridge (*Amblema plicata*, Rare)
Wabash Pigtoe (*Fusconaia flava*, Rare)

Freshwater mussels are the most imperiled taxonomic group in North America. Nearly 20% of the species historically known to occur in the Commonwealth are now extirpated (locally extinct). Additionally 60% of Pennsylvania's remaining species are of conservation concern. We are concerned about direct and indirect (i.e., runoff) effects that the proposed project may have on the species of concern. The freshwater mussel species known from the project area are especially vulnerable to physical (dredging, rip-rap, etc.) and chemical (pH, dissolved oxygen, temperature, heavy metals and organic

contaminants) changes to their aquatic environment. Therefore, **we recommend using directional boring** rather than open cutting for the South Fork Tenmile Creek crossing. Open cutting will most likely adversely impact the species of concern. Work should be conducted from the bank (e.g., no in-stream disturbance). Likewise, no erosion or sediment should be allowed to enter into the river (e.g., strict erosion and sedimentation control measures need to be employed).

Provided that directional boring methodology is used, in-stream work on South Fork Tenmile Creek is avoided, strict E&S control measures are maintained, and best management practices are employed, we do not foresee any significant adverse impacts from the proposed activity to the mussel species of special concern or any other rare or protected species under Pennsylvania Fish & Boat Commission jurisdiction **provided that the applicant implement the following contingencies to prevent impacts to water quality from drilling/boring operations:**

• Have a designated environmental inspector on site for the duration of the entire crossing operation

• Stop the bore/drill immediately if anyone on site observes an Inadvertent Return.

• Have a Vac Truck on site or on call (within three hours) to begin clean-up of the release in the stream channel to prevent downstream migration of drilling fluids

• Notify PFBC Bureau of Law Enforcement Regional Office within 24 hours http://fishandboat.com/dir_regions.htm (NC 814-359-5250; NE 570-477-5717; NW 814-337-0444; SW 814-445-8974)

Additionally, any release of sediment to the stream should be reason to initiate contact with the PFBC Bureau of Law Enforcement to address these issues. Any unauthorized disturbance, unpermitted discharge, or release of sediment(s) that is determined to be a pollution event (generally described http://www.fish.state.pa.us/fishpub/summary/reporting.html) per the Pennsylvania Fish and Boat Code will be subject to the appropriate legal enforcement action.

If, however, the work will necessitate any direct (e.g. equipment intrusion) or indirect impacts (e.g. runoff) to South Fork Tenmile Creek, then we request that a mussel survey and mussel relocation be conducted. The mussel survey would examine the proposed right-of-way (ROW) (direct impact area) as well as the indirect area. All live mussels encountered within the area of direct impact would be collected and relocated out of harm's way if the stream crossing is proposed to be open-cut. The mussel survey can be conducted by the PFBC or a qualified malacologist. Mussels are more readily detectible near the substrate surface during appropriate seasons (May 1 to October 15) and water temperatures (generally above 55 °F). In addition, a cursory mussel survey will require appropriate stream conditions, including normal flow and relatively clear water.

If you decide that you would like the PFBC to conduct the mussel survey, please schedule a field meeting with us so that we can complete an evaluation of mussel habitat quality as well as a mussel survey to determine presence/absence, location, and abundance of mussel species within or adjacent to the proposed project area.

Enclosed is a list of qualified malacologists and a PFBC approved mussel survey protocol if you prefer to arrange for a non-PFBC mussel survey. Prior to conducting a survey, the qualified malacologist should submit a proposed survey and relocation plan to this office. Upon completion of the mussel survey and relocation, please send a copy of the final report to this office for further evaluation. We look forward to receiving this information.

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not

necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Gary Smith at 814-279-3080 and refer to the SIR # 44257. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,

Heather A. Smiles, Chief
Natural Gas Section

HAS/GAS/dn

pennsylvania
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

BUREAU OF FORESTRY

July 22, 2015 **PNDI Number: 22453**

Dale Sparks
Environmental Solutions & Innovations, Inc.
4525 Este Avenue
Cincinnati, OH 45232
Email: dsparks@envsi.com (hard copy will not follow)

Re: Equitrans Expansion Project
Allegheny, Washington, and Greene Counties, PA

Dear Mr. Sparks,

Thank you for the submission of the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Large Project Number 22453 for review. PA Department of Conservation and Natural Resources screened this project for potential impacts to species and resources under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features only.

Potential Impact Anticipated

PNDI records indicate species or resources under DCNR's jurisdiction are located in the project vicinity. Based on a detailed PNDI review, DCNR determined potential impacts to the following threatened or endangered species or species of special concern.

Segment H318

Scientific Name	Common Name	PA Current Status	PA Proposed Status
Baptisia australis	Blue False-indigo	Not Listed	Threatened
Erythronium albidum	White Trout-lily	Not Listed	Rare
Iodanthus pinnatifidus	Purple Rocket	Endangered	Endangered
Scutellaria saxatilis	Rock Skullcap	Undetermined	Endangered
Trillium nivale	Snow Trillium	Rare	Rare

Segments H316/H158-M80

Scientific Name	Common Name	PA Current Status	PA Proposed Status
Erythronium albidum	White Trout-lily	Not Listed	Rare
Scutellaria saxatilis	Rock Skullcap	Undetermined	Endangered
Tipularia discolor	Cranefly Orchid	Rare	Rare
Trillium nivale	Snow Trillium	Rare	Rare

Survey Request
DCNR requests a survey for the following species:

- ***Baptisia australis* (Blue False-indigo):** locally documented on a rich wooded riverine slope; prefers open woods, stream banks, and sandy floodplains; flowers May – June
- ***Erythronium albidum* (White Trout-lily):** locally documented in floodplain forest and on rich wooded slopes along rivers and creeks; prefers moist woods and rich slopes, especially on limestone; flowers April – May

- ***Iodanthus pinnatifidus* (Purple Rocket):** locally documented on a rich wooded riverine slope; prefers moist alluvial woods and wooded slopes; flowers May – June
- ***Scutellaria saxatilis* (Rock Skullcap):** locally documented in sycamore scrub floodplain; prefers low woods, rocky stream banks, and roadsides; flowers July – August
- ***Tipularia discolor* (Cranefly Orchid):** locally documented in red oak mixed hardwood forest; prefers deciduous forest and stream banks; leaf visible fall, winter, and spring
- ***Trillium nivale* (Snow Trillium):** locally documented on rich stream valley wooded slopes; prefers stream valleys and wooded slopes, especially on limestone; flowers late March – April

✓ A survey for the above species should be conducted by a qualified botanist *at the appropriate time of year and then submitted to our office for review*. **Your botanist should carefully review the new DCNR Botanical Survey Protocols available at http://www.gis.dcnr.state.pa.us/hgis-er/Login.aspx. These protocols are recommended to ensure that the all necessary information is collected and that survey reports are prepared properly. It is the expectation of DCNR that these protocols will be followed when conducting surveys for species under our jurisdiction.**

✓ Your botanist should *fill out the field survey form while performing their survey:* http://www.gis.dcnr.state.pa.us/hgis-er/hgis/2012%20DCNR%20Field%20Survey%20Form.pdf. Contact our office prior to the survey for detailed information about the species, or for a list of qualified surveyors.

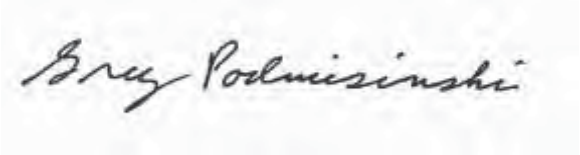
✓ Any target and non-target state-listed species found during the site visit should be reported to our office. Mitigation measures and monitoring may be requested if species or communities of special concern are found on or adjacent to site.

✓ If the land type(s) does not exist on site, a survey may not be necessary; please submit a habitat assessment report which describes the current land cover, habitat types, and species found on site.

This response represents the most up-to-date review of the PNDI data files and is valid for two (2) years only. If project plans change or more information on listed or proposed species becomes available, our determination may be reconsidered. Should the proposed work continue beyond the period covered by this letter, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative and accurate map). As a reminder, this finding applies to potential impacts under DCNR's jurisdiction only. Visit the PNHP website for directions on contacting the Commonwealth's other resource agencies for environmental review.

Should you have any questions or concerns, please contact Jason Ryndock, Ecological Information Specialist, by phone (717-705-2822) or via email (c-jryndock@pa.gov).

Sincerely



Greg Podniesinski, Section Chief
Natural Heritage Section

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
110 Radnor Road, Suite 101
State College, Pennsylvania 16801-4850

July 27, 2015

Stephanie Frazier
Equitrans, L.P.
625 Liberty Avenue
Suite 1700
Pittsburgh, PA 15222

RE: USFWS Project #2015-0578

Dear Ms. Frazier:

Thank you for your letter of April 27, 2015, regarding information about federally listed and proposed endangered and threatened species within the area affected by Equitrans, L.P., proposed Equitrans Expansion project located in Allegheny, Washington, and Greene counties, Pennsylvania, and Wetzel County, West Virginia. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of endangered and threatened species and the Migratory Bird Treaty Act (MBTA, 16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755, as amended) to ensure the protection of migratory bird species.

The proposed project consists of the replacement and expansion of compressor stations, installation of pipelines, and a new interconnect to deliver natural gas volumes into Mountain Valley Pipeline, LLC's proposed pipeline in West Virginia.

Federally Listed Species

The proposed project is located within the range of the Indiana bat (*Myotis sodalis*), a species that is federally listed as endangered and within the range of the federally threatened northern long-eared bat (*Myotis septentrionalis*). On May 4, 2015, the northern long-eared bat listing became effective; more information on the new listing of this species can be found at: http://www.fws.gov/midwest/endangered/mammals/nlba/index.html

Land-clearing associated with the project may result in the death or injury of roosting Indiana bats if tree-cutting is conducted during the time of year when bats may be present (*i.e.*, April 1 to September 30). Due to the potential for these bat species to occur within the project area, the Service recommends that measures be implemented to avoid killing or injuring them. This can be accomplished by carrying out tree-cutting activities from October 1 to March 31, during which time bats are hibernating or concentrated near their hibernacula. This seasonal restriction on tree cutting applies to trees that are greater than or equal to 3 inches in diameter at breast

height (d.b.h). Where possible, retain shagbark hickory trees, dead and dying trees, and large diameter trees (greater than 12 inches d.b.h.) to serve as roost trees for bats. Where possible, also retain forested riparian corridors and forested wetlands.

If you are unable to adopt the tree-cutting restrictions detailed above, a bat survey of the project area should be conducted between May 15 and August 15 by a qualified, Service-approved biologist (see enclosed list) using the 2015 RANGE-WIDE INDIANA BAT SUMMER SURVEY GUIDELINES April 2015, which can be found at the following link: http://www.fws.gov/northeast/pafo/surveys.html.
Survey results should be submitted to the Service for review and concurrence.

Please advise this office as to whether you intend to conduct bat surveys, or assume bats are present and implement a seasonal restriction on tree-cutting.

Assessment of Risks to Migratory Birds

The Service is the principal Federal agency charged with protecting and enhancing populations and habitat of migratory bird species. The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. While the MBTA has no provision for authorizing incidental take, the Service recognizes that some birds may be killed even if all reasonable measures to avoid take are implemented.

The potential exists for avian mortality from habitat destruction and alteration within the project boundaries. Site-specific factors that should be considered in project siting to avoid and minimize the risk to birds include avian abundance; the quality, quantity and type of habitat; geographic location; type and extent of bird use (*e.g.* breeding, foraging, migrating, etc.); and landscape features. Please review the enclosed information for general recommendations for avoiding and minimizing impacts to migratory birds within and around the project area. Please be aware that since these are general guidelines, some of them may not be applicable to the current project design or they may have already been included in the project design.

To avoid potential delays in reviewing your project, please use the above-referenced USFWS project tracking number in any future correspondence regarding this project.

If you have any questions regarding this matter, please contact Pamela Shellenberger of my staff at 814-234-4090.

Sincerely,

Lora L. Zimmerman
Field Office Supervisor

Enclosures
cc: USFWS – West Virginia Field Office

Division of Environmental
Planning and Habitat
Protection
717-783-5957

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission
2001 ELMERTON AVENUE
HARRISBURG, PA 17110-9797

"To manage all wild birds, mammals and their habitats for current and future generations."

ADMINISTRATIVE BUREAUS:

ADMINISTRATION.....717-787-5670
HUMAN RESOURCES.....717-787-7836
FISCAL MANAGEMENT.....717-787-7314
CONTRACTS AND PROCUREMENT.....717-787-6594
LICENSING.....717-787-2084
OFFICE SERVICES.....717-787-2116
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WILDLIFE PROTECTION.....717-783-6526
WILDLIFE HABITAT MANAGEMENT.....717-787-6818
REAL ESTATE DIVISION.....717-787-6568
AUTOMATED TECHNOLOGY SERVICES.....717-787-4076

www.pgc.state.pa.us

June 30, 2015 **PGC ID Number: 201505050202 Update**

Dale Sparks
Environmental Solutions & Innocations, Inc.
4525 Este Ave.
Cincinnati, OH 45232
dsparks@envsi.com

Re: EQT – Equitrans Expansion Project (*Update*)
Large Project PNDI Review
Greene, Allegheny & Washington Counties, PA

Dear Mr. Sparks,

Thank you for submitting your Pennsylvania Natural Diversity Inventory (PNDI) Large Project Environmental Review request. The Pennsylvania Game Commission (PGC) screened this project for potential impacts to species and resources of concern under PGC responsibility, which includes birds and mammals only.

No Impact Anticipated – PNDI Species

PNDI records indicate species or resources of concern are located in the vicinity of the project. However, based on the information you submitted concerning the nature of the project, the immediate location, and our detailed resource information, the PGC has determined that no impact is likely. Therefore, no further PNDI coordination with the PGC will be necessary for this project at this time.

This response represents the most up-to-date summary of the PNDI data files and is valid for two (2) years from the date of this letter. An absence of recorded information does not necessarily imply actual conditions on site. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered

Should the proposed work continue beyond the period covered by this letter, please resubmit the project to the PGC at the following address as an "Update" (including an updated PNDI receipt, project narrative and accurate map):

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning & Habitat Protection

2001 Elmerton Avenue
Harrisburg, PA 17110-9797

If the proposed work has not changed and no additional information concerning listed species is found, the project will be cleared for PNDI requirements by the PGC for an additional 2 years.

This finding applies to impacts to birds and mammals only. To complete your review of state and federally-listed threatened and endangered species and species of special concern, please be sure that the U.S. Fish and Wildlife Service, the PA Department of Conservation and Natural Resources, and/or the PA Fish and Boat Commission have been contacted regarding this project as directed by the online PNDI ER Tool found at www.naturalheritage.state.pa.us.

Please be sure to include the above-referenced PGC ID Number on any future correspondence with the PGC regarding this project.

Sincerely,

John Taucher
Division of Environmental Planning & Habitat Protection
Bureau of Wildlife Habitat Management
Phone: 717-787-4250, Extension 3632
Fax: 717-787-6957
E-mail:jotaucher@pa.gov

A PNHP Partner

JWT/jwt

cc: H:\OIL&GAS_PNDI_Reviews\Southwest Region

SECTION 14.0

REGISTRATION FOR A BOG TURTLE HABITAT SCREENING FORM

SECTION 14.0 - REGISTRATION FOR A BOG TURTLE HABITAT SCREENING FORM

No Bog Turtle Habitat Screening Form is required since the Project activities occur within Washington County.

SECTION 15.0

ACTIVITIES WHICH IMPACT WETLANDS

ATTACHMENT 15.1

WETLAND DELINEATION AND STREAM IDENTIFICATION DOCUMENTATION

Aquatic Resource Report for the Equitrans Expansion Pipeline Project Allegheny, Washington, and Greene Counties, Pennsylvania, and Wetzel County, West Virginia

Prepared By:

Tetra Tech, Inc.

For

Equitrans, LP

625 Liberty Avenue Suite 1700,

Pittsburgh, Pennsylvania

October 2015

TABLE OF CONTENTS

ACRONYMS

1987 Manual	USACE of Engineers Wetland Delineation Manual
USACE Regional Supplement	Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region
EQT Gathering	EQT Gathering, LLC
Equitrans	Equitrans, L.P.
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
GIS	Geographic Information Systems
GPS	Global Positioning System
MVP	Mountain Valley Pipeline
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OBL	Obligate
PEM	Palustrine Emergent
PFO	Palustrine Forested
ROW	Right-of-way
SF	Square Feet
UNT	Unnamed Tributary
UPL	Upland
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WWF	Warm Water Fishes

1.0 INTRODUCTION

This Aquatic Resource Report for the proposed Equitrans Expansion Project was prepared by Tetra Tech, Inc. on behalf of Equitrans, L.P. (Equitrans). Areas were investigated for the presence of wetlands on site using methodologies enumerated in the *United States Army Corps of Engineers (USACE) Wetland Delineation Manual* (Environmental Laboratory, 1987) (*1987 Manual*), as amended by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region*, April 2012 (*USACE Regional Supplement*).

The subject of this report is a proposed project involving multiple proposed natural gas pipeline right-of-ways (ROW), associated access roads, above ground facilities and workspaces located in Allegheny, Greene and Washington Counties, Pennsylvania. The purpose of this proposed project is to add capacity to bring natural gas from the central Appalachian Basin into the interstate pipeline grid or existing Equitrans markets.

1.1 Washington/Allegheny Counties, PA (H-318 pipeline)

The portion of the project in Allegheny and Washington Counties (the H-318 pipeline) will include the installation of 1, 20" natural gas transmission pipeline, approximately 4.6 miles long, within a 100'-wide construction ROW and a 50'-wide permanent ROW. This portion of the project also involves the installation of permanent aboveground facilities including the Applegate and Hartson Launcher/Receiver Facilities. The H-318 pipeline will move gas from the EQT Gathering, LLC (EQT Gathering) Applegate Gathering System, in Forward Township, Allegheny County, to Equitrans' existing H-148 pipeline, in Union Township, Washington County, for delivery south.

The proposed project area in Allegheny and Washington County would require crossing the Monongahela River. The Monongahela River and its associated UNTs are listed as Warm Water Fishes (WWF), as designated in Chapter 93 of Title 25 of the PA Code. The proposed project would also require crossing Lobbs Run, Bunola Run, Kelly Run and several UNTs to each. These water features and the associated UNTs are listed as Warm Water Fishes (WWF), as designated in Chapter 93 of Title 25 of the PA Code.

1.2 Greene County, PA (H-316, M-80, H-158, H-305, and the Redhook Compressor Station)

The portion of the project in Greene County will include the installation four pipelines and new above ground facilities. The H-316 natural gas pipeline will be a 30" natural gas transmission pipeline, approximately 2.9 miles long, within a 125'-wide construction ROW and 50'-wide

permanent ROW. The H-316 pipeline will move gas from the proposed Redhook Compressor Station to Equitrans' existing H-302 pipeline for delivery to Texas Eastern infrastructure, or south on Equitrans' existing H-302 pipeline to the Mountain Valley Pipeline (MVP). The proposed project in Greene County also involves the installation of three shorter pipelines: the M-80, the H-158, and the H-305 pipelines. Each of these proposed pipelines will be located within a 100'-wide construction ROW and a 50'-wide permanent ROW. The M-80 pipeline is an existing 6" pipeline to the Pratt Compressor Station that will be extended to move gas to the Redhook Compressor Station once it is commissioned. The H-158 pipeline is an existing 12" pipeline to the Pratt Compressor Station that will be extended to move gas to the Redhook Compressor Station once it is commissioned. The H-305 pipeline is a proposed 24" pipeline extension, approximately 540' in length, that will move gas from the Redhook Compressor Station to Equitrans' existing H-305 pipeline located at the existing Braden Run Interconnect with Texas Eastern. New above ground facilities for this portion of the project include the Redhook Compressor Station and the H-302 tie-in. The pipeline projects spans Jefferson and Morgan Townships, Greene County, PA.

The project area in Greene County would require crossing South Fork Tenmile Creek and several UNTs to it. The South Fork Tenmile Creek and its associated UNTs are listed as WWF, as designated in Chapter 93 of Title 25 of the PA Code. The proposed project would also require crossing Ruff Creek and several UNTs. These water features and the associated UNTs are listed as WWF, as designated in Chapter 93 of Title 25 of the PA Code.

1.3 Weztel County, WV (Webster Interconnect, Mobley Tap, and H-319)

In Wetzel County, West Virginia, the project involves the installation of the Webster Interconnect, Mobley Tap and the H-319 pipeline, a new 16-inch pipeline, approximately 200 feet in length that will connect the existing Equitrans H-306 pipeline to the proposed Webster Interconnect with MVP.

The project area in Wetzel County, West Virginia is located within the Mobley Run and North Fork Fishing Creek watersheds. UNT to North Fork Fishing Creek will be crossed by this project.

The content of this report presents the results of wetland delineation and stream identification activities completed for the pipeline ROW, associated access roads, above ground facilities and workspaces for the proposed project.

2.0 METHODOLOGY

USACE requires the use of the procedures enumerated in the *1987 Manual* (Environmental Laboratory, 1987) and the *USACE Regional Supplement* (Environmental Laboratory, 2012) for making jurisdictional determinations. According to the *1987 Manual*, an area is defined as a wetland if, under normal circumstances, it meets all three of the following criteria:

1. Predominance of hydrophytic vegetation (plants adapted for life in saturated soil conditions);
2. Hydric soils (soils formed under water, or in saturated conditions); and
3. Wetland hydrology (presence of inundated or saturated soils at some time during the growing season).

Wetlands identified in the field were classified in accordance with the U.S. Fish and Wildlife Service's (USFWS) *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979), *A Hydrogeomorphic Classification for Wetlands (*Brinson 1993) and USACE Waters Type. Dominant vegetation was identified and classified according to The National Wetland Plant List: 2014 Update of Wetland Ratings (Lichvar, 2014). Plant classifications are as follows:

- Obligate (OBL) - essentially always found in wetlands; estimated probability >99%
- Facultative Wetland (FACW) - usually found in wetlands; estimated probability 67%-99%
- Facultative (FAC) - equally likely to occur in wetlands and non-wetlands; estimated probability 34%-66%
- Facultative Upland (FACU) - usually occurs in non-wetlands; estimated probability 1%-33%
- Upland (UPL) - essentially always found in non-wetlands; estimated probability >99%

The field investigations for the proposed Project were performed during numerous field visits: June 9th 2015, July 8th - 12th 2015, and October 8th 2015. The study area was focused on the proposed pipeline corridor, proposed access roads, and specific areas identified for proposed workspaces, ancillary sites, and compressor stations. Study areas were investigated for the presence of potential wetlands and streams. The final study area is illustrated on the project mapping (Figures).

Preliminary site reconnaissance of the study area was conducted through a review of available Geographic Information Systems (GIS) resources. Existing information reviewed included the following:

- U.S. Geological Survey (USGS) topographic mapping (Figure 1-1 to 1-4)

- Natural Resources Conservation Service (NRCS) National Cooperative Soil Survey (Figure 2-1 to 2-4)
- USFWS National Wetland Inventory (NWI) Mapping (Figure 3-1 to 3-4)

Wetland delineation in the field involved of establishment of the wetland/upland margin with flagging hung at intervals that accurately depicted the outline of the boundary. The individual flags were then located using a Global Positioning System (GPS) receiver with sub-meter accuracy and later added to the project area mapping. Wetland flagging was limited to the bounds of the investigated study area and wetlands are shown as closed or partially closed systems on the detail map (Figure 4).

All wetlands and streams identified were given unique identification names (i.e. Wetland ID, Stream ID). For streams, the National Hydrography Dataset (NHD) mapped stream names (USGS 2015) are also provided in the results. For identified streams without a NHD name, the identified stream was given the name, “Unidentified Tributary (UNT)”, of the first named receiving waterbody.

Data concerning soils, hydrology, and vegetation were collected and recorded on USACE Wetland Determination Data Forms at wetlands and at upland point locations associated with each wetland. USACE Wetland Determination Forms and stream data sheets detailing stream characteristics are provided in Appendix A. Photographs depicting wetland topography and vegetation are included in Appendix B. Appendix C contains photographs of streams identified within the study area. Appendix D provides a list of hydric soils known to occur within the counties of the study area. Resumes of Project field personnel, summarizing professional experience, qualifications, and education, are included in Appendix E.

3.0 RESULTS

Thirty-three areas within the Equitrans Expansion Project study area met the wetland criteria outlined in the *1987 Manual*, as amended by the *USACE Regional Supplement*. Additionally, 37 streams were identified within the evaluated study area. A narrative summary of field data collected within the study area for this Project is presented below. The detail maps (Figure 4-1 to 4-22) illustrate the wetland and watercourse locations in relation to the proposed ROW.

3.1 Wetland Identification and Delineation

This section is a summary of the wetland delineation for the individual projects within the Equitrans Expansion Project. USACE wetland determination data forms detailing the existing vegetation, soil characteristics, and hydrology were prepared for each wetland and its associated upland point (Appendix A).

3.1.1 Washington/Allegheny Counties (H-318 pipeline)

Based on field evidence and best professional judgment, it was determined that 13 wetlands were present within the study area. These areas demonstrated the presence of all three wetland parameters required by the *1987 Manual* and the *USACE Regional Supplement*.

A review of the NRCS Soil Survey and hydric soil list indicated that seven soils mapped within the Allegheny and Washington county study area are classified as hydric or as containing hydric components (Figure 2-1 to 2-4): Cavode silt loam, 2 to 8 percent slopes (CaB), Cavode silt loam, 8 to 15 percent slopes (CaC), Fluvaquents, loamy (Fa), Glenford silt loam 3 to 8 percent slopes (GdB), Udorthents, smoothed gently sloping (UdB), Udorthents, smoothed, moderately steep (UdD), and Urban land-Rainsboro complex, gently sloping (URB).

No NWI wetlands are mapped within the study area (Figure 3-1 to 3-4).

Wetland BB1

Wetland BB1 (W-BB1) is a palustrine emergent (PEM) wetland 867-square foot (SF) in size located in the northwestern portion of the study area (Figure 4-1). Indicators of wetland hydrology include surface water, algal mat or crust, and crayfish burrows. Dominant vegetation consisted of curly dock (*Rumex crispus*), Pennsylvania smartweed (*Polygonum pensylvanicum*), and Kentucky blue grass (*Poa pratensis*). The soil between 0-14 inches exhibited a low-chroma matrix color (2.5Y 3/2) with a clay loam texture. The soil between 14-18 inches exhibited a low-chroma matrix color (10YR 4/2) with a clay loam texture.

Wetland BB3

Wetland BB3 (W-BB3) is a PEM wetland 2,993-SF in size located in the northwestern portion of the study area (Figure 4-2). Indicators of wetland hydrology include surface water, saturation, hydrogen sulfide odor, crayfish burrows, geomorphic position, and FAC neutral test. Dominant vegetation consisted of common fox sedge (*Carex vulpinoidea*), dark-green bulrush (*Scirpus atrovirens*), short-awn meadow-foxtail grass (*Alopecurus aequalis*), and spreading bent grass (*Agrostis stolonifera*). The soil between 0-12 inches exhibited a low-chroma matrix color (7.5Y 3/2) with a clay loam texture. The soil between 12-18 inches exhibited a low-chroma matrix color (10YR 3/2) with a clay loam texture.

Wetland BB2

Wetland BB2 (W-BB2) is a PEM wetland 5,961-SF in size located in the northwestern portion of the study area (Figure 4-2). Indicators of wetland hydrology include surface water, a high water table, saturation, hydrogen sulfide odor, drainage patterns, geomorphic position, and FAC neutral test. Dominant vegetation consisted of curly dock, common fox sedge, and dark-green bulrush. The soil between 0-1 inches exhibited a low-chroma matrix color (2.5Y 3/1) with a muck texture. The soil between 1-5 inches exhibited a low-chroma matrix color (2.5Y 3/1) with a clay loam texture.

Wetland BB13

Wetland BB13 (W-BB13) is a palustrine forested (PFO) wetland 11,621-SF in size located in the central portion of the study area (Figure 4-4). Indicators of wetland hydrology include surface water, saturation, water stained leaves, aquatic fauna, crayfish burrows, and geomorphic position. Dominant vegetation consisted of ashleaf maple (*Acer negundo*), red maple (*Acer rubrum*), Chinese privet (*Ligustrum sinense*), Canadian clearweed (*Pilea pumila*), may-apple (*Podophyllum peltatum*), stinging nettle (*Urtica dioica*), Japanese stilt grass (*Microstegium vimineum*), pale touch-me-not (*Impatiens pallida*), and poision ivy (*Toxicodenron radicans*). The soil between 0-3 inches exhibited a low-chroma matrix color (10YR 3/2) with a clay loam texture. The soil between 3-16 inches exhibited a low-chroma matrix color (10YR 3/1) with a clay loam texture.

Wetland BB11

Wetland BB11 (W-BB11) is a PFO wetland 2,493-SF in size located in the central portion of the study area (Figure 4-4). Indicators of wetland hydrology include water marks and water stained leaves. Dominant vegetation consisted of red maple, American beech (*Fagus grandifolia*), an unidentified honeysuckle species (*Lonicera* sp.), and Canadian clearweed. The soil between 0-1 inches exhibited a low-chroma matrix color (10YR 3/1) with a clay loam muck texture. The soil between 1-18 inches exhibited a 10YR 4/3 matrix color with a clay loam texture.

Wetland BB10

Wetland BB10 (W-BB10) is a PFO wetland 1,016-SF in size located in the central portion of the study area (Figure 4-4). Indicators of wetland hydrology include surface water, water marks, water stained leaves, and crayfish burrows. Dominant vegetation consisted of red maple, American beech, an unidentified honeysuckle species, Japanese stilt grass, Canadian clearweed, deer-tongue rosette grass (*Dichanthelium clandestinum*), and Pennsylvania blackberry (*Rubus pensilvanicus*). The soil between 0-6 inches exhibited a low-chroma matrix color (10YR 3/2) with a clay loam texture that contained redoximorphic features (7.5YR 4/6). The soil between 6-18 inches exhibited a 10YR 5/4 matrix color with a clay loam texture.

Wetland BB9

Wetland BB9 (W-BB9) is a PFO wetland 709-SF in size located in the central portion of the study area (Figure 4-5). Indicators of wetland hydrology include surface water, water marks, water stained leaves, aquatic fauna, crayfish burrows, and microtopographic relief. Dominant vegetation consisted of red maple, American beech, an unidentified honeysuckle species, may-apple (*Podophyllum peltatum*), sensitive fern (*Onoclea sensibilis*), and Japanese stilt grass. The soil between 0-9 inches exhibited a low-chroma matrix color (10YR 4/1) with a clay loam texture that contained redoximorphic features (7.5YR 4/6). The soil between 8-18 inches exhibited a 10YR 5/6 matrix color with a loamy clay texture.

Wetland BB8

Wetland BB8 (W-BB8) is a PFO wetland 1,619-SF in size located in the central portion of the study area (Figure 4-5). Indicators of wetland hydrology include water stained leaves, hydrogen sulfide odor, and FAC neutral test. Dominant vegetation consisted of red maple, an unidentified honeysuckle species, Canadian clearweed, and Pennsylvania blackberry. The soil between 0-8 inches exhibited a low-chroma matrix color (10YR 4/2) with a clay loam texture. The soil between 8-16 inches exhibited a 10YR 5/6 matrix color with a clay loam texture.

Wetland BB7

Wetland BB7 (W-BB7) is a PEM wetland 94,073-SF in size located in the central portion of the study area (Figure 4-5). Indicators of wetland hydrology include surface water, saturation, hydrogen sulfide odor, crayfish burrows, microtopographic relief, and FAC neutral test. Dominant vegetation consisted of spreading bent (*Agrostis stolonifera*), stalk-grain sedge (*Carex stipata*), lesser poverty rush (*Juncus tenuis*), poision ivy, and Pennsylvania blackberry. The soil between 0-6 inches exhibited a 10YR 4/3 matrix color with a clay loam texture. The soil between 6-18 inches exhibited a 10YR 5/4 matrix color with a loamy clay texture that contained redoximorphic features (2.5YR 4/6).

Wetland BB6

Wetland BB6 (W-BB6) is a PEM wetland 4,031-SF in size located in the central portion of the study area (Figure 4-6). Indicators of wetland hydrology include surface water, saturation, algal mat or crust, hydrogen sulfide odor, crayfish burrows, microtopographic relief, and FAC neutral test. Dominant vegetation consisted of spreading bent and poision ivy. The soil between 0-5 inches exhibited a 10YR 4/3 matrix color with a clay loam texture. The soil between 5-20 inches exhibited a low-chroma matrix color (10YR 4/2) with a loamy clay texture that contained redoximorphic features (2.5YR 4/6).

Wetland BB12

Wetland BB12 (W-BB12) is a PEM wetland 250-SF in size located in the central portion of the study area (Figure 4-7). Indicators of wetland hydrology include surface water, algal mat or crust, and sparsely vegetated concave surface, and crayfish burrows. Dominant vegetation consisted of dark-green bulrush. The soil between 0-6 inches exhibited a low-chroma matrix color (2.5Y 4/2) with a clay loam texture that contained redoximorphic features (7.5YR 5/4). The soil between 6-12 inches exhibited a low-chroma matrix color (2.5Y 4/1) with a loamy clay texture that contained redoximorphic features (7.5YR 5/4). The soil between 12-18 inches exhibited a low-chroma matrix color (2.5Y 4/2) with a loamy clay texture.

Wetland BB5

Wetland BB5 (W-BB5) is a PEM wetland 24,440-SF in size located in the northern portion of the study area (Figure 4-11). Indicators of wetland hydrology include surface water, water stained leaves, crayfish burrows, microtopographic relief, and FAC neutral test. Dominant vegetation consisted of dark-green bulrush, lesser poverty rush, and deer-tongue rosette grass. The soil between 0-6 inches exhibited low-chroma (2.5Y 4/2) and gleyed (Gley 4/10Y) matrix colors with a clay loam texture. The soil between 6-12 inches exhibited a 2.5Y 5/4 matrix color with a clay loam texture.

Wetland BB4

Wetland BB4 (W-BB4) is a PEM wetland 1,725-SF in size located in the northern portion of the study area (Figure 4-11). Indicators of wetland hydrology include surface water, aquatic fauna, crayfish burrows, and FAC neutral test. Dominant vegetation consisted of stalk-grain sedge and lesser poverty rush. The soil between 0-5 inches exhibited a low-chroma matrix color (10YR 3/2) with a clay loam texture that contained redoximorphic features (7.5YR 4/6). The soil between 5-18 inches exhibited a 10YR 4/3 matrix color with a clay loam texture.

3.1.2 Greene County (H-316, M-80, H-158, H-305, and the Redhook Compressor Station)

Based on field evidence and best professional judgment, it was determined that 17 wetlands were present within the study area. These areas demonstrated the presence of all three wetland parameters required by the *1987 Manual* and the *USACE Regional Supplement*. The vegetative community was dominated by hydrophytic plant species, the soils exhibited hydric characteristics, and the area contained wetland hydrology indicators.

A review of the NRCS Soil Survey and hydric soil list indicated that six soils mapped within the Green County study area are classified as hydric or as containing hydric components these are Dumps, mines (Du), Fluvaquents, loamy (Fa), Glenford silt loam, 3 to 8 percent slopes (GdB), Newark silt loam (Nw), Udorthents, smoothed gently sloping (UdB), and Udorthents, smoothed, moderately steep (UdD) (Figure 2-1).

Three NWI wetlands are mapped within the study area (Figure 3).

Wetland N1

Wetland N1 (W-N1) is a PEM wetland 3,401-SF in size located in the western portion of the study area (Figure 4-12). Indicators of wetland hydrology includes saturation and geomorphic position. Dominant vegetation consisted of lamp rush (*Juncus effusus*). The soil between 0-17 inches exhibited a low-chroma matrix color (10YR 5/2) with a sandy clay texture that contained redoximorphic features (10YR 6/8, 10YR 6/1).

Wetland AA1

Wetland AA1 (W-AA1) is a PEM wetland 5,275-SF in size located in the western portion of the study area (Figure 4-12). Indicators of wetland hydrology include a high water table, saturation, geomorphic position, microtopographic relief, and FAC neutral test. Dominant vegetation consisted of American sycamore (*Platanus occidentalis*), common fox sedge, and American hog peanut (*Amphicarpaea bracteata*). The soil between 0-3 inches exhibited a low-chroma matrix color (10YR 4/2) with a silty clay loam texture. The soil between 3-10 inches exhibited low-chroma matrix colors (10YR 5/1, 10YR 4/2) with a silty clay loam texture that contained redoximorphic features (10YR 3/6). The soil between 10-20 inches exhibited a 10YR 5/6 matrix color with a silty clay loam texture.

Wetland AA5

Wetland AA5 (W-AA5) is a PEM wetland 855-SF in size located in the central portion of the study area (Figure 4-12). Indicators of wetland hydrology include a high water table and geomorphic position. Dominant vegetation consisted of an unidentified grass species (*Poa* sp.). The soil

between 0-17 inches exhibited low-chroma matrix colors (2.5YR 5/1, 7.5YR 3/1) with a silty clay texture that contained redoximorphic features (10YR 5/6).

Wetland AA6

Wetland AA6 (W-AA6) is a PEM wetland 3,083-SF in size located in the western portion of the study area (Figure 4-12). Indicators of wetland hydrology include a high water table, saturation, oxidized rhizospheres on living roots, geomorphic position and FAC neutral test. Dominant vegetation consisted of reed canary grass (*Phalaris arundinacea*), and narrow-leaf cattail (*Typha angustifolia*). The soil between 0-19 inches exhibited a low-chroma matrix color (10YR 5/2) with a silty clay loam texture that contained redoximorphic features (10YR 3/6).

Wetland AA2

Wetland AA2 (W-AA2) is a PEM wetland 293-SF in size located in the western portion of the study area (Figure 4-12). Indicators of wetland hydrology include surface water, a high water table, saturation, geomorphic position, and FAC neutral test. Dominant vegetation consisted of green ash (*Fraxinus pennsylvanica*) and shallow sedge (*Carex lurida*). The soil between 0-9 inches exhibited a low-chroma matrix color (10YR 4/1) with a silty clay texture. The soil between 9-19 inches exhibited a low-chroma matrix color (10YR 4/1) with a silty clay texture that contained redoximorphic features (10YR 5/6).

Wetland AA3

Wetland AA3 (W-AA3) is a PEM wetland 353-SF in size located in the western portion of the study area (Figure 4-13). Indicators of wetland hydrology include surface water and a high water table. Dominant vegetation consisted of rough-stalk blue grass (*Poa trivialis*) and narrow-leaf cat-tail. The soil between 0-16 inches exhibited a low-chroma matrix color (10YR 6/1) with a silty clay loam texture that contained redoximorphic features (10YR 5/3, 10YR 4/6).

Wetland AA4

Wetland AA4 (W-AA4) is a PEM wetland 9,655-SF in size located in the central portion of the study area (Figure 4-14). Indicators of wetland hydrology include surface water, high water table, hydrogen sulfide odor, oxidized rhizospheres on living roots, geomorphic position, and FAC neutral test. Dominant vegetation consisted of shallow sedge and common fox sedge. The soil between 0-3 inches exhibited a low-chroma matrix color (10YR 5/1) with a silty clay loam texture. The soil between 3-19 inches exhibited a low-chroma matrix color (10YR 5/1) with a silty clay loam texture that contained redoximorphic features (10YR 3/6).

Wetland AA7

Wetland AA7 (W-AA7) is a PEM wetland 12,464-SF in size located in the central portion of the study area (Figure 4-14). Indicators of wetland hydrology include surface water, a high water table, hydrogen sulfide odor, oxidized rhizospheres on living roots, and FAC neutral test. Dominant vegetation consisted of common fox sedge and fowl blue grass (*Poa palustris*). The soil between 0-19 inches exhibited a low-chroma matrix color (10YR 3/1, 10YR 5/1) with a silty clay texture that contained redoximorphic features (10YR 5/8).

Wetland AA8

Wetland AA8 (W-AA8) is a PEM wetland 1,186-SF in size located in the central portion of the study area (Figure 4-15). Indicators of wetland hydrology include a high water table, saturation, geomorphic position, and FAC neutral test. Dominant vegetation consisted of shallow sedge, lamp rush, and common fox sedge. The soil between 0-9 inches exhibited a low-chroma matrix color (10YR 5/2) with a silty clay loam texture that contained redoximorphic features (10YR 4/6).

Wetland M1

Wetland M1 (W-M1) is a PEM wetland 235-SF in size located in the central portion of the study area (Figure 4-16). Indicators of wetland hydrology included oxidized rhizospheres on living roots and FAC neutral test. Dominant vegetation consisted of reed canary grass. The soil between 0-2 inches exhibited a low-chroma matrix color (10YR 2/1) with a clay loam texture. The soil between 2-8 inches exhibited a low-chroma matrix color (2.5Y 5/2) with a gravely clay loam texture that contained redoximorphic features (7.5YR 5/6).

Wetland AA9

Wetland AA9 (W-AA9) is a PEM wetland 275-SF in size located in the central portion of the study area (Figure 4-16). Indicators of wetland hydrology include a high water table, saturation, geomorphic position, and FAC neutral test. Dominant vegetation consisted of rough-stalk blue grass and common fox sedge. The soil between 0-19 inches exhibited a low-chroma matrix color (10YR 5/1) with a silty clay loam texture that contained redoximorphic features (10YR 5/8).

Wetland AA10

Wetland AA10 (W-AA10) is a PEM wetland 1,344-SF in size located in the western portion of the study area (Figure 4-18). Indicators of wetland hydrology include a high water table, saturation, oxidized rhizospheres on living roots, geomorphic position, and FAC neutral test. Dominant vegetation consisted of black tupelo (*Nyssa sylvatica*), rice cut grass (*Leersia oryzoides*), and harvestlice (*Agrimonia parviflora*). The soil between 0-3 inches exhibited a low-chroma matrix color (10YR 2/2) with a sandy loam texture. The soil between 3-19 inches exhibited low-chroma matrix

colors (10YR 2/2, 10YR 5/1) with a sandy loam texture that contained redoximorphic features (10YR 3/6).

Wetland M3

Wetland M3 (W-M3) is a PEM wetland 28,129-SF in size located in the western portion of the study area (Figure 4-18). Indicators of wetland hydrology included oxidized rhizospheres on living roots, geomorphic position, and FAC neutral test. Dominant vegetation consisted of black walnut (*Juglans nigra*), black willow (*Salix nigra*), wingstem (*Verbesina alternifolia*), and narrow leaf cat-tail. The soil between 0-8 inches exhibited a low-chroma matrix color (10YR 4/2) with a silt loam texture that contained redoximorphic features (7.5YR 4/4).

Wetland M4

Wetland M4 (W-M4) is a PEM wetland 17,194-SF in size located in the western portion of the study area (Figure 4-18). Indicators of wetland hydrology included surface water, a high water table, saturation, iron deposits, and FAC neutral test. Dominant vegetation consisted of reed canary grass and narrow leaf cat-tail. The soil between 0-12 inches exhibited a low-chroma matrix color (10YR 3/1) with a clay loam texture that contained redoximorphic features (10YR 4/4).

Wetland M2

Wetland M2 (W-M2) is a PEM wetland 27,784-SF in size located in the western portion of the study area (Figure 4-19). Indicators of wetland hydrology included surface water, saturation, oxidized rhizospheres on living roots, geomorphic position, and FAC neutral test. Dominant vegetation consisted of black willow, narrow leaf cat-tail, and reed canary grass. The soil between 0-8 inches exhibited a low-chroma matrix color (10YR 4/1) with a clay loam texture that contained redoximorphic features (7.5YR 4/4).

Wetland M5

Wetland M5 (W-M5) is a PEM wetland 2,094-SF in size located in the western portion of the study area (Figure 4-19). Indicators of wetland hydrology included geomorphic position and FAC neutral test. Dominant vegetation consisted of black willow and narrow leaf cat-tail. The soil between 0-12 inches exhibited a low-chroma matrix color (10YR 5/2) with a clay loam texture that contained redoximorphic features (5YR 5/4).

Wetland M6

Wetland M6 (W-M6) is a PEM wetland 259-SF in size located in the western portion of the study area (Figure 4-19). Indicators of wetland hydrology included oxidized rhizospheres on living roots, geomorphic position, and FAC neutral test. Dominant vegetation consisted of narrow leaf cat-tail

(*Typha angustifolia*) and soft-stem bulrush (*Schoenoplectus tabernaemontani*). The soil between 0-12 inches exhibited a low-chroma matrix color (10YR 5/2) with a clay loam texture that contained redoximorphic features (5YR 4/4).

3.1.3 Wetzel County, WV (Webster Interconnect, Mobley Tap, and H-319)

Based on field evidence and best professional judgment, it was determined that 3 wetlands were present within the study area. These areas demonstrated the presence of all three wetland parameters required by the *1987 Manual* and the *USACE Regional Supplement*.

A review of the NRCS Soil Survey and hydric soil list indicated that five soils mapped within the Wetzel county study area are classified as hydric or as containing hydric components (Figure 2): Elk silt loam, 3 to 8 percent slopes (EkB), Glenford silt loam, 3 to 8 percent slopes (GsB), Huntington silt loam (Hn), Nolin loam (No), Skidmore gravelly loam (Sk).

No NWI wetlands are mapped within the study area (Figure 3).

Wetland Z1

Wetland Z1 (W-Z1) is a PEM wetland 176-SF in size located in the southern portion of the study area (Figure 4-22). Indicators of wetland hydrology included oxidized rhizospheres on living roots, geomorphic position, and FAC neutral test. Dominant vegetation consisted of black walnut (*Juglans nigra*), ash-leaf maple (*Acer negundo*), deertongue rosette grass (*Dichanthelium clandestinum*), and reed canary grass (*Phalaris arundinacea*). The soil between 0-8 inches exhibited a low-chroma matrix color (10YR 4/2) with a silt loam texture. The soil between 8-20 inches exhibited a low-chroma matrix color (10YR 4/2) with a silt loam texture that contained redoximorphic features (10YR 5/8).

Wetland Z3A and B

Wetland Z3 (W-Z3A and B) is a PEM wetland 7,720-SF in size located in the southern portion of the study area (Figure 4-21). Indicators of wetland hydrology included oxidized rhizospheres on living roots, geomorphic position, and FAC neutral test. Dominant vegetation consisted of shallow sedge (*Carex lurida*), common fox sedge (*Carex vulpinoidea)*, and small carp grass (*Arthraxon hispidus*). The soil between 0-8 inches exhibited low-chroma matrix colors (10YR 4/2 and 2.5Y 6/8) with a silty clay loam texture that contained redoximorphic features (7.5YR 5/8).

Wetland Z2

Wetland Z2 (W-Z2) is a PEM wetland 4,025-SF in size located in the southern portion of the study area (Figure 4-21). Indicators of wetland hydrology included oxidized rhizospheres on living roots,

geomorphic position, and FAC neutral test. Dominant vegetation consisted of common fox sedge (*Carex vulpinoidea)*. The soil between 0-10 inches exhibited a low-chroma matrix color (10YR 4/2) with a silty clay loam texture that contained redoximorphic features (7.5YR 5/8).

3.2 Stream Identification and Evaluation

Thirty-seven streams were identified within the evaluated study area. Data sheets that detail the bank and channel characteristics, substrate composition, aquatic habitat, and hydrology were prepared at each stream (Appendix A).

3.2.1 Washington/Allegheny Counties (H-318 pipeline)

Six steams were identified within the evaluated study area in Washington and Allegheny counties.

Stream BB1

Stream BB1 (S-BB1), which flows west, is the perennial stream Lobbs Run (Figure 4-1). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 2 feet in width and 1 foot in height. The channel contained a cobble, gravel, sand, and silt substrate. The stream exhibited a heavy flow at the time of the field investigations with a water depth of approximately 5 inches.

Stream BB2

Stream BB2 (S-BB2), which flows north, is an ephemeral UNT to Lobbs Run (Figure 4-2). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 1 foot in width and 1 foot in height. The channel contained a silt and clay substrate. The stream exhibited a moderate flow at the time of the field investigations with a water depth of approximately 2 inches.

Stream BB5

Stream BB5 (S-BB5), which flows east, is a perennial known as the Monongehela River (Figure 4-3). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 860 feet in width and 70 feet in height. The substrate was not documented as the investigators were unable to see the bottom of the river. The stream exhibited a heavy flow at the time of the field investigations. Water depth was unable to be documented as the investigators we unable to access the river to determine depth.

Stream BB4

Stream BB4 (S-BB4), which flows east, is the perennial stream Bunola Run Figure 4-4). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 20 feet in width and 3 foot in height. The channel contained a boulder, cobble, gravel, sand, silt, and clay substrate. The stream exhibited a moderate flow at the time of the field investigations with a water depth of approximately 12 inches.

Stream BB6

Stream BB6 (S-BB6), which flows north, is a perennial UNT to Bunola Run (Figure 4-4). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 3 feet in width and 2 feet in height. The channel contained a cobble, gravel, and silt substrate. The stream exhibited a moderate flow at the time of the field investigations with a water depth of approximately 7 inches

Stream BB3

Stream BB3 (S-BB3), which flows northeast, is the perennial stream Kelly Creek (Figure 4-6). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 30 feet in width and 3 foot in height. The channel contained a cobble, gravel, sand, and silt substrate. The stream exhibited a heavy flow at the time of the field investigations with a water depth of approximately 18 inches.

3.2.2 Greene County (H-316, M-80, H-158, H-305, and the Redhook Compressor Station)

Twenty seven streams were identified within the evaluated study area in Greene County.

Stream N1

Stream N1 (S-N1), which flows south, is an intermittent UNT to South Fork Tenmile Creek (Figure 4-12). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, and groundwater. The stream channel is approximately 7 feet in width and 6 feet in height. The channel contained a cobble, gravel, and sand substrate. The stream exhibited a no flow at the time of the field investigations.

Stream N2

Stream N2 (S-N2), which flows southwest, is an intermittent UNT to South Fork Tenmile Creek (Figure 4-12). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, and groundwater. The stream channel is approximately 2 feet in width and 1 foot in height. The

channel contained a cobble, gravel, sand, and silt substrate. The stream exhibited a no flow at the time of the field investigations.

Stream N3

Stream N3 (S-N3), which flows southwest, is an intermittent UNT to South Fork Tenmile Creek (Figure 4-12). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, and groundwater. The stream channel is approximately 3 feet in width and 6 inches in height. The channel contained a boulder, cobble, sand, and silt substrate. The stream exhibited a no flow at the time of the field investigations.

Stream AA1

Stream AA1 (S-AA1), which flow south is a perennial UNT to South Fork Tenmile Creek (Figure 4-12). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 10 feet in width and 16 inches in height. The channel contained a bedrock, boulder, cobble, and gravel substrate. The stream exhibited heavy a flow at the time of the field investigations with a water depth of approximately 3 inches.

Stream AA2

Stream AA2 (S-AA2), which flows southeast, is an ephemeral UNT to South Fork Tenmile Creek (Figure 4-12). The stream bank is approximately 1.5 feet in width and 6 inches in height. The channel substrate is comprised of sand, silt, and clay. The stream exhibited standing water at the time of the field investigations with a water depth of approximately 0.5 inches.

Stream AA5

Stream AA5 (S-AA5), which flows southwest, is the perennial stream South Fork Tenmile Creek (Figure 4-12). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 70 feet in width and 15 feet in height. The substrate was not documented as the investigators were unable to see the bottom of the stream. The stream exhibited a heavy flow at the time of the field investigations with a water depth of approximately 4 feet.

Stream AA7

Stream AA7 (S-AA7), which flows west, is an ephemeral UNT to South Fork Tenmile Creek (Figure 4-12). The stream bank is approximately 8 feet in width and 2 feet in height. The channel substrate

is comprised of boulder cobble, and gravel substrate. The stream exhibited a heavy flow at the time of the field investigations with a water depth of approximately 4 inches.

Stream AA3

Stream AA3 (S-AA3), which flows south, is an ephemeral UNT to South Fork Tenmile Creek (Figure 4-12). The stream bank is approximately 4 feet in width and 14 inches in height. The channel substrate is comprised of gravel and sand. The stream exhibited a moist channel with no flow at the time of the field investigations.

Stream AA4

Stream AA4 (S-AA4), which flows south, is a perennial UNT to South Fork Tenmile Creek (Figure 4-13). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 5 feet in width and 21 inches in height. The channel contained a cobble, gravel and sand substrate. The stream exhibited a moderate flow at the time of the field investigations with a water depth of approximately 2 inches.

Stream AA8

Stream AA8 (S-AA8), which flows southeast, is an ephemeral UNT to South Fork Tenmile Creek (Figure 4-14). The stream bank is approximately 3 feet in width and 1.5 feet in height. The channel substrate is comprised of silt and clay substrate. The stream exhibited a heavy flow at the time of the field investigations with a water depth of approximately 1 inch.

Stream AA9

Stream AA9 (S-AA9), which flows southwest, is an ephemeral UNT to South Fork Tenmile Creek (Figure 4-14). The stream bank is approximately 4 feet in width and 18 inches in height. The channel substrate is comprised of silt and clay substrate. The stream exhibited a heavy flow at the time of the field investigations with a water depth of approximately 1 inch.

Stream AA10

Stream AA10 (S-AA10), which flows south, is an intermittent UNT to South Fork Tenmile Creek (Figure 4-14). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, and groundwater. The stream channel is approximately 5 feet in width and 2 feet in height. The channel contained a bedrock, boulder, gravel, and silt substrate. The stream exhibited a moderate flow at the time of the field investigations with a water depth of approximately 3 inches.

Stream AA11

Stream AA11 (S-AA11), which flows southeast, is an ephemeral UNT to Ruff Creek (Figure 4-15). The stream bank is approximately 6.5 feet in width and 60 inches in height. The channel substrate is comprised of boulder, cobble, sand, silt, and clay substrate. The stream exhibited a moist channel with no flow at the time of the field investigations.

Stream AA12

Stream AA12 (S-AA12), which flows south, is the perennial stream Ruff Creek (Figure 4-15). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 75 feet in width and 12 feet in height. The substrate was not documented as the investigators were unable to see the bottom of the stream. The stream exhibited a heavy flow at the time of the field investigations with a water depth of approximately 26 inches.

Stream AA13

Stream AA13 (S-AA13), which flows south, is an ephemeral UNT to South Fork Tenmile Creek (Figure 4-17). The stream bank is approximately 3 feet in width and 15 inches in height. The channel substrate is comprised of boulder, cobble, gravel, sand, silt, and clay substrate. The stream exhibited standing water at the time of the field investigations with a water depth of approximately 0.5 inches.

Stream AA14

Stream AA14 (S-AA14), which flows southwest, is an ephemeral UNT to South Fork Tenmile Creek (Figure 4-17). The stream bank is approximately 3 feet in width and 18 inches in height. The channel substrate is comprised of sand and clay substrate. The stream exhibited a moist channel with no flow at the time of the field investigations.

Stream AA15

Stream AA15 (S-AA15), which flows southeast, is the perennial stream South Fork Tenmile Creek (Figure 4-17). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 100 feet in width and 17 feet in height. The substrate was not documented as the investigators were unable to see the bottom of the stream. The stream exhibited a heavy flow at the time of the field investigations with a water depth of approximately 3 feet.

Stream AA24

Stream AA24 (S-AA24), which flows southeast, is an intermittent UNT to South Fork Tenmile Creek (Figure 4-18). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, and groundwater. The stream channel is approximately 6 feet in width and 2 feet in height. The channel contained a bedrock, cobble, gravel, silt, and clay substrate. The stream exhibited a low flow at the time of the field investigations with a water depth of approximately 1 inch.

Stream AA23

Stream AA23 (S-AA23), which flows east, is an ephemeral UNT to South Fork Tenmile Creek (Figure 4-18). The stream bank is approximately 9 feet in width and 3 feet in height. The channel substrate is comprised of boulder, gravel, and sand substrate. The stream exhibited a moist channel with no flow at the time of the field investigations.

Stream AA22

Stream AA22 (S-AA22), which flows east, is an ephemeral UNT to South Fork Tenmile Creek (Figure 4-18). The stream bank is approximately 7 feet in width and 3 feet in height. The channel substrate is comprised of gravel, sand, silt, and clay substrate. The stream exhibited a low flow at the time of the field investigations with a water depth of approximately .5 inches.

Stream AA21

Stream AA21 (S-AA21), which flows east, is an intermittent UNT to South Fork Tenmile Creek (Figure 4-18). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, and groundwater. The stream channel is approximately 4 feet in width and 4 feet in height. The channel contained a cobble, gravel, sand, silt, and clay substrate. The stream exhibited a low flow at the time of the field investigations with a water depth of approximately 1 inch.

Stream AA20

Stream AA20 (S-AA20), which flows east, is a perennial UNT to South Fork Tenmile Creek (Figure 4-18). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 1 foot in width and 1 foot in height. The channel contained a sand, silt, and clay substrate. The stream exhibited a moderate flow at the time of the field investigations with a water depth of approximately 1 inch.

Stream AA17

Stream AA17 (S-AA17), which flows east, is a perennial UNT to South Fork Tenmile Creek (Figure 4-18). This watercourse is supported by precipitation, surficial runoff from adjacent uplands,

groundwater, and upstream tributaries. The stream channel is approximately 12 feet in width and 4 feet 9inches in height. The channel contained a bedrock boulder, cobble, gravel, sand, and silt substrate. The stream exhibited a moderate flow at the time of the field investigations with a water depth of approximately 22 inches.

Stream AA18

Stream AA18 (S-AA18), which flows northeast, is an intermittent UNT to South Fork Tenmile Creek (Figure 4-18). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, and groundwater. The stream channel is approximately 2 feet in width and 6 inches in height. The channel contained a gravel, sand silt and clay substrate. The stream exhibited a low flow at the time of the field investigations with a water depth of approximately 0.5 inches.

Stream AA19

Stream AA19 (S-AA19), which flows northeast, is an intermittent UNT to South Fork Tenmile Creek (Figure 4-18). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, and groundwater. The stream channel is approximately 2 feet in width and 3 feet in height. The channel contained a sand silt and clay substrate. The stream exhibited a low flow at the time of the field investigations with a water depth of approximately 0.5 inches.

Stream AA16

Stream AA16 (S-AA16), which flows northwest, is a perennial UNT to South Fork Tenmile Creek (Figure 4-18). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 11 feet in width and 57 inches in height. The channel contained a boulder, cobble, and gravel substrate. The stream exhibited a low flow at the time of the field investigations with a water depth of approximately 7 inches.

Stream M1

Stream M1 (S-M1), which flows north, is an ephemeral UNT to Muddy Creek (Figure 4-18). This watercourse is supported by precipitation, surficial runoff from adjacent uplands. The stream channel is approximately 10 feet in width and 4 feet in height. The channel contained a clay, silt, gravel, and cobble, substrate. The stream exhibited a dry channel with no flow at the time of the field investigations.

3.2.3 Wetzel County, WV (Webster Interconnect, Mobley Tap, and H-319)

Four streams were identified within the evaluated study area in Wetzel County.

Stream A2A

Stream A2A (S-A2A), which flows north, is an ephemeral UNT to North Fork Fishing Creek (Figure 4-21). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 12 feet in width and 4 feet in height. The channel contained cobble, gravel, and silt substrate. The stream exhibited low flow at the time of the field investigations with a water depth of approximately 2 inches.

Stream A3A

Stream A3A (S-A3A), which flows east, is an ephemeral UNT to North Fork Fishing Creek (Figure 4-21). This watercourse is supported by precipitation, surficial runoff from adjacent uplands. The stream channel is approximately 5 feet in width and 1.5 feet in height. The channel contained cobble, gravel, and sand substrate. The stream exhibited no flow at the time of the field investigations.

Stream J63

Stream J63 (S-J63), which flows west, is a perennial UNT to Mobley Run (Figure 4-22). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 7 feet in width and 3.5 feet in height. The channel contained cobble, gravel, and silt substrate. The stream exhibited low flow at the time of the field investigations with a water depth of approximately 2 inches.

Stream Z1

Stream Z1 (S-Z1), which flows south, is a perennial known as Mobley Run (Figure 4-22). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 15 feet in width and 3.5 feet in height. The channel contained cobble, gravel, and silt substrate. The stream exhibited low flow at the time of the field investigations with a water depth of approximately 1 inch.

4.0 CONCLUSIONS

Thirty-three areas within the Equitrans Expansion Pipeline Project study area exhibited all three criteria listed below that are necessary to be classified as wetlands in accordance with the *1987 Manual* and the *USACE Regional Supplement*:

1. Predominance of hydrophytic vegetation (plants which are adapted for life in saturated soil conditions);
2. Hydric soils (soils which were formed under water, or in saturated conditions); and
3. Wetland hydrology (or the presence of inundated or saturated soils at some time during the growing season).

Additionally, 37 streams were identified in the Project study area during the investigation.

Washington/Allegheny Counties (H-318 pipeline)

Based on field evidence and best professional judgment, it was determined that 13 wetlands were present within the study area. Six steams were identified within the evaluated study area in Washington and Allegheny counties.

Greene County (H-316, M-80, H-158, H-305, and the Redhook Compressor Station)

Based on field evidence and best professional judgment, it was determined that 17 wetlands were present within the study area. Twenty seven streams were identified within the evaluated study area in Greene County.

Wetzel County, WV (Webster Interconnect, Mobley Tap, and H-319)

Based on field evidence and best professional judgment, it was determined that 3 wetlands were present within the study area. Four streams were identified within the evaluated study area in Wetzel County.

FIGURES

Equitrans Expansion Project

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EQUITRANS

Attachment #: 1-1
USGS Project Location Map
Washington & Allegheny County, PA

October 2015

Data Sources: Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site

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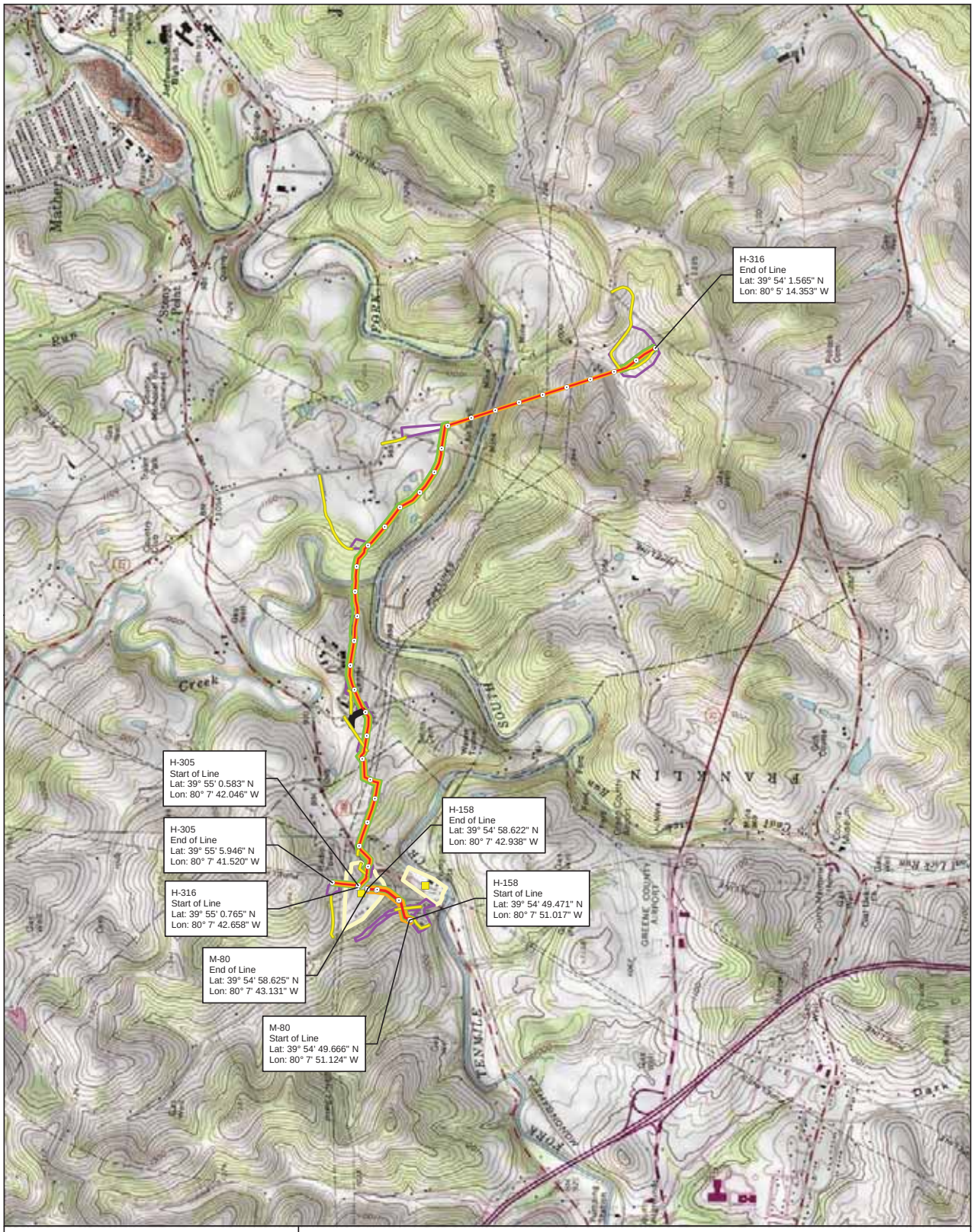

Equitrans Expansion Project

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EQUITRANS

Attachment #: 1-2
USGS Project Location Map
Greene County, Pennsylvania

October 2015

Data Sources: Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).

Legend

- Milepost
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- Right-of-Way (Access Road)
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- Compressor Station

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Equitrans Expansion Project

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EQUITRANS

Attachment #: 1-3
USGS Project Location Map
Greene County, Pennsylvania

October 2015

Data Sources: Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).

Legend

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Equitrans Expansion Project

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EQUITRANS

Attachment #: 1-4
USGS Project Location Map
Wetzel County, West Virginia

October 2015

Data Sources: Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).

Legend

- Tap
- Milepost
- Compressor Station Centroid
- Alignment Centerline
- Workspace
- Temporary Right-of-Way
- Permanent Right-of-Way
- Compressor Station
- Study Area

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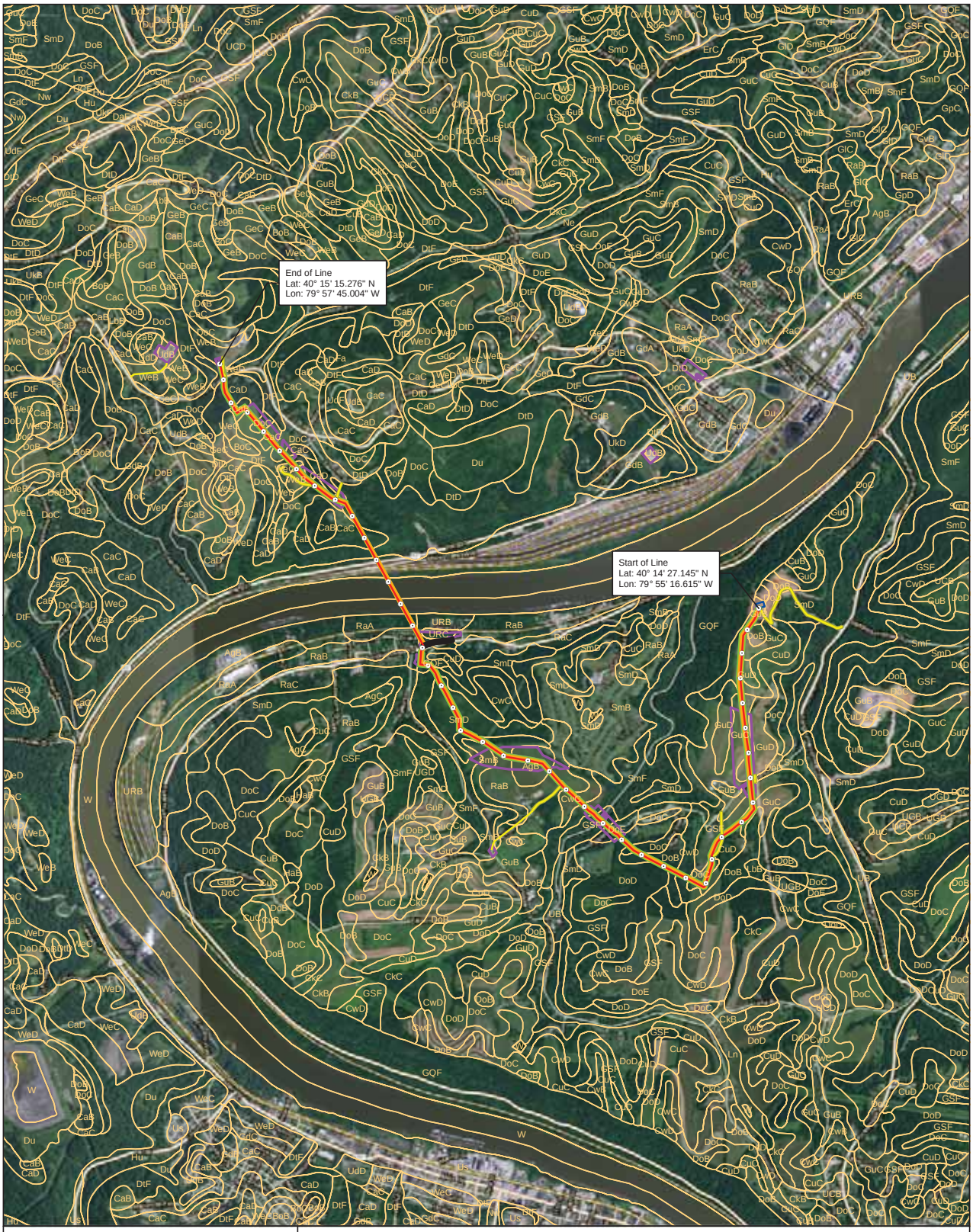

Equitrans Expansion Project

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EQUITRANS

Attachment #: 2-1
NRCS Soils and Codes Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
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- Permanent Site
- NRCS Soil & Codes

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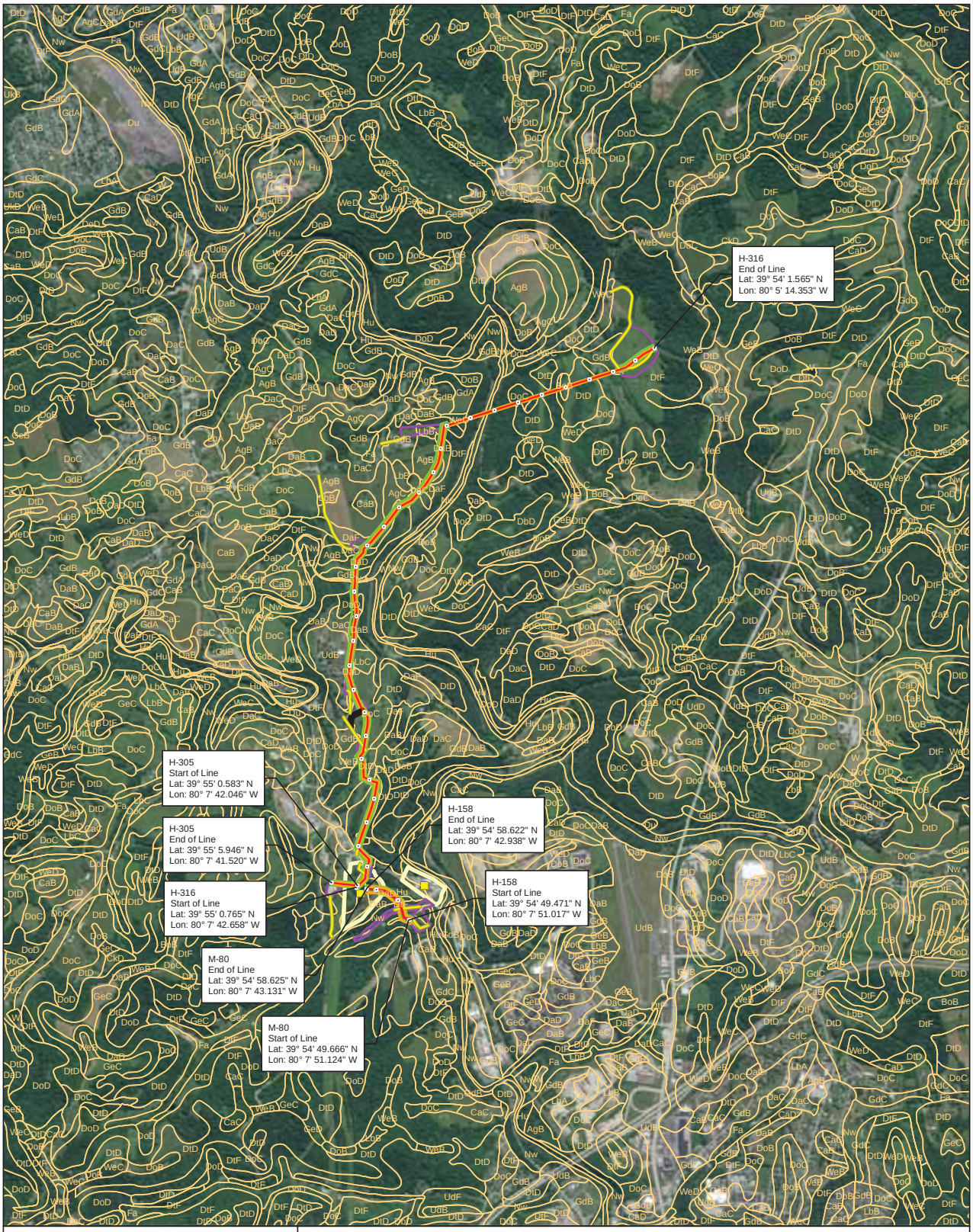

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EQUITRANS

Attachment #: 2-2
NRCS Soils and Codes Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

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- Alignment Centerline
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- Right-of-Way (Access Road)
- Groundbed
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- Workspace
- Permanent Site
- Compressor Station Centroid
- Compressor Station
- NRCS Soil & Codes

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EQUITRANS

Attachment #: 2-3
NRCS Soils and Codes Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

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- NRCS Soil & Codes

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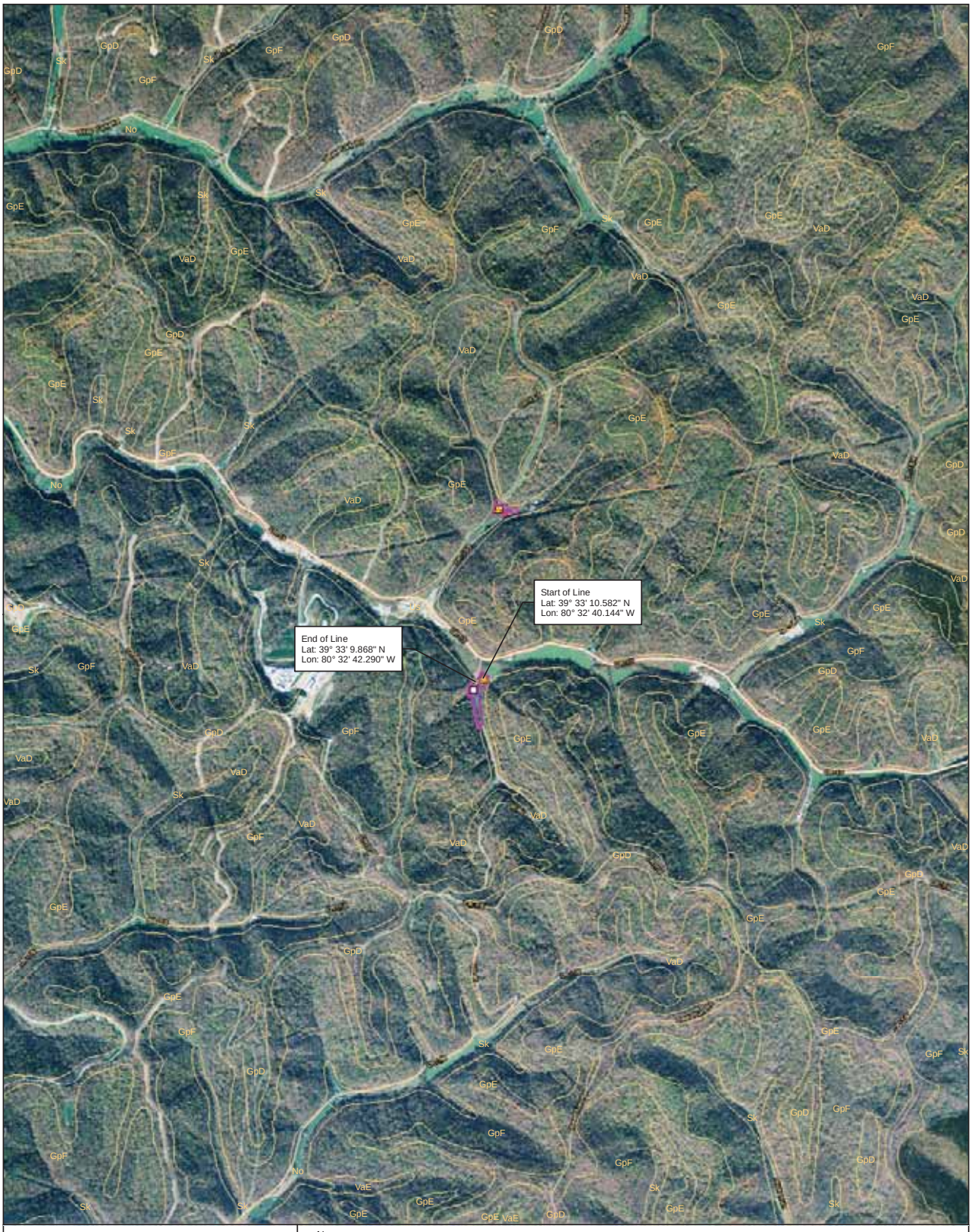

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EQUITRANS

Attachment #: 2-4
NRCS Soils and Codes Map
Wetzel County, West Virginia

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Tap
- Milepost
- Compressor Station Centroid
- Alignment Centerline
- Workspace
- Temporary Right-of-Way
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- Study Area
- NRCS Soil & Codes

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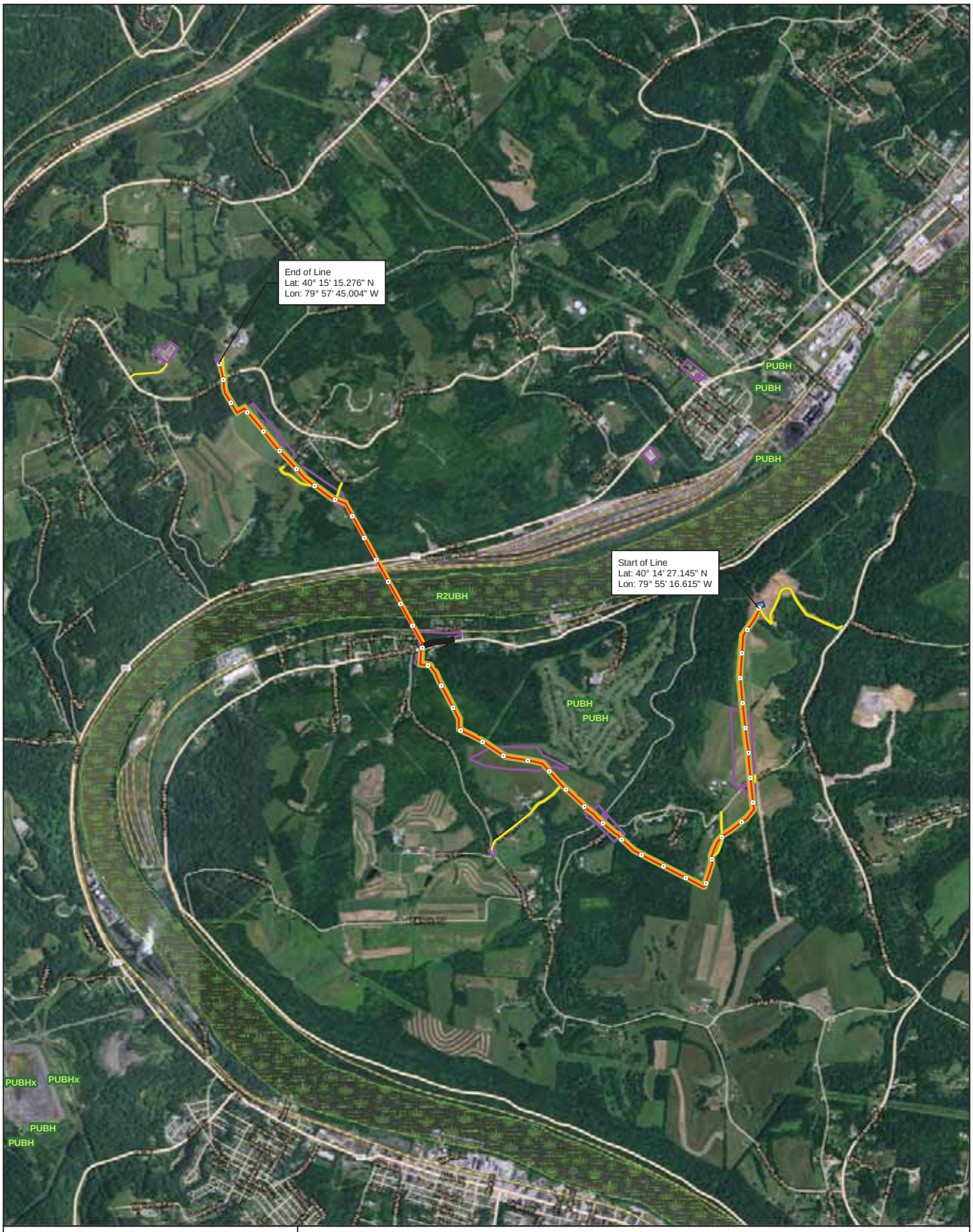

Equitrans Expansion Project

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EQUITRANS

Attachment #: 3-1
NWI Wetlands and Codes Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
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- Permanent Site
- NWI Wetlands & Codes

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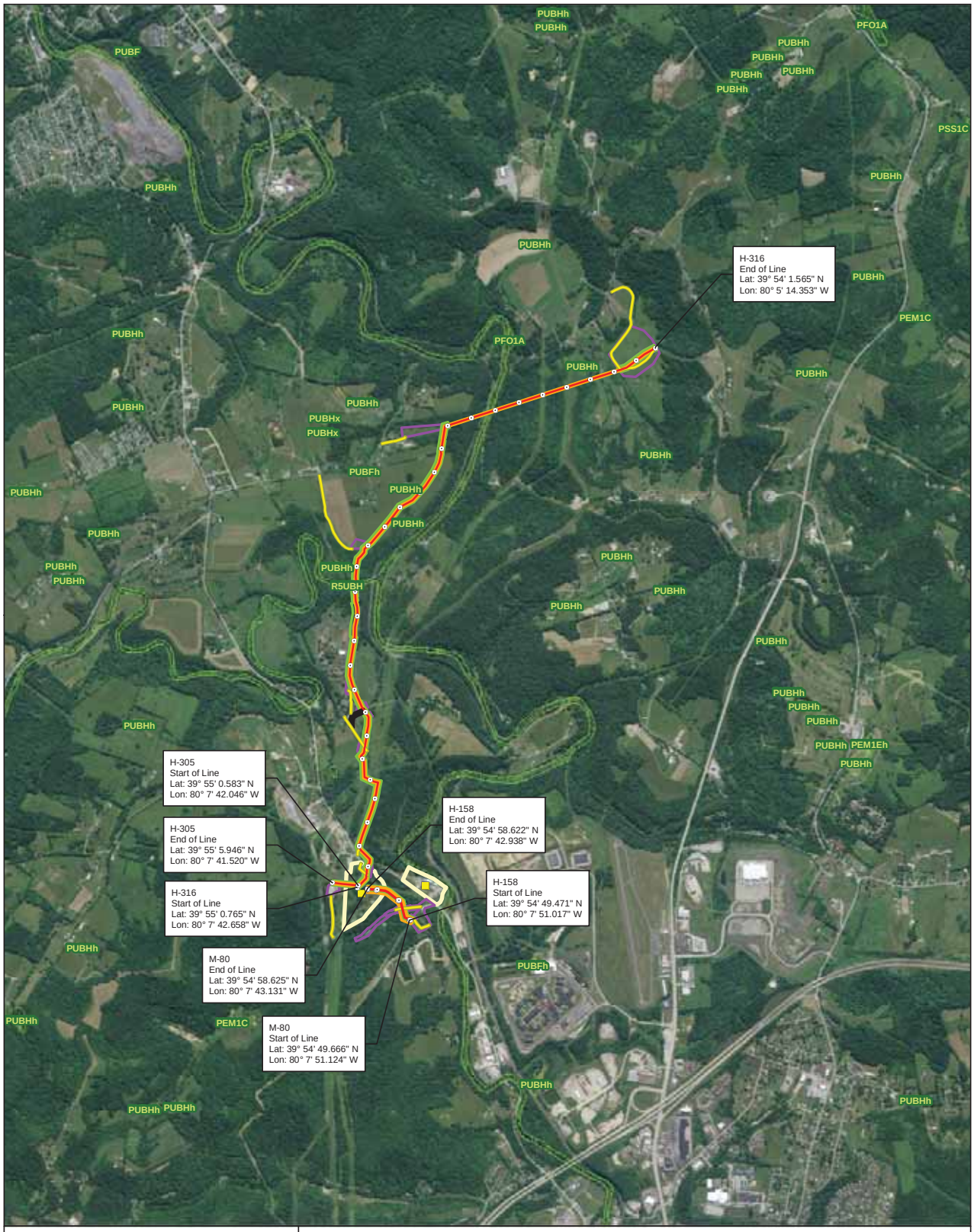

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EQUITRANS

Attachment #: 3-2
NWI Wetlands and Codes Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
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- Workspace
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- Compressor Station
- NWI Wetlands & Codes

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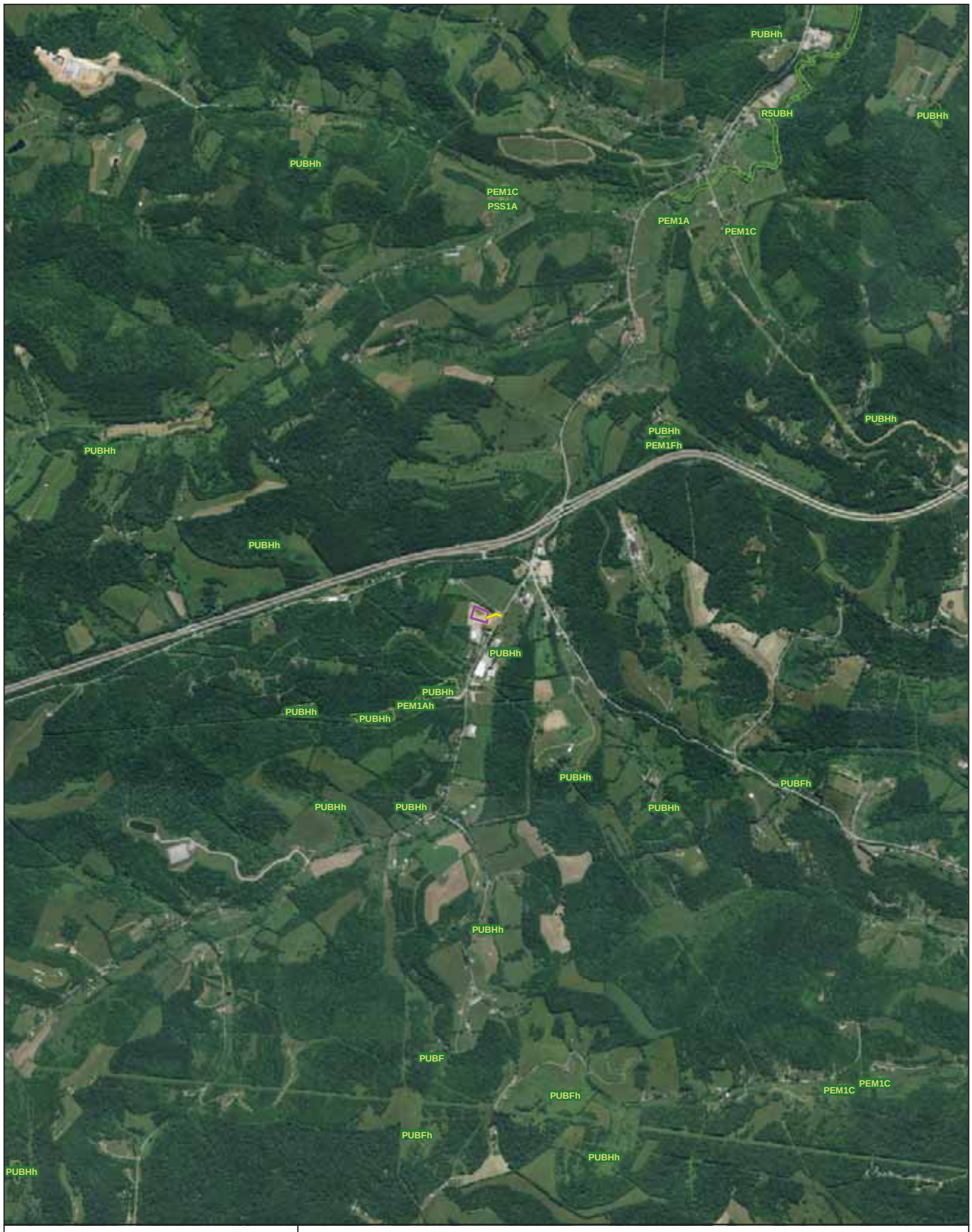

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Attachment #: 3-3
NWI Wetlands and Codes Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
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- NWI Wetlands & Codes

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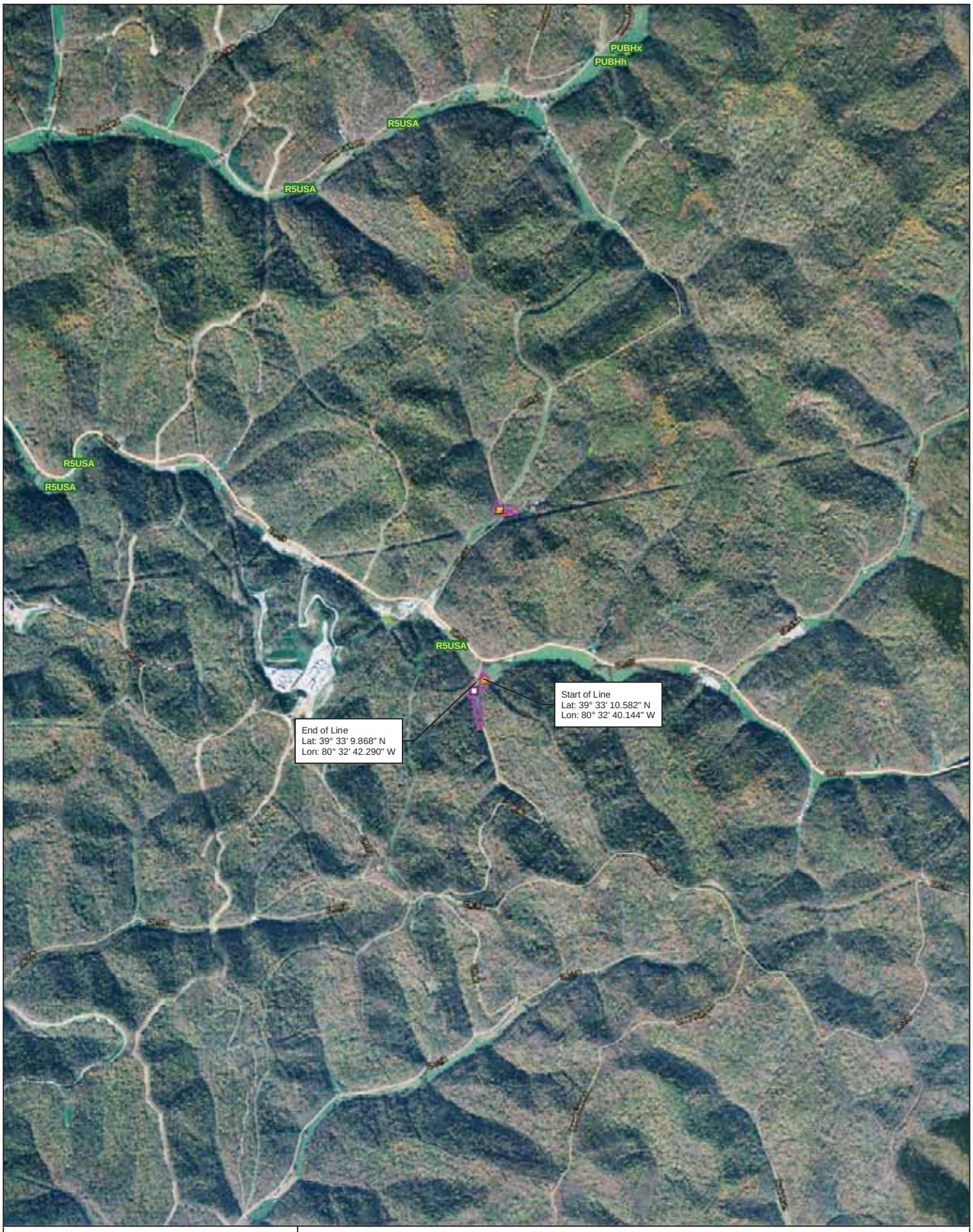

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Attachment #: 3-4
NWI Wetlands and Codes Map
Wetzel County, West Virginia

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Tap
- Milepost
- Compressor Station Centroid
- Alignment Centerline
- Workspace
- Temporary Right-of-Way
- Permanent Right-of-Way
- Compressor Station
- Study Area
- NWI Wetlands and Codes

Document Path: P:\GIS\EQT\MapDocs\eep_wv_wetzelCo_nwi.mxd

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Attachment #: 4-1
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
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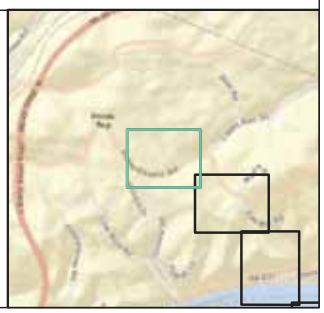
- Permanent Site
- Culvert
- Test Pit
- Stream

Wetland

- PEM
- PFO
- Photo Location



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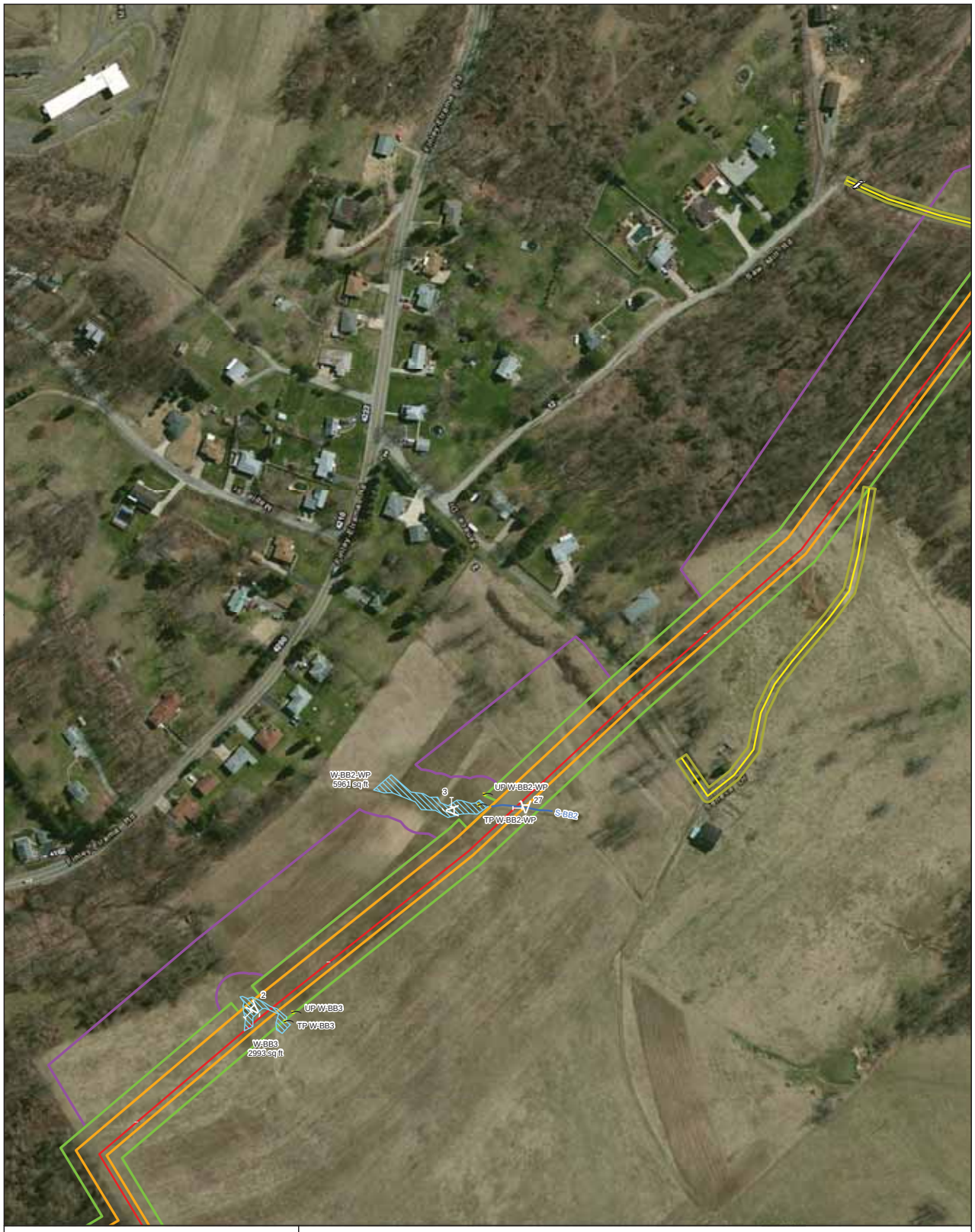

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Attachment #: 4-2
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

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Wetland

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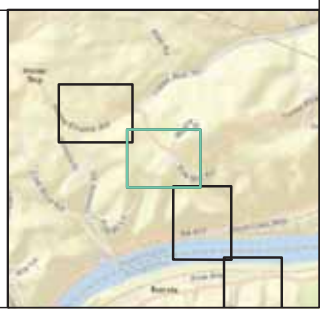
- Photo Location



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Attachment #: 4-3
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

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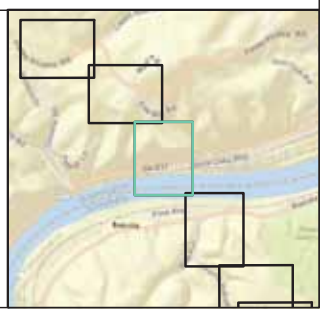

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Attachment #: 4-4
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

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- Right-of-Way (Access Road)
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Wetland

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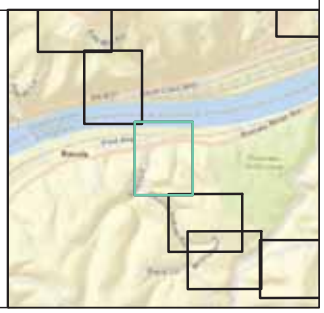

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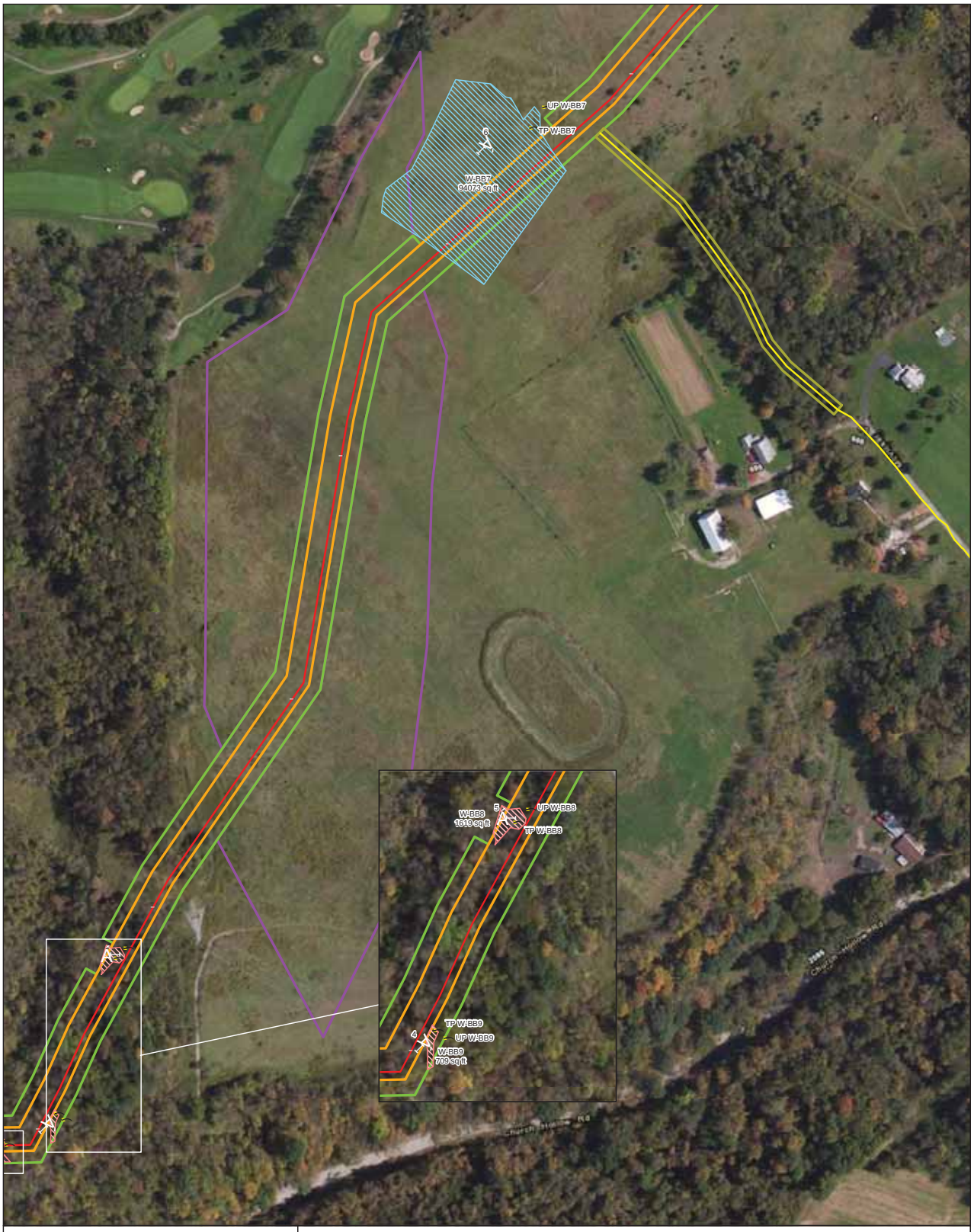

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Attachment #: 4-5
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

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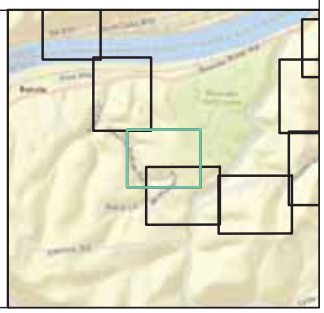

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EQUITRANS℠

Attachment #: 4-6
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

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- Groundbed
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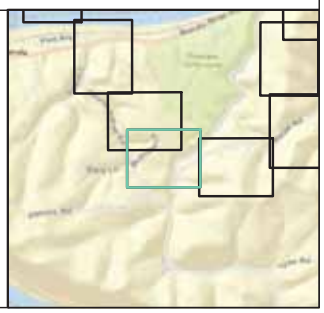
- Test Pit
- Stream

Wetland

- PEM
- PFO
- Photo Location



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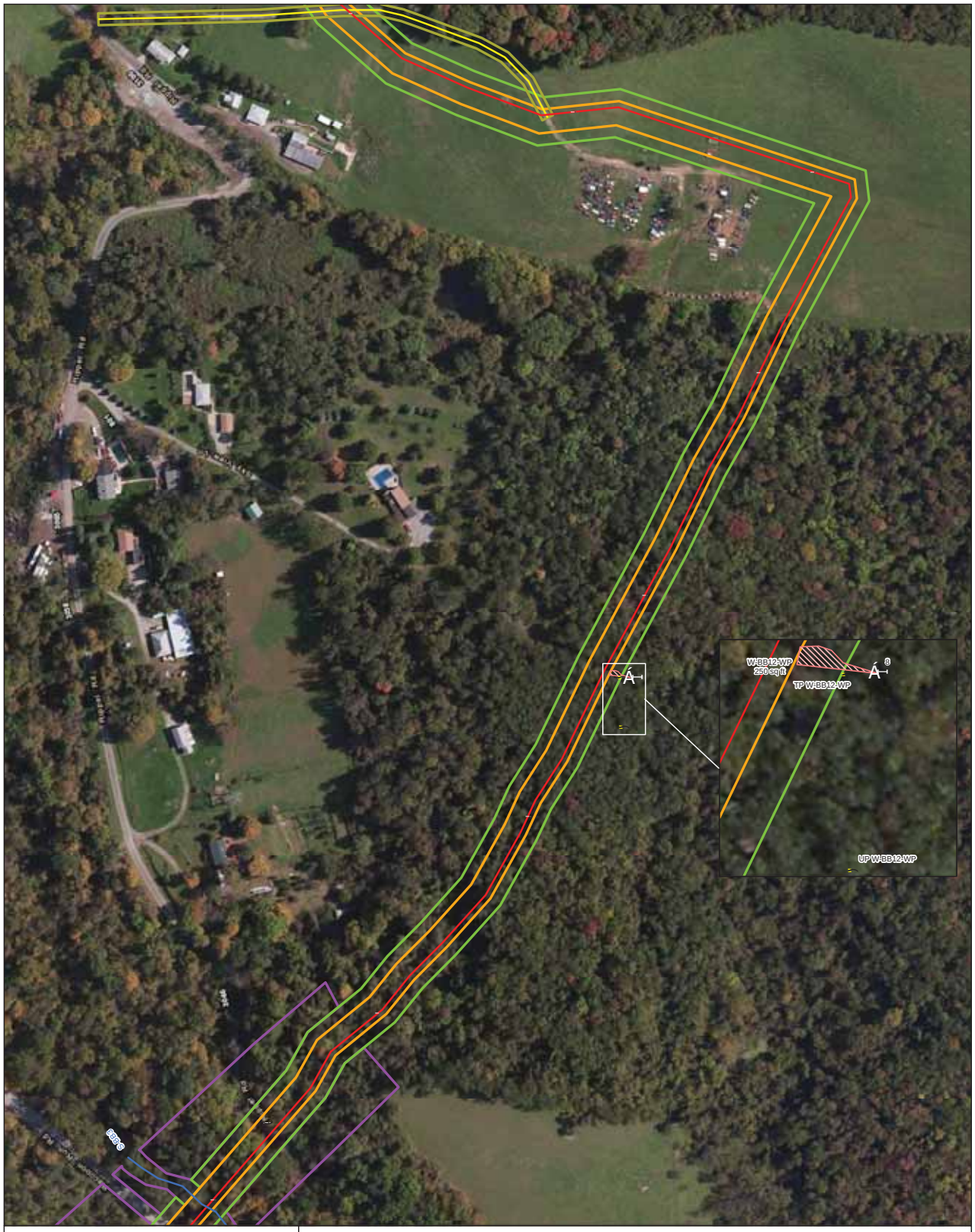

Equitrans Expansion Project

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EQUITRANS℠

Attachment #: 4-7
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

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- Right-of-Way (Access Road)
- Groundbed
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- Stream

Wetland

- PEM
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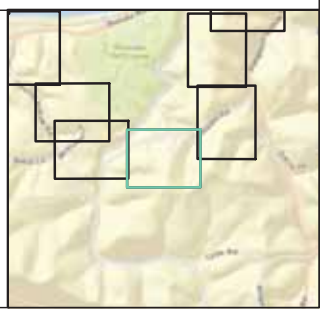

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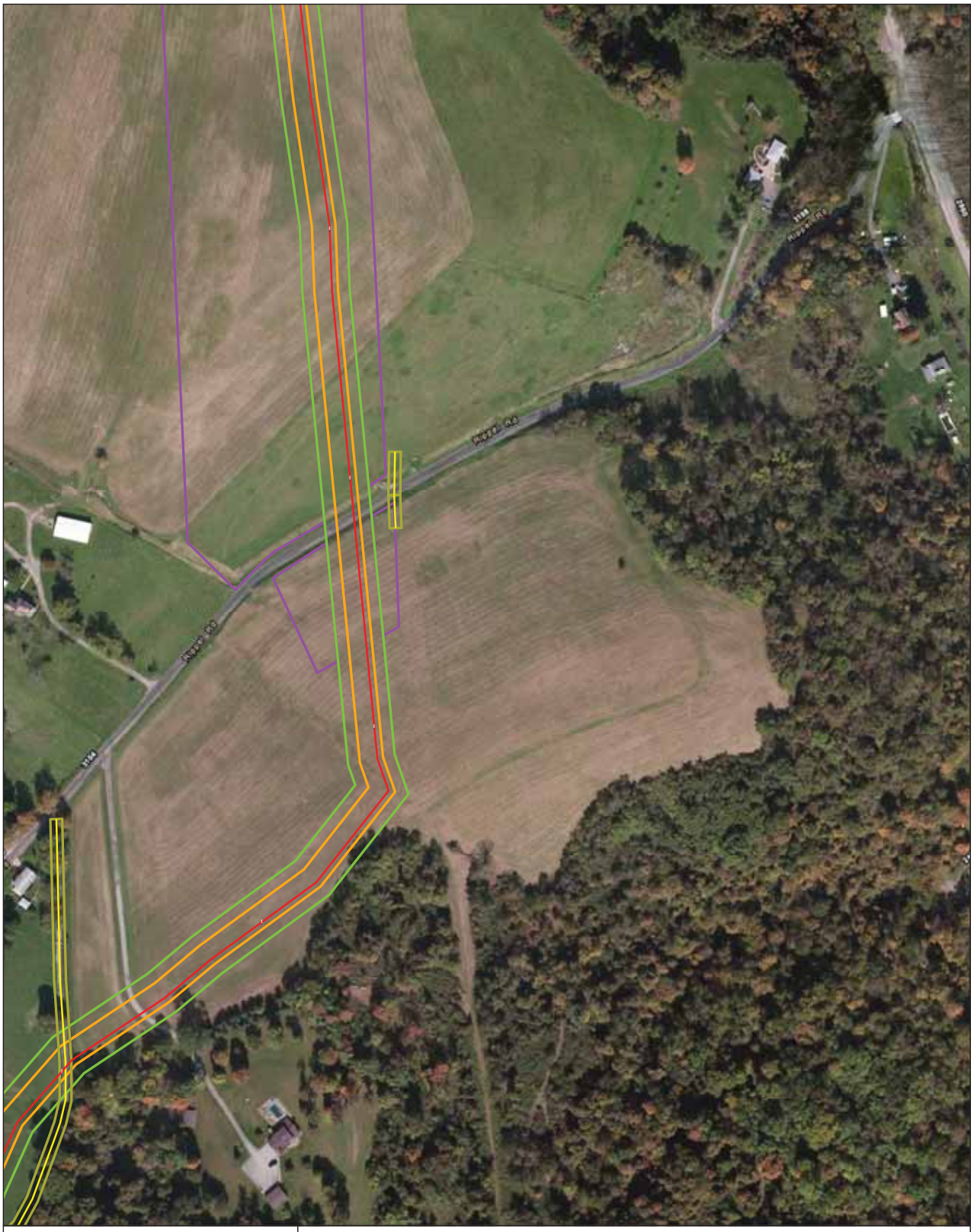

Equitrans Expansion Project

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EQUITRANS℠

Attachment #: 4-8
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
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Wetland

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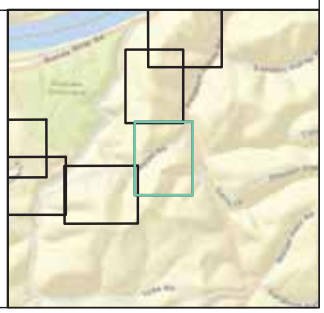
- Photo Location



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Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS℠

Attachment #: 4-9
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

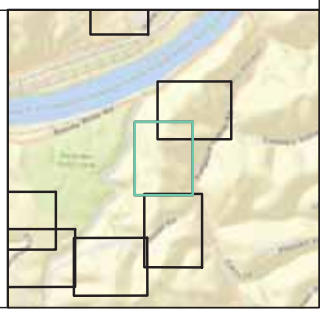
Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Culvert
- Test Pit
- Stream

Wetland

- PEM
- PFO
- Photo Location



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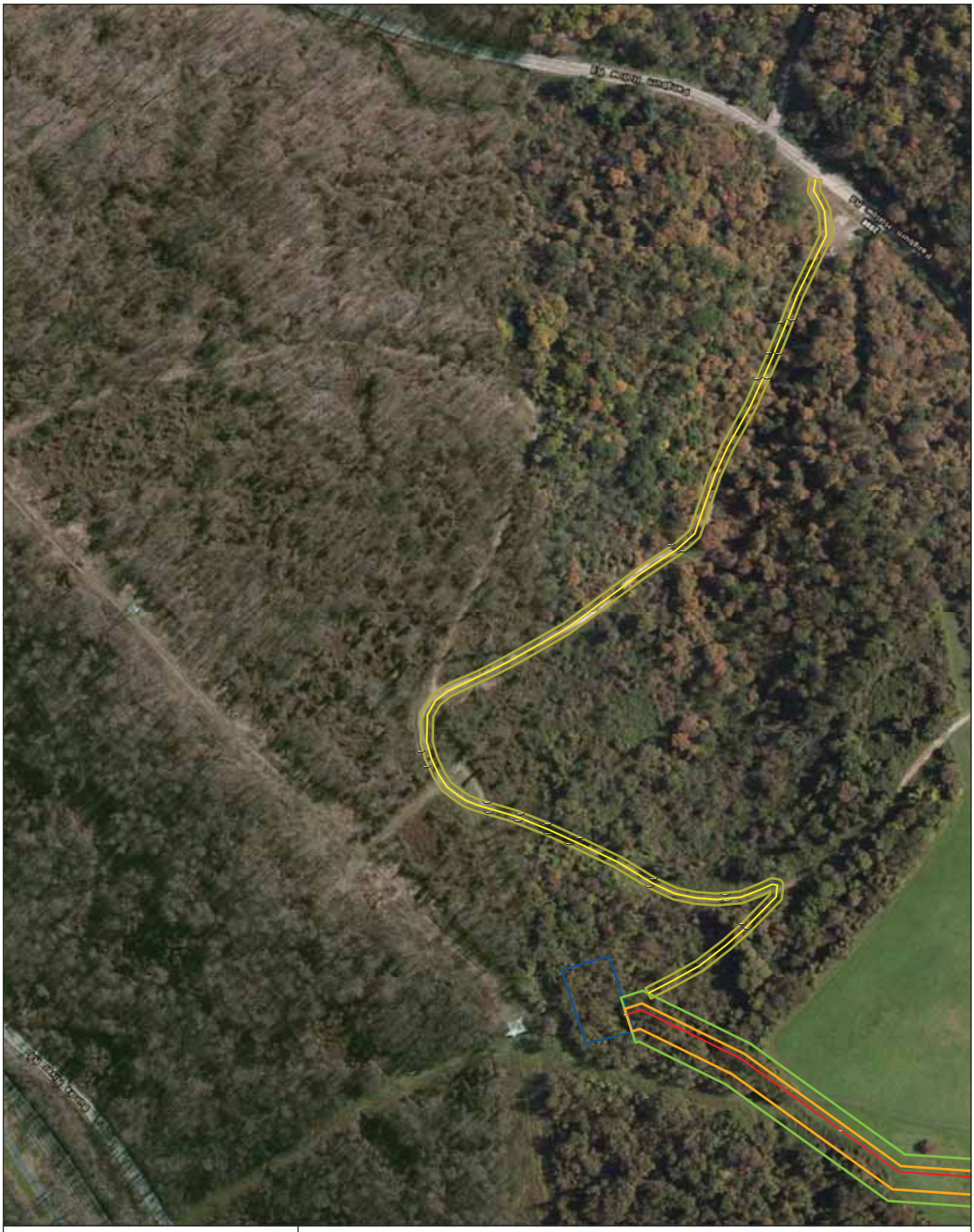


Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS℠

Attachment #: 4-10
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

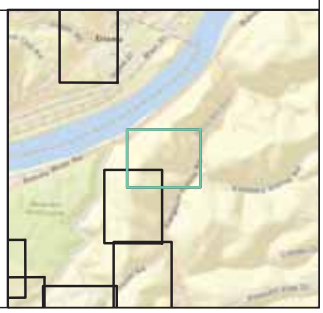
Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Culvert
- Test Pit
- Stream

Wetland

- PEM
- PFO
- Photo Location



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Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS℠

Attachment #: 4-11
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

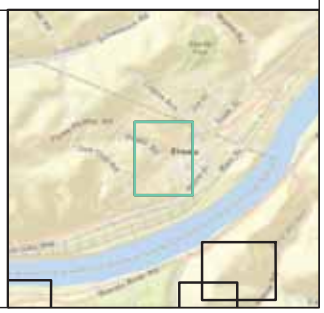
Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Culvert
- Test Pit
- Stream

Wetland

- PEM
- PFO
- Photo Location



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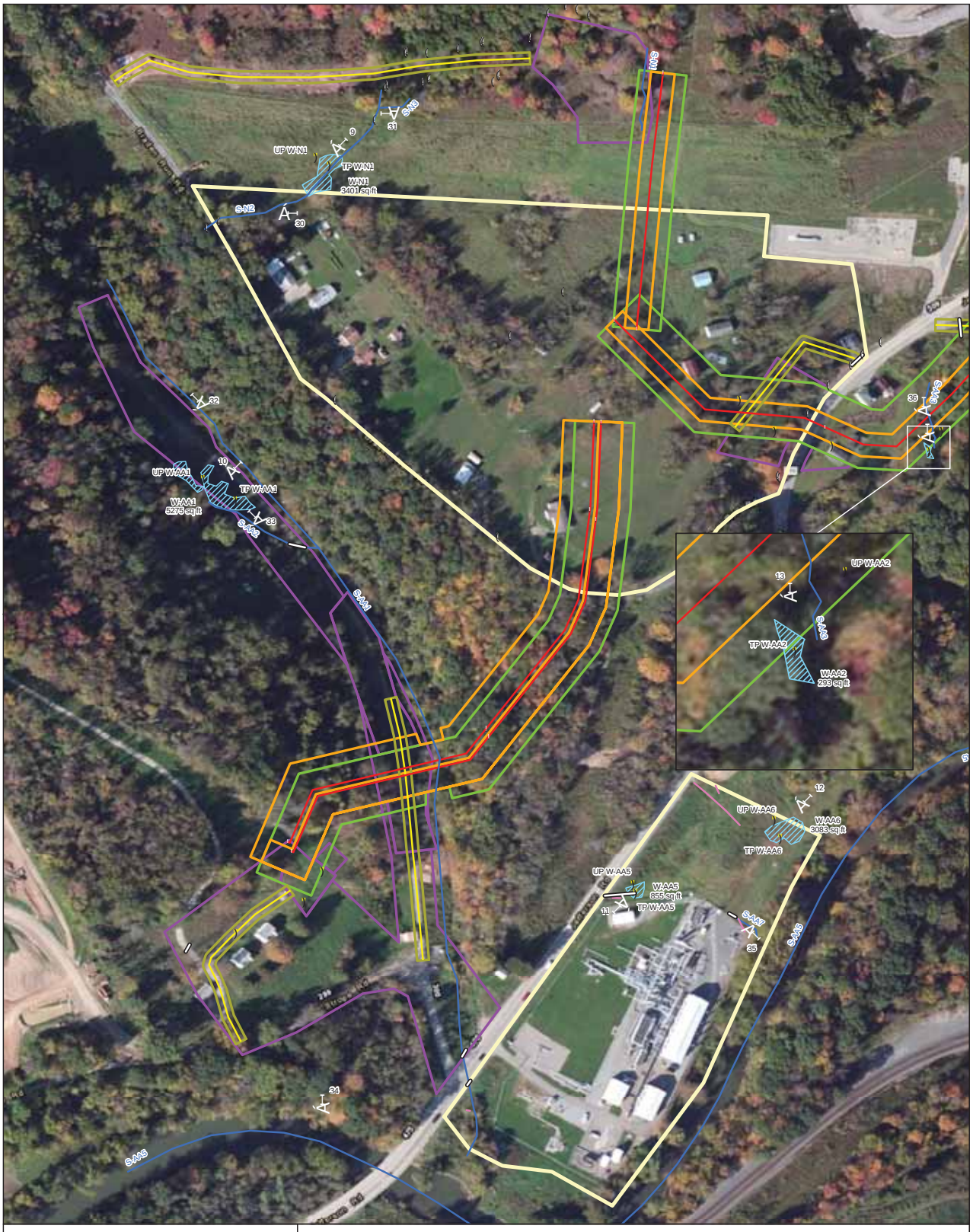


Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS

Attachment #: 4-12
USGS Project Location Map
Greene County, Pennsylvania

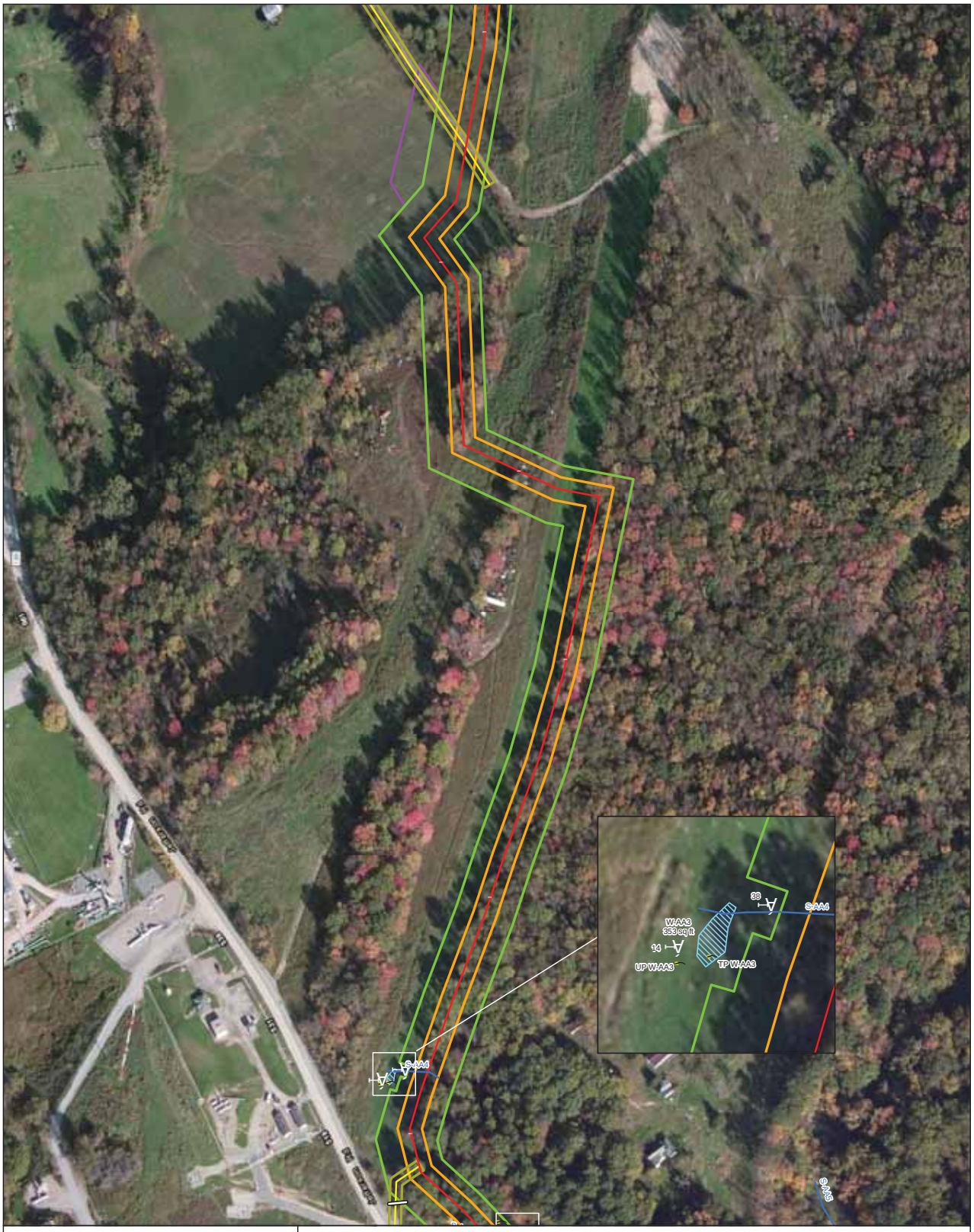
October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station
- Culvert
- Test Pit
- Stream
- Wetland
- Photo Location

Document Path: P:\GIS\EQT\MapDocs\eep_pa_greeneCo_detail.mxd



Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS

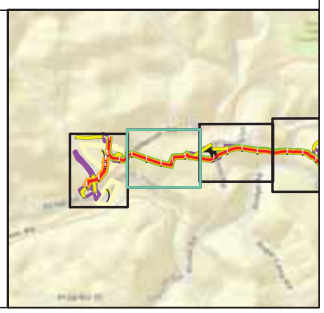
Attachment #: 4-13
USGS Project Location Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station
- Culvert
- Test Pit
- Stream
- Wetland
- Photo Location



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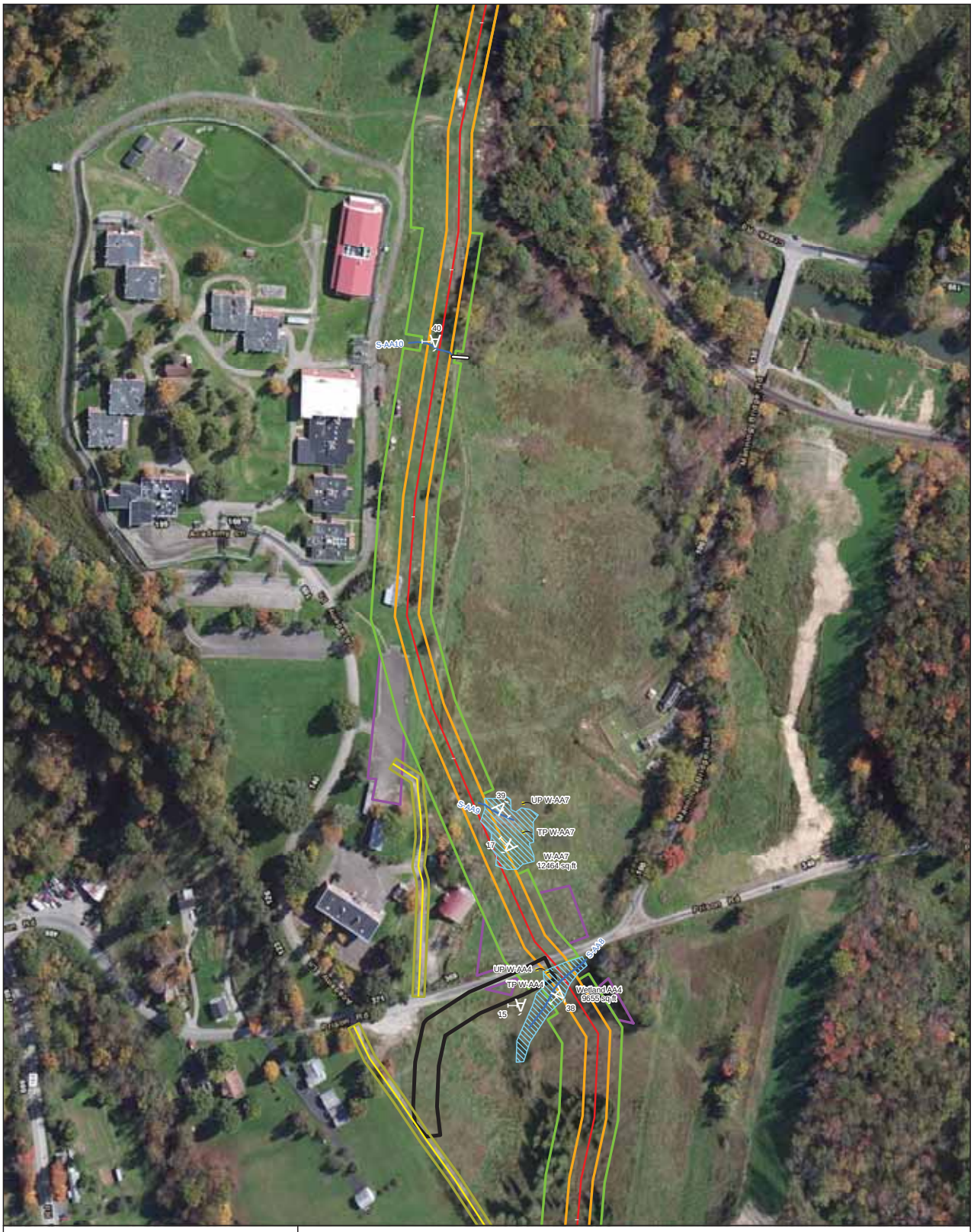


Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS℠

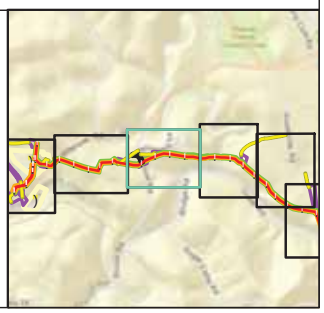
Attachment #: 4-14
USGS Project Location Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station
- Culvert
- Test Pit
- Stream
- Wetland
- Photo Location



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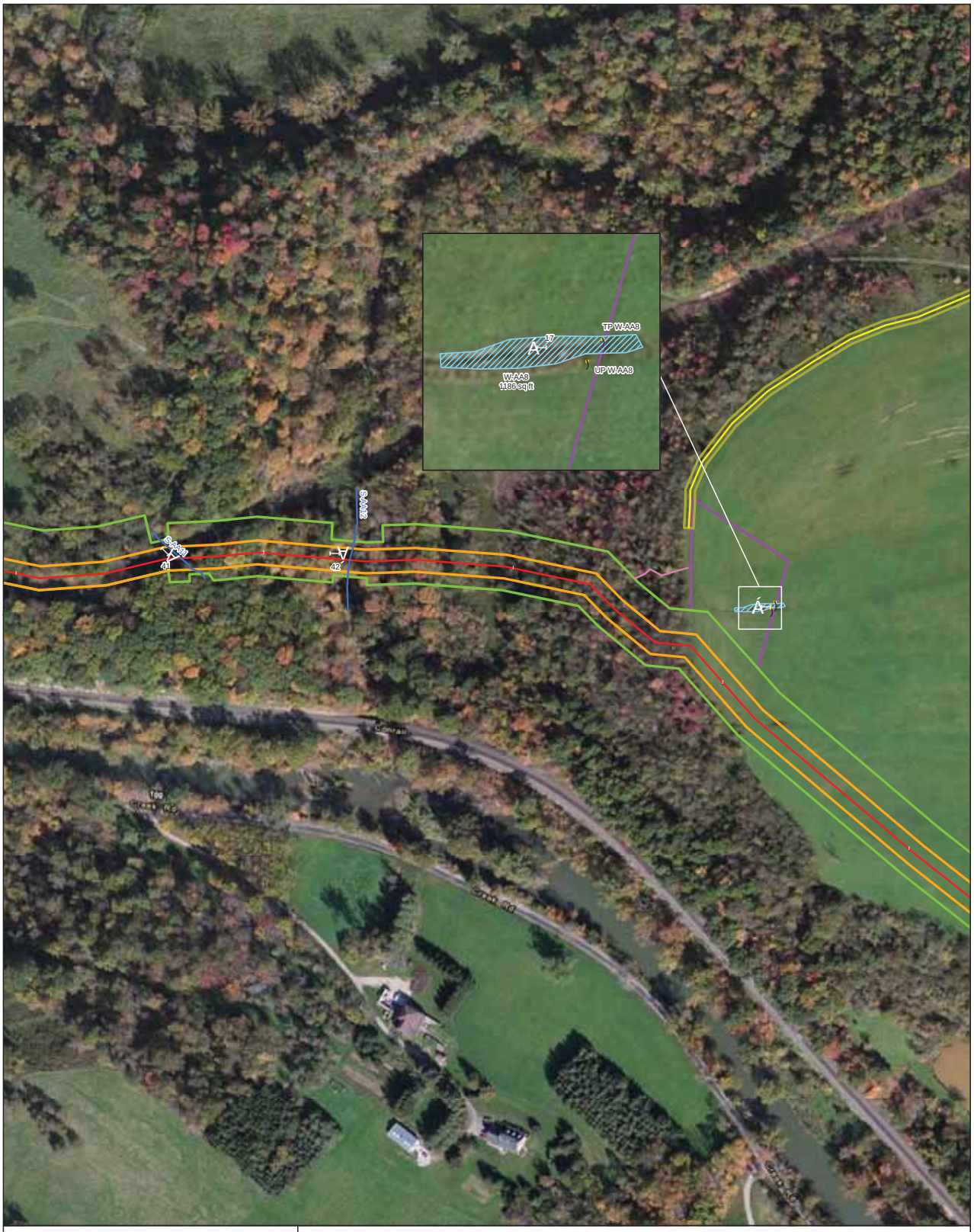


Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS℠

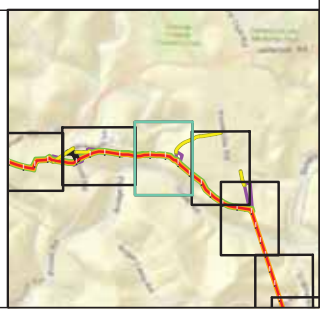
Attachment #: 4-15
USGS Project Location Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station
- Culvert
- Test Pit
- Stream
- Wetland
- Photo Location



Document Path: P:\GIS\EQT\MapDocs\eep_pa_greeneCo_detail.mxd

Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS℠

Attachment #: 4-16
USGS Project Location Map
Greene County, Pennsylvania

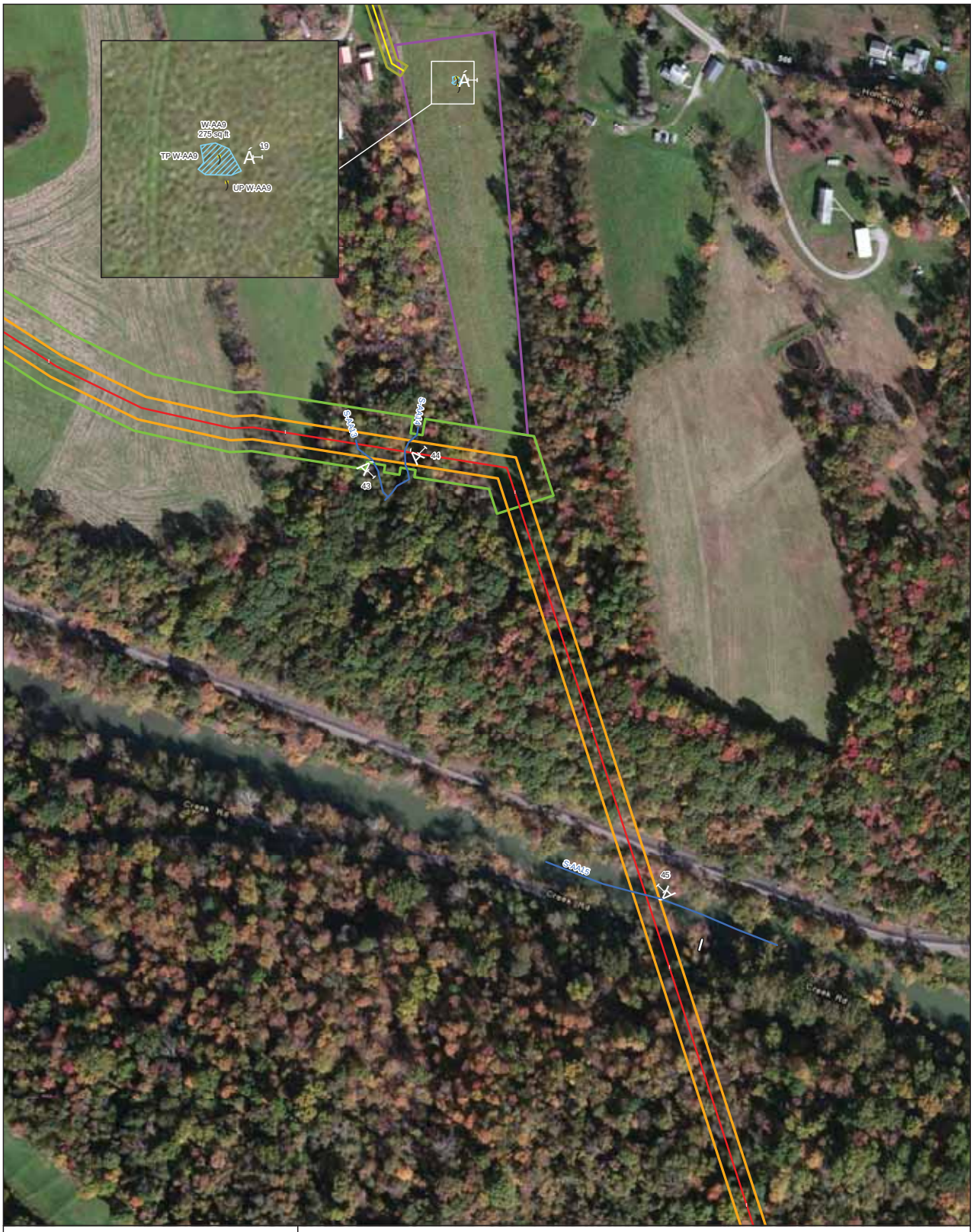
October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station
- Culvert
- Test Pit
- Stream
- Wetland
- Photo Location

Document Path: P:\GIS\EQT\MapDocs\eep_pa_greeneCo_detail.mxd



Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS℠

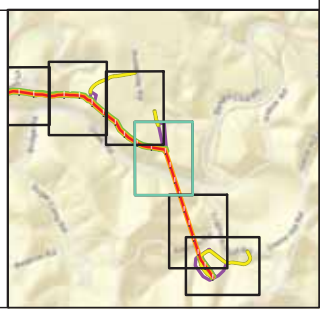
Attachment #: 4-17
USGS Project Location Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station
- Culvert
- Test Pit
- Stream
- Wetland
- Photo Location



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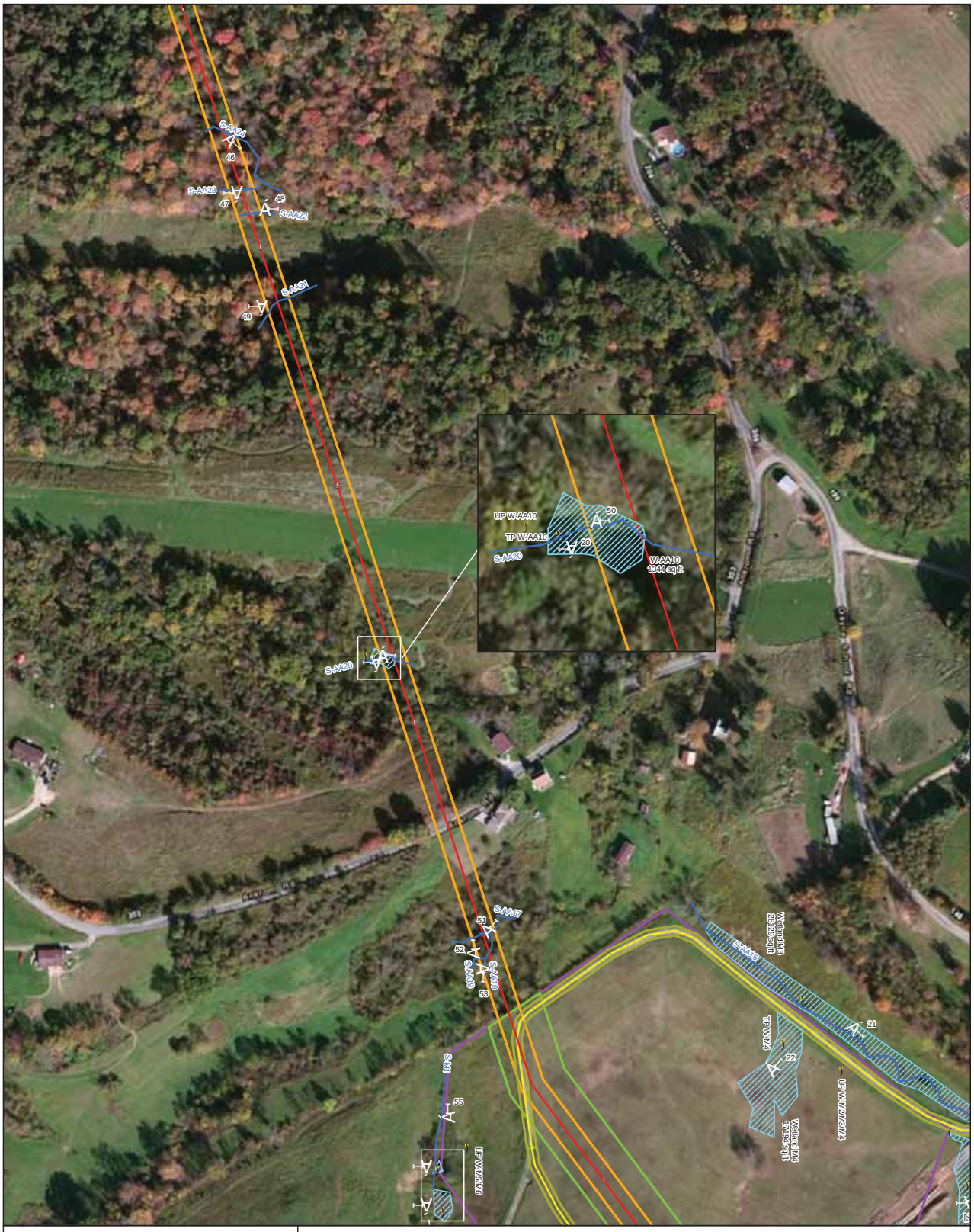


Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS℠

Attachment #: 4-18
USGS Project Location Map
Greene County, Pennsylvania

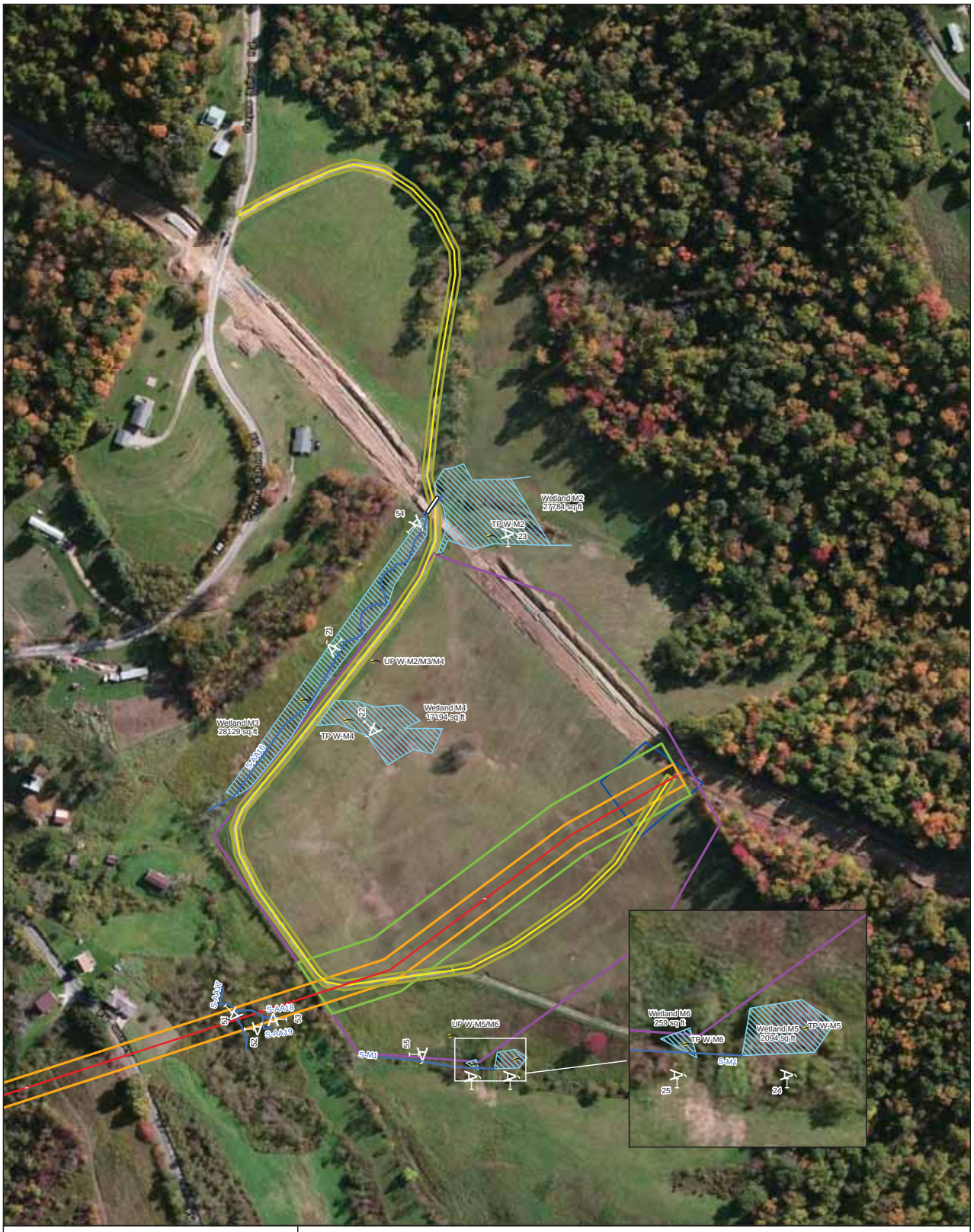
October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station
- Culvert
- Test Pit
- Stream
- Wetland
- Photo Location

Document Path: P:\GIS\EQT\Map\Docs\eep_pa_greeneCo_detail.mxd



Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS

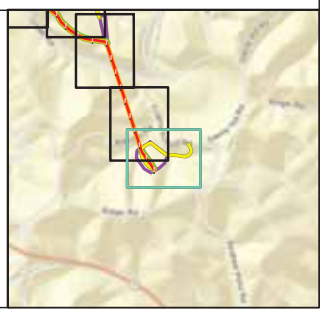
Attachment #: 4-19
USGS Project Location Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station
- Culvert
- Test Pit
- Stream
- Wetland
- Photo Location



Document Path: P:\GIS\EQT\MapDocs\eep_pa_greeneCo_detail.mxd

Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS℠

Attachment #: 4-20
USGS Project Location Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station
- Culvert
- Test Pit
- Stream
- Wetland
- Photo Location

Document Path: P:\GIS\EQT\MapDocs\eep_pa_greeneCo_detail.mxd

Equitrans Expansion Project

N

1:2,400

0 200 400 Feet

EQUITRANS

Attachment #: 4-21
Wetland Detail Map
Wetzel County, West Virginia

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Tap
- Milepost
- Compressor Station Centroid
- Alignment Centerline
- Workspace
- Temporary Right-of-Way
- Permanent Right-of-Way
- Compressor Station
- Study Area
- Culvert
- Test Pit
- Drainage Feature
- Stream
- Wetland
- Photo Direction

Document Path: P:\GIS\EQT\MapDocs\eep_wv_wetzelCo_detail1.mxd

Equitrans Expansion Project

N

1:2,400

0 200 400 Feet

EQUITRANS

Attachment #: 4-22
Wetland Detail Map
Wetzel County, West Virginia

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Tap
- Milepost
- Compressor Station Centroid
- Alignment Centerline
- Workspace
- Temporary Right-of-Way
- Permanent Right-of-Way
- Compressor Station
- Study Area
- Culvert
- Test Pit
- Drainage Feature
- Stream
- Wetland
- Photo Direction

Document Path: P:\GIS\EQT\MapDocs\esp_wv_wetzelCo_detail2.mxd

APPENDIX A
FIELD DATA SHEETS

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB1-WP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 2-5

Subregion (LRR or MLRA): LRRN Lat: 40.2552747 Long: -079.9666018 Datum: NAD 83

Soil Map Unit Name: Udorthents, smoothed gently sloping NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: Depressional
WT: NRPWW
This location is a former missile location. Soil is mostly fill material, heavily disturbed, with mounds of debris and fill

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB1-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Rumex Crispus	25	✔	FAC
2. Polygonum pensylvanicum	20	✔	FACW
3. Poa pratensis	15	✔	FACU
4. trifolium repens	10		UPL
5. Lolium perenne	10		FACU
6. Solidago altissima	10		FACU
7. seteria faberi	5		UPL
8. Plantago major	5		FACU
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	25	x 3 =	75
FACU species	40	x 4 =	160
UPL species	15	x 5 =	75
Column Totals:	100 (A)		250 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB1-WP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y3/2	100					clay loam	organics/fill material
14-18	10YR4/2	100					clay loam	fill material

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ✔ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

Problematic soils. soils contain fill material and thus soil is not hydric but is disregarded due to recent human impact to soil profile.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/09/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB3-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 3-8%

Subregion (LRR or MLRA): LRRN Lat: 40.25059174070 Long: -79.95944689370 Datum: NAD 83

Soil Map Unit Name: Dormont silt loam 8-15% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): _____
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB3-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Chamerion angustifolium	45	✔	FACU
2. Leucanthum vulgare	10		UPL
3. Trifolium hybridum	5		FACU
4. Oxalis stricta	5		FACU
5. convolvulus arvensis	5		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	5	x 3 =	15
FACU species	55	x 4 =	220
UPL species	10	x 5 =	50
Column Totals:	70 (A)		285 (B)

Prevalence Index = B/A = 4.07

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

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

SOIL Sampling Point: W-BB3-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5YR3/2	100					clay loam	
8-20	10YR4/3	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/09/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB3-WP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): >10

Subregion (LRR or MLRA): LRRN Lat: 3) 40.2506347 Long: -079.9595353 Datum: NAD 83

Soil Map Unit Name: Dormot siltloam 8-15% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: slope
WT: isolate

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 6
Water Table Present?	Yes ✔	No _____	Depth (inches): 14
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 2

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB3-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex vulpinoidea	30	✔	OBL
2. Scirpus atrovirens	20	✔	OBL
3. Alopecurus aequalis	10	✔	OBL
4. Agrostis stolonifera	10	✔	FACW
5. Solidago altissima	5		FACU
6. Rumex crispus	5		FACU
7. Chamerion angustifolium	5		FAC
8. Trifolium hybridum	5		FACU
9. Onoclea sensibilis	3		FACW
10. Asclepias incarnata	2		OBL
11. Asclepias syriaca	5		FAC
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	62	x 1 =	62
FACW species	13	x 2 =	26
FAC species	10	x 3 =	30
FACU species	15	x 4 =	60
UPL species		x 5 =	
Column Totals:	100 (A)		178 (B)

Prevalence Index = B/A = 1.78

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB3-WP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5Y3/2	95	7.5YR 4/6	5	C	M	clay loam	
12-18	10YR3/2	100					clay loam	fine gravel

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: water table

Depth (inches): 14

Hydric Soil Present? Yes ✔ No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB2-WP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): >10

Subregion (LRR or MLRA): LRRN Lat: 40.2495476 Long: -079.9578589 Datum: NAD 83

Soil Map Unit Name: Dormont silt loam 8-15% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Cowardin Code: PEM
HGM: Slope
WT: NRPWW
source of surface water unknown. Could be result of recent rains or spring located at top of hill

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No ____	Depth (inches): 6
Water Table Present?	Yes ✔	No ____	Depth (inches): 5
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 2

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB2-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex vulpinoidea	20	✔	OBL
2. Scirpus atrovirens	20	✔	OBL
3. Rumex Crispus	20	✔	FACU
4. Solidago altissima	15		FACU
5. Asclepias syriaca	15		FAC
6. Calystegia sepium	10		FAC
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	35	x 4 =	140
UPL species		x 5 =	
Column Totals:	100 (A)		215 (B)

Prevalence Index = B/A = 2.15

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB2-WP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-1	2.5Y3/1	100					muck	
1-5	2.5Y3/1	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ✔ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: water table

Depth (inches): 5

Hydric Soil Present? Yes ✔ No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/09/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB2-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): sideslope Local relief (concave, convex, none): linear Slope (%): 3-8%

Subregion (LRR or MLRA): LRRN Lat: 40.24951600180 Long: -79.95775845020 Datum: NAD 83

Soil Map Unit Name: Dormont silt loam, 8-15% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): _____
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB2-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Chamerion angustifolium	45	✔	FAC
2. Trifolium repens	15		FACU
3. Rubus trivialis	10		FACU
4. Achillea millefolium	5		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species 45	x 3 = 135
FACU species 30	x 4 = 120
UPL species	x 5 =
Column Totals: 75 (A)	255 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL

Sampling Point: W-BB2-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR3/2	100					clay loam	organic
12-18	10YR5/4	100					clay loam	red/gray mottles

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/13/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB13

Investigator(s): A Lands, S Cowell, T Caddy, Section, Township, Range: NA

Landform (hillslope, terrace, etc.): toeslope/depression Local relief (concave, convex, none): concave Slope (%): <5

Subregion (LRR or MLRA): LRRN Lat: 40.238567 Long: -79.944506 Datum: NAD 83

Soil Map Unit Name: Urban land-Rainsboro complex, gently sloping NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil ✔, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
PFO/PSS
Depressional
RPWWD
large depressional area located between RR tracks and roadway. Some saturation present, soil is predominantly coal,

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ✔ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): _____
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
some areas are saturated, however no H2S odor was detected.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB13

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	10	✔	FAC
2. Acer rubrum	10	✔	FAC
3.			
4.			
5.			
6.			
7.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Sapling/Shrub Stratum (Plot size: 15')			
1. Ligustrum sinense	5	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5')			
1. Pilea pumila	15	✔	FACW
2. Podophyllum peltatum	10	✔	FACU
3. Urtica dioica	5	✔	FACU
4. Microstegium vimineum	5	✔	FAC
5. Impatiens pallida	5	✔	FACW
6. Athyrium felix-femina	2		FAC
7. Potentilla simplex	2		FACU
8. Gallium asprellum	2		OBL
9. Onoclea sensibilis	2		OBL
10. Oxalis stricta	2		FACU
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 15')			
1. Toxicodendron radicans	5	✔	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	4	x 1 =	4
FACW species	20	x 2 =	40
FAC species	36	x 3 =	108
FACU species	24	x 4 =	96
UPL species		x 5 =	
Column Totals:	84 (A)		248 (B)

Prevalence Index = B/A = 2.95

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB13

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	10YR3/2	100					clay loam	fill gravel washed from road
3-16	10YR3/1	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ✔ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

Wetland situated on soil derived from dark coal floodplain. NRCS soil map unit name is urban land-Rainsboro complex, gently sloping (URB). Soil listed as hydric.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/13/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB13-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): convex Slope (%): 3-5

Subregion (LRR or MLRA): LRRN Lat: 40.23873789560 Long: -79.94489288190 Datum: NAD 83

Soil Map Unit Name: Urban land-Rainsboro complex sloping NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil ✔, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): _____
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB13-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	10	✔	FAC
2. Acer rubrum	10	✔	FAC
3.			
4.			
5.			
6.			
7.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Impatiens pallida	15	✔	FACW
2. Urtica dioica	15	✔	FACU
3. Cardamine dyphalla	10		FACU
4. Anemone virginiana	5		FACU
5. Podophyllum peltatum	5		FACU
6. Microstegium vimineum	5		FAC
7. Athyrium felix-femina	2		FAC
8.			
9.			
10.			
11.			
	57 = Total Cover		
50% of total cover: 28.5	20% of total cover: 11.4		
Woody Vine Stratum (Plot size: 15')			
1. Toxicodendron radicans	5	✔	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species	15	x 2 =	30
FAC species	32	x 3 =	96
FACU species	35	x 4 =	140
UPL species		x 5 =	
Column Totals:	82 (A)		266 (B)

Prevalence Index = B/A = 3.24

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB13-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	10YR4/1	100					clay loam	
4-16	10YR6/3	100					sand	fill material (near railroad berm)

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ✔ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

situated on soil derived from dark coal floodplain. NRCS soil map unit name is urban land-Rainsboro complex, gently sloping (URB).

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB11-WP

Investigator(s): A Lands, S Cowell, T Caddy, J Akalaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope (%): <10

Subregion (LRR or MLRA): LRRN Lat: 40.2368791 Long: -079.9457451 Datum: NAD 83

Soil Map Unit Name: Strip mines 25-75% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Cowardin Code: PFO
HGM: slope
WT: RPWWN

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB11-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	30	✔	FAC
2. Fagus grandifolia	10	✔	FACU
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Sapling/Shrub Stratum (Plot size: 15')			
1. Acer rubrum	40	✔	FAC
2. Lonicera sp.	10		FAC
3. Fagus grandifolia	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Herb Stratum (Plot size: 5')			
1. Pilea pumila	60	✔	FACW
2. Athyrium felix-femina	5		FAC
3. Anemone virginiana	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	25	x 3 =	75
FACU species	15	x 4 =	60
UPL species		x 5 =	
Column Totals:	100 (A)		255 (B)

Prevalence Index = B/A = 2.55

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB11-WP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR3/1	100					clay loam	muck/organic
1-18	10YR4/3	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ✔ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

H2S odor slight

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB11-WP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hillside Local relief (concave, convex, none): none Slope (%): >5

Subregion (LRR or MLRA): LRRN Lat: 40.23685127460 Long: -79.94571985080 Datum: NAD 83

Soil Map Unit Name: Strip mines 25-75% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): _____
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB11-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	20	✔	FAC
2. Fagus grandifolia	15		FACU
3.			
4.			
5.			
6.			
7.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Podophyllum peltatum	15	✔	FACU
2. Pilea pumila	10		FACW
3. Anemone virginiana	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 15')			
1. Rubus pensylvanicus	10	✔	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species	10	x 2 =	20
FAC species	30	x 3 =	90
FACU species	35	x 4 =	140
UPL species		x 5 =	
Column Totals:	75 (A)		250 (B)

Prevalence Index = B/A = 3.33

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL

Sampling Point: W-BB11-WP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR2.5/2	100					clay loam	organic
4-16	10YR4/3	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB10-WP

Investigator(s): A Lands, S Cowell, T Caddy, J Akalaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope (%): <5

Subregion (LRR or MLRA): LRRN Lat: 40.2335633 Long: -079.9437277 Datum: NAD 83

Soil Map Unit Name: Strip mines, 8-25% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Cowardin Code: PFO
HGM: slope
WT: NRPWW

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No ____	Depth (inches): 8
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
Skippers observed

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB10-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	25	✔	FAC
2. Fagus grandifolia	10	✔	FACU
3.			
4.			
5.			
6.			
7.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Sapling/Shrub Stratum (Plot size: 15')			
1. Lonicera sp.	10	✔	FAC
2. Acer rubrum	10	✔	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5')			
1. Microstegium vimenium	20	✔	FAC
2. Pilea pumila	10	✔	FACW
3. Dicanthelium clandestinum	10	✔	FAC
4. Athyrium felix-femina	5		FAC
5. Solidago altissima	5		FACU
6. Gallium asprellum	3		OBL
7. Anemone virginiana	2		FACU
8.			
9.			
10.			
11.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 15')			
1. Rubus pensylvanicum	5	✔	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	3
FACW species	10	x 2 =	20
FAC species	60	x 3 =	180
FACU species	12	x 4 =	48
UPL species		x 5 =	
Column Totals:	85 (A)		251 (B)

Prevalence Index = B/A = 2.95

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB10-WP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/2	95	7.5YR 4/6	5	C	M	clay loam	
6-18	10YR5/4	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB10-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): none Slope (%): 2-4

Subregion (LRR or MLRA): LRRN Lat: 40.23353475400 Long: -79.94372414120 Datum: NAD 83

Soil Map Unit Name: Strip mine 8-25% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): _____
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB10-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Fagus grandifolia	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Sapling/Shrub Stratum (Plot size: 15')			
1. Lonicera Sp.	15	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 5')			
1. Microstegium vimenium	20	✔	FAC
2. Podophyllum peltatum	15		FACU
3. Anemone virginiana	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	35	x 3 =	105
FACU species	40	x 4 =	160
UPL species		x 5 =	
Column Totals:	80 (A)		265 (B)

Prevalence Index = B/A = 3.31

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB10-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-1	10YR3/2	100					clay loam	organic
1-16	10YR4/2	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB9-WP

Investigator(s): A Lands, S Cowell, T Caddy, J Akalaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2-4

Subregion (LRR or MLRA): LRRN Lat: 40.2332639 Long: -079.9434972 Datum: NAD 83

Soil Map Unit Name: Strip mine, 8-25% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PFO
HGM: Depressional
WT: NRPWW

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ✔ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 6
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Skippers, crawfish, frogs observed

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB9-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	20	✔	FAC
2. Fagus grandifolia	15	✔	FACU
3.			
4.			
5.			
6.			
7.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Sapling/Shrub Stratum (Plot size: 5')			
1. Lonicera Sp.	10	✔	ND
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5')			
1. Podolphyllum peltatum	15	✔	FACU
2. Onoclea sensibilis	10	✔	FACW
3. Microstegium vimenium	10	✔	FAC
4. Gallium asprellum	5		OBL
5. Anemone virginiana	5		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	10	x 2 =	20
FAC species	35	x 3 =	105
FACU species	35	x 4 =	140
UPL species		x 5 =	
Column Totals:	85 (A)		270 (B)

Prevalence Index = B/A = 3.18

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

ND - Not Determined.

* Vegetation not ID'd to species level not included in dominance test.

SOIL Sampling Point: W-BB9-WP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR4/1	95	7.5YR 4/6	50%	C	M	clay loam	organic
8-18	10YR5/6	100					loamy clay	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB9-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): none Slope (%): 2-4

Subregion (LRR or MLRA): LRRN Lat: 40.23320910830 Long: -79.94352205020 Datum: NAD 83

Soil Map Unit Name: Strip mines 8-25% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): _____
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB9-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	20	✔	FAC
2. Fagus grandifolia	10		FACU
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Sapling/Shrub Stratum (Plot size: 15')			
1. Lonicera sp.	15	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 5')			
1. Podophyllum peltatum	15	✔	FACU
2. Anemone virginiana	5		FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species 35	x 3 = 105
FACU species 30	x 4 = 120
UPL species	x 5 =
Column Totals: 65 (A)	225 (B)

Prevalence Index = B/A = 3.46

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB9-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/2	100					clay loam	
6-18	10YR5/6	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB8-WP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): none Slope (%): >10

Subregion (LRR or MLRA): LRRN Lat: 40.2329197 Long: -079.9423036 Datum: NAD 83

Soil Map Unit Name: Strip mines, 25-75% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** **Yes** ✓ **No** ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Cowardin Code: PFO
HGM: Slope
WT: NRPWW

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✓ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): ____

Wetland Hydrology Present? **Yes** ✓ **No** ____

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

Remarks:
slight H2S odor

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB8-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	10	✓	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Sapling/Shrub Stratum (Plot size: 15')			
1. Lonicera sp.	10	✓	ND
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5')			
1. Pilea pumila	30	✓	FACW
2. microstegium vinemeum	10		FAC
3. Onoclea sensibilis	10		FACW
4. Gallium asprellum	5		OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 15')			
1. Rubus pensylvanicum	10	✓	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	40	x 2 =	80
FAC species	40	x 3 =	120
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	85 (A)		205 (B)

Prevalence Index = B/A = 2.41

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ✓ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

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

SOIL Sampling Point: W-BB8-WP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR4/2	100					clay loam	organic
8-16	10YR5/6	100					CL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

Strip mines, 25-75% slope

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB8-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): plateau Local relief (concave, convex, none): concave Slope (%): 2-4

Subregion (LRR or MLRA): LRRN Lat: 40.23287489100 Long: -79.94221357790 Datum: NAD 83

Soil Map Unit Name: Strip mines 25-45% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB8-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	20	✓	FAC
2. Fagus grandifolia	15		FACU
3.			
4.			
5.			
6.			
7.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Sapling/Shrub Stratum (Plot size: 15')			
1. Lonicera sp	15	✓	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 5')			
1. Athyrium felix-femina	10	✓	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	45	x 3 =	135
FACU species	15	x 4 =	60
UPL species		x 5 =	
Column Totals:	60 (A)		195 (B)

Prevalence Index = B/A = 3.25

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

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

SOIL Sampling Point: W-BB8-UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/3	100					clay loam	organic
4-18	10YR3/3	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB7-WP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): _____ Slope (%): <5

Subregion (LRR or MLRA): LRRN Lat: 40.2306361 Long: -079.9359447 Datum: NAD 83

Soil Map Unit Name: Rainsboro silt loam 3-8% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: slope
WT: NRPWW
location of former strip mine, remediated. Surface riddled with "potholes" of varying sizes, all filled with water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 6
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 2

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB7-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 10')			
1. Agrostis stolonifera	25	✔	FACW
2. Carex stipata	10	✔	OBL
3. Juncus tenuis	10	✔	FAC
4. Chamerion angustifolium	5		FAC
5. Alopecurus aequalis	5		OBL
6. Solanum carolinense	2		FACU
7. Calystegia pubescens	2		FACU
8. Hypericum perforatum	1		FAC
9. Gallium asprellum	1		OBL
10. Convolvulus arvensis	2		UPL
11. Asclepias syriaca	2		FACU
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Woody Vine Stratum (Plot size: 10')			
1. Toxicodendron radicans	10	✔	FAC
2. Rubus pensylvanicus	10	✔	FAC
3.			
4.			
5.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	16	x 1 =	16
FACW species	25	x 2 =	50
FAC species	36	x 3 =	108
FACU species	6	x 4 =	24
UPL species	2	x 5 =	10
Column Totals:	85 (A)		208 (B)

Prevalence Index = B/A = 2.44

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB7-WP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/3	100					clay loam	organic
6-18	10YR5/4	95	2.5YR 4/6	5			loamy clay	red mottles

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

Rainsboro silt loam 3-8% slope

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB7-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): plateau Local relief (concave, convex, none): concave Slope (%): 3-5

Subregion (LRR or MLRA): LRRN Lat: 40.23057348320 Long: -79.93577201000 Datum: NAD 83

Soil Map Unit Name: Rainsboro silt loam, 3-8% NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB7-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Agrostis stolonifera	35	✓	FACW
2. Chamerion angustifolium	15		FAC
3. Convolvulus arvensis	5		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 15')			
1. Rubus pensylvanicus	10	✓	FAC
2. Toxicodendron radicans	5		FAC
3.			
4.			
5.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species	35	x 2 =	70
FAC species	35	x 3 =	105
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	70 (A)		175 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ✓ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

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

SOIL

Sampling Point: W-BB7-UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR4/3						clay loam	organic
5-20	10YR5/3						loamy clay	red/gray mottles

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB6-WP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): none Slope (%): <8

Subregion (LRR or MLRA): LRRN Lat: 40.2295701 Long: -079.9346449 Datum: NAD 83

Soil Map Unit Name: Culleoka-Weikert Shaly silt loams NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Cowardin Code: PEM
HGM: slope
WT: RPWWN
location of former strip mine, remediated. Surface riddled with "potholes" of varying sizes, all filled with water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No ____	Depth (inches): 7
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 2

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
very slight H2S odor

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB6-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Agrostis stolonifera	55	✔	FACW
2. juncus tenuis	10		FAC
3. Chamerion angustifolium	5		FAC
4. Alopecurus aequalis	5		OBL
5. sorghum halepense	5		FACU
6. convolvulus arvensis	5		UPL
7.			
8.			
9.			
10.			
11.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Woody Vine Stratum (Plot size: 5')			
1. Toxicodendron radicans	5	✔	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	55	x 2 =	110
FAC species	20	x 3 =	60
FACU species	5	x 4 =	20
UPL species	5	x 5 =	25
Column Totals:	90 (A)		220 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ✔ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

mostly reclaimed vegetation

SOIL Sampling Point: W-BB6-WP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR4/3	100					LC	organic
5-20	10YR4/2	95	2.5YR 4/6	5	C	M	LC	red/gray mottles

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

Culleoka-Weikert Shaly silt loams

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB6-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): plateau Local relief (concave, convex, none): concave Slope (%): 2-5

Subregion (LRR or MLRA): LRRN Lat: 40.22963424210 Long: -79.93481801570 Datum: NAD 83

Soil Map Unit Name: Culleoka-weikert shaly silt loams, 1-15% NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB6-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Asclepias lanceolata	10	✓	FACU
2. Daucus carota	10		FACU
3. Convolvulus arvensis	5		FACU
4. toxicodendron radicans	5		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 15')			
1. Rubus pensylvanicus	15	✓	FAC
2.			
3.			
4.			
5.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	
FACW species	0	x 2 =	
FAC species	20	x 3 =	60
FACU species	25	x 4 =	100
UPL species		x 5 =	
Column Totals:	45 (A)		160 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

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

SOIL

Sampling Point: W-BB6-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR4/3	100					CL	
7-12	10YR4/4	100					CL	
12-16	2.5Y5/2	100					CL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/13/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB12-WP

Investigator(s): A Lands, S Cowell, T Caddy, Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): <10

Subregion (LRR or MLRA): LRRN Lat: 40.2260 Long: -79.9287 Datum: NAD 83

Soil Map Unit Name: Dormont silt loam, 3-8% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
PEM
slope
isolate
surface disturbed by heavy equipment

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✔ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No ____	Depth (inches): 4
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB12-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Scirpus atrovirens	50	✔	OBL
2. Juncus tenuis	15		FAC
3. Trifolium repens	10		FACU
4. Trifolium hybridum	10		FACU
5. Polygonum pensylvanicum	5		FACW
6. microstegium vimineum	5		FAC
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	5	x 2 =	10
FAC species	15	x 3 =	45
FACU species	20	x 4 =	80
UPL species		x 5 =	
Column Totals:	90 (A)		185 (B)

Prevalence Index = B/A = 2.06

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB12-WP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y4/2	95	7.5YR 5/4	5	C	M	clay loam	
6-12	2.5Y4/1	95	7.5YR 5/4	5	C	M	loamy clay	
12-18	2.5Y4/2	100					loamy clay	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

Dormont silt loam, 3-8% slopes

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/13/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB12-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy Section, Township, Range: NA

Landform (hillslope, terrace, etc.): sideslope Local relief (concave, convex, none): linear Slope (%): 6-10

Subregion (LRR or MLRA): LRRN Lat: 40.22588000040 Long: -79.92900000030 Datum: NAD 83

Soil Map Unit Name: Dormont silt loam 15-25% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil ✓, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB12-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Trifolium repens	35	✓	FACU
2. Trifolium hybridum	10		FACU
3. Lolium perenne	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species 50	x 4 =	200
UPL species	x 5 =	
Column Totals: 50 (A)		200 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

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

SOIL

Sampling Point: W-BB12-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5Y4/4	100					clay loam	loamy clay

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB5-WP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): toe slope Local relief (concave, convex, none): none Slope (%): 3-5

Subregion (LRR or MLRA): LRRN Lat: 40.2491980 Long: -079.9294342 Datum: NAD 83

Soil Map Unit Name: Glenford silt loam, 3-8% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: depressional
WT: RPWWN
man made obstructions present, mostly fill material

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 5
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB5-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Scirpus atrovirens	20	✔	OBL
2. Juncus tenuis	15	✔	FAC
3. Dichanthelium clandestinum	15	✔	FAC
4. Carex cristatella	10		FACW
5. agrostis stolonifera	10		FACW
6. Chamerion angustifolium	10		FAC
7. rumex crispus	5		FAC
8.			
9.			
10.			
11.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	20	x 2 =	40
FAC species	45	x 3 =	135
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	85 (A)		195 (B)

Prevalence Index = B/A = 2.29

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB5-WP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y4/2	50					clay loam	
0-6	Gley 4/10Y	50					clay loam	
6-12	2.5Y5/4	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ✔ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

Glenford silt loam, 3-8% slope
fill material present

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB5-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): valley bottom Local relief (concave, convex, none): none Slope (%): 2-4

Subregion (LRR or MLRA): LRRN Lat: 40.24917854360 Long: -79.92963309210 Datum: NAD 83

Soil Map Unit Name: Udortents smoothed, gently sloping NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB5-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Chamerion angustifolium	20	✓	FAC
2. Artemesia vulgaris	15	✓	UPL
3. Daucus carota	10		FACU
4. Dipascus fullonum	10		FACU
5. Mellilotus albus	10		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	20	x 3 =	60
FACU species	30	x 4 =	120
UPL species	15	x 5 =	75
Column Totals:	65 (A)		255 (B)

Prevalence Index = B/A = 3.92

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

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

SOIL Sampling Point: W-BB5-UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR3/3	100					clay loam	
2-16	10YR4/3	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB4-WP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 40.2542043 Long: -079.9262158 Datum: NAD 83

Soil Map Unit Name: Dormant-Culleoka Complex 15-25% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ✔, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Cowardin Code: PEM
HGM: isolated
WT: Depressional
located behind gas station. UST's are present as well as man made obstructions

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ✔ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No ____ Depth (inches): <5

Water Table Present? Yes ____ No ✔ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ✔ Depth (inches): ____

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB4-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. carex stipata	40	✔	OBL
2. juncus tenuis	20	✔	FAC
3. agrostis stolonifera	15		FACW
4. Chloris virgata	10		FAC
5. trifolium hybridum	5		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	15	x 2 =	30
FAC species	30	x 3 =	90
FACU species	5	x 4 =	20
UPL species		x 5 =	
Column Totals:	90 (A)		180 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ✔ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB4-WP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR3/2	95	7.5YR 4/6	5	C	M	clay loam	
5-18	10YR4/3	100					clay loam	fill material w/ coarse gravel

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ____

Remarks:

Dormant-Culleoka Complex 15-25% slopes, mostly fill material

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB4-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): terraced hillslope Local relief (concave, convex, none): concave Slope (%): 3-8%

Subregion (LRR or MLRA): LRRN Lat: 40.25399999960 Long: -79.92622000020 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 15-15% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB4-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Trifolium hybridum	15	✓	FACU
2. Cichorium intybus	10	✓	FACU
3. oxalis stricta	5		FACU
4. plantago major	5		FACU
5. Coronilla varia	5		FAC
6. lotus corniculatus	5		FACU
7. plantago lanceolata	5		FACU
8. taraxacum officianale	5		FACU
9.			
10.			
11.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	5	x 3 =	15
FACU species	50	x 4 =	200
UPL species		x 5 =	
Column Totals:	55 (A)		215 (B)

Prevalence Index = B/A = 3.91

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

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

SOIL Sampling Point: W-BB4-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/2	100					clay loam	
6-20	10YR4/3	100					clay loam	fill material w/ coarse gravels

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Red Hook Compressor Station City/County: Greene Sampling Date: 06/09/2015

Applicant/Owner: EQT State: PA Sampling Point: W-N1

Investigator(s): JH, LM, JK Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR or MLRA): LRRN Lat: 39.91772914740 Long: -80.13069448700 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 4

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-N1

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Juncus effusus	70	✓	FACW
2. Asclepias incarnata	10		OBL
3. Carex lurida	5		OBL
4. Phalaris arundinaceae	2		FACW
5. Carex vulpinoidea	10		OBL
6. Impatiens capensis	5		FACW
7.			
8.			
9.			
10.			
11.			
	102 = Total Cover		
50% of total cover: 51	20% of total cover: 20.4		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

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

SOIL Sampling Point: W-N1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-17	10YR 5/2	80	10YR 6/8	10		M	SC	
			10YR 6/1	10	D	M		

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Red Hook Compressor Station City/County: Greene Sampling Date: 06/09/2015

Applicant/Owner: EQT State: PA Sampling Point: W-N1 UP

Investigator(s): JH, LM, JK Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 5

Subregion (LRR or MLRA): LRRN Lat: 39.91777586110 Long: -80.13079854330 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-N1 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Solidago altissima	30	✔	FACU
2. Trifolium pratense	5		FACU
3. Trifolium aureum	25	✔	UPL
4. Allium sp.	2		
5. Lotus corniculatus	10		FACU
6. Galium aparine	10		FACU
7. Melilotus officinalis	2		FACU
8.			
9.			
10.			
11.			
	84 = Total Cover		
50% of total cover: 42	20% of total cover: 16.8		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

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

SOIL Sampling Point: W-N1 UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-19	10YR 6/2	100					SC	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA1

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR or MLRA): LRRN Lat: 39.91576824580 Long: -80.13133243640 Datum: NAD 83

Soil Map Unit Name: Newark silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:

Cowardin Code: PEM
HGM: Riverine
WT: RPWWD
Large mound in middle of wetland. S-AA2 feeds W-AA1. Stream is dammed by road creating wetland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ✔	No ____	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0-10

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:

Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA1

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1. Platanus occidentalis	5	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5')			
1. Carex vulpinoidea	60	✔	OBL
2. Scirpus cyperinus	20		FACW
3. Scirpus atrovirens	5		OBL
4. Eupatorium perfoliatum	20		FACW
5. Agrimonia parviflora	15		FACW
6. Solidago gigantea	5		FACW
7. Amphicarpaea bracteata	30	✔	FAC
8. Dipsacus laciniatus	5		FACU
9.			
10.			
11.			
	160 = Total Cover		
50% of total cover: 80	20% of total cover: 32		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-AA1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 4/2	100					SCL	
3-10	10YR 5/1	93	10YR 3/6	2	RM	M/PL	SCL	
3-10	10YR 4/2	5						
10-20	10YR 5/6	100					SCL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA1 UP

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5

Subregion (LRR or MLRA): LRRN Lat: 39.91589062750 Long: -80.13158042460 Datum: NAD 83

Soil Map Unit Name: Newark silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No ✔	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ____	No ✔	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:
Upland
Heavy rainfall for 4 days before and during surveys. Several streams in survey area were flooded.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✔

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

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA1 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Erigeron annuus	15		FACU
2. Potentilla indica	30	✔	FACU
3. Trifolium pratense	10		FACU
4. Daucus carota	15		UPL
5. Alliaria petiolata	5		FACU
6. Carex sp.	30	✔	ND
7. Ranunculus sp.	5		ND
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	60	x 4 =	240
UPL species	15	x 5 =	75
Column Totals:	75 (A)		315 (B)

Prevalence Index = B/A = 4.2

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

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

ND- Not determined.

SOIL Sampling Point: W-AA1 UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-19	10YR 4/2	85					SCL	
	10YR 5/3	10						
	10YR 8/6	5						

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA5

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope/depression Local relief (concave, convex, none): None Slope (%): 5

Subregion (LRR or MLRA): LRRN Lat: 39.91355442740 Long: -80.12824347210 Datum: NAD 83

Soil Map Unit Name: Dekalb channery loam, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: Isolate
WT: RPWWN

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes ✔	No _____	Depth (inches): 1
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA5

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Poa sp.	80	✔	ND
2. Phalaris arundinacea	10		FACW
3. Poa trivialis	10		FACW
4. Daucus carota	5		UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	105 = Total Cover		
50% of total cover: 52.5	20% of total cover: 21		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

✔ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

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

Wetland with problematic hydrophytic vegetation Wetland is adjacent to Pratt Compressor Station (industrial area.) Ajacent drainage does not have bed or bank to make it a stream. Wetland fed by groundwater and rain events making it a slope wetland. Upland soils north and east of the wetland make it isolate.

ND - Not Determined.

* Vegetation not ID'd to species level not included in dominance test.

SOIL Sampling Point: W-AA5

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-17	2.5Y 5/1	70	10YR 5/6	10	D	M	SC	
0-17	7.5YR 3/1	20						

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA5 UP

Investigator(s): JH, LM, LS, CL Section, Township, Range: NAD 83

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5

Subregion (LRR or MLRA): LRRN Lat: 39.91360410120 Long: -80.12826299710 Datum: NAD 83

Soil Map Unit Name: Dekalb channery loam, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Hydric soil is present but lack of hydrology and vegetation makes this an upland sample plot.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA5 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Lotus corniculatus	40	✔	FACU
2. Dipsacus laciniatus	50	✔	UPL
3. Securigera varia	20		UPL
4. Cirsium arvense	5		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	115 = Total Cover		
50% of total cover: 57.5	20% of total cover: 23		
Woody Vine Stratum (Plot size: 15')			
1. Vitis riparia	5	✔	FACW
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	45	x 4 =	180
UPL species	70	x 5 =	350
Column Totals:	120 (A)		540 (B)

Prevalence Index = B/A = 4.5

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

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

SOIL

Sampling Point: W-AA5 UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-19	7.5YR4/2	95	10 YR5/6	5	C	M	SCL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

Hydric soil but no hydrology or hydrophytic dominant vegitation.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA6

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope/Depression Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR or MLRA): LRRN Lat: 39.91389543370 Long: -80.12716311240 Datum: NAD 83

Soil Map Unit Name: Huntington silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: Isolated
WT: RPWWN
Groundwater from W-AA6 flows into S-AA5

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes ✔	No _____	Depth (inches): 3
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA6

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	50	✔	FACW
2. Typha angustifolia	35	✔	OBL
3. Juncus effusus	5		FACW
4. Poa trivialis	20		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-AA6

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-19	10YR 5/2	75	10YR 3/6	25	C	M/PL	SCL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA6 UP

Investigator(s): Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 8

Subregion (LRR or MLRA): LRRN Lat: 39.91399666630 Long: -80.12721311840 Datum: NAD 83

Soil Map Unit Name: Huntington silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:
Heavy rainfall for 4 days before and during surveys. No water table or saturation 0-20." No other hydrology indicators present.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA6 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Ulmus rubra	8	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	8 = Total Cover		
50% of total cover: 4	20% of total cover: 1.6		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Cirsium arvense	60	✔	FACU
2. Phalaris arundinacea	40	✔	FACW
3. Apocynum cannabinum	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-AA6 UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-19	10YR 4/1	60					SCL	
	2.5Y 5/3	40						

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA2

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 5

Subregion (LRR or MLRA): LRRN Lat: 39.91616667970 Long: -80.12612322510 Datum: NAD 83

Soil Map Unit Name: Dumps, mine NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No ____	Depth (inches): 0
Water Table Present?	Yes ✔	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): ____

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA2

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1. Fraxinus pennsylvanica	8	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	8 = Total Cover		
50% of total cover: 4	20% of total cover: 1.6		
Herb Stratum (Plot size: 5')			
1. Carex lurida	80	✔	OBL
2. Agrimonia parviflora	10		FACW
3. Microstegium vimineum	20		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-AA2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 4/1	93					SC	
9-19	10YR 4/1	98	10YR 5/6	7	C	M/PL	SC	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA2 UP

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 10

Subregion (LRR or MLRA): LRRN Lat: 39.91628509170 Long: -80.12603265380 Datum: NAD 83

Soil Map Unit Name: Dumps, mine NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Cowardin Code:
HGM:
WT:
Heavy rainfall for 4 days before and during surveys. Several streams in survey area were flooded.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA2 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Aesculus octandra	30	✓	FACU
2. Robinia pseudoacacia	30	✓	FACU
3. Acer rubrum	10		FAC
4. Quercus rubra	30	✓	FACU
5.			
6.			
7.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Sapling/Shrub Stratum (Plot size: 15')			
1. Fraxinus americana	10		FACU
2. Prunus americana	40	✓	FACU
3. Sassafras albidum	15	✓	FACU
4. Quercus alba	10		FACU
5.			
6.			
7.			
8.			
9.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Herb Stratum (Plot size: 5')			
1. Aesculus octandra	18	✓	FACU
2. Prunus serotina	10		FACU
3. Potentilla indica	8		FACU
4. Prunus americana	25	✓	FACU
5. Quercus alba	10		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	71 = Total Cover		
50% of total cover: 35.5	20% of total cover: 14.2		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	236	x 4 =	944
UPL species	0	x 5 =	0
Column Totals:	246 (A)		974 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

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

SOIL

Sampling Point: W-AA2 UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 5/3	100					SCL	
2-19	10YR 5/6	100					SCL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/09/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA3

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 8

Subregion (LRR or MLRA): LRRN Lat: 39.91694532470 Long: -80.12500339490 Datum: NAD 83

Soil Map Unit Name: Dormant-Culleoka complex, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓

Are Vegetation ____, Soil ____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Cowardin Code: PEM
HGM: Slope
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 0
Water Table Present?	Yes ✓	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA3

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Typha angustifolia	40	✓	OBL
2. Carex vulpinoidea	10		OBL
3. Poa trivialis	60	✓	FACW
4. Juncus effusus	15		FACW
5. Solidago sp	5		
6. Lotus corniculatus	5		UPL
7.			
8.			
9.			
10.			
11.			
	135 = Total Cover		
50% of total cover: 67.5	20% of total cover: 27		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

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

SOIL Sampling Point: W-AA3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR6/1	70	10YR4/6	10	RM	M/PL	SCL	
			10YR5/3	20	RM	M/PL	SCL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date:

Applicant/Owner: EQT State: PA Sampling Point: W-AA3 UP

Investigator(s): J. Heule L. McCarrell, L. Sexton, C. Lee Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 10

Subregion (LRR or MLRA): LRRN Lat: 39.91699149540 Long: -80.12501773560 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No ✔	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ____	No ✔	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✔

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

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA3 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Lotus corniculatus	30	✔	UPL
2. Cirsium arvense	40	✔	FACU
3. Solidago altissima	10		FACU
4. Poa pratensis	50	✔	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	130 = Total Cover		
50% of total cover: 65	20% of total cover: 26		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	30	x 5 =	150
Column Totals:	130 (A)		550 (B)

Prevalence Index = B/A = 4.2

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

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

SOIL

Sampling Point: W-AA3 UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-19	10YR 4/3	80					SC	
	10YR 7/8	20						

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA4

Investigator(s): JH, LM, LS, CL Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): LRRN Lat: 39.91675806970 Long: -80.11522332030 Datum: NAD 83

Soil Map Unit Name: Dormont silt loam, 8 to 15 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✓ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 0
Water Table Present?	Yes ✓	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA4

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex lurida	65	✓	OBL
2. Carex vulpinoidea	50	✓	OBL
3. Phalaris arundinacea	5		FACW
4. Poa trivialis	5		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	125 = Total Cover		
50% of total cover: 62.5	20% of total cover: 25		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

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

SOIL Sampling Point: W-AA4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 5/1	100					SILC	
3-19	10YR 5/1	80	10YR 3/6	80	C	M/PL	SILC	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Wetzel Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA4 UP

Investigator(s): JH, LM, LS, CL Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 4

Subregion (LRR or MLRA): LRRN Lat: 39.916774 Long: -80.115212 Datum: NAD 83

Soil Map Unit Name: Dormont silt loam, 8 to 15 percent slopes (DoC) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA4 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Cirsium arvense	60	✓	FACU
2. Securigera varia	40	✓	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	60	x 4 =	240
UPL species	40	x 5 =	200
Column Totals:	100 (A)		440 (B)

Prevalence Index = B/A = 4.4

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

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

SOIL Sampling Point: W-AA4 UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/1	100					SCL	
12-20	10YR 7/6	100					SCL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA7

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 15

Subregion (LRR or MLRA): LRRN Lat: 39.91692035220 Long: -80.11417398970 Datum: NAD 83

Soil Map Unit Name: Dormont silt loam, 8 to 15 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✓ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): 0
Water Table Present?	Yes ✓	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA7

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Scirpus atrovirens	10		OBL
2. Carex vulpinoidea	60	✓	OBL
3. Phalaris arundinacea	20		FACW
4. Poa trivialis	15		FACW
5. Poa palustris	40	✓	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	145 = Total Cover		
50% of total cover: 72.5	20% of total cover: 29		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

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

SOIL Sampling Point: W-AA7

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-19	10YR 3/1	15	10YR 5/8	5	C	M	SC	
	10YR 5/1	80						

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA7 UP

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 20

Subregion (LRR or MLRA): LRRN Lat: 39.91692609920 Long: -80.11395393570 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 8 to 15 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA7 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Cirsium arvense	25	✓	FACU
2. Securigera varia	12		UPL
3. Rubus allegheniensis	80	✓	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	117 = Total Cover		
50% of total cover: 58.5	20% of total cover: 23.4		
Woody Vine Stratum (Plot size: 15')			
1. Rubus allegheniensis	10	✓	FACU
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	115	x 4 =	460
UPL species	12	x 5 =	60
Column Totals:	127 (A)		520 (B)

Prevalence Index = B/A = 4.1

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

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

SOIL Sampling Point: W-AA7 UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/1	100					SCL	
12-20	10YR 7/6	100					SCL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA8

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.91723329800 Long: -80.10237266320 Datum: NAD 83

Soil Map Unit Name: Dekalb channery loam, 25 to 80 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓

Are Vegetation ____, Soil ____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Cowardin Code: PEM
HGM: Isolated
WT: RPWWN

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ✓	No ____	Depth (inches): 3
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA8

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex lurida	40	✓	OBL
2. Carex vulpinoidea	30	✓	OBL
3. Juncus effusus	40	✓	FACW
4. Poa trivialis	25		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	135 = Total Cover		
50% of total cover: 67.5	20% of total cover: 27		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

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

Western 50% of wetland has been mowed in the last 2 months, eastern 50% has not. Therefore, the western part of the wetland has problematic vegetation. Water table at 0" for entire plot. Wetland ID in the area with hydric vegetation.

SOIL Sampling Point: W-AA8

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 5/2	70	10YR 4/6		C	M	SC	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Bedrock

Depth (inches): 9"

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA8 UP

Investigator(s): J. Heule, L. McCarell, L. Sexton, C. Lee Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Flat plain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.91720006700 Long: -80.10240104760 Datum: NAD 83

Soil Map Unit Name: Dekalb channery loam, 25 to 80 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:
Heavy rainfall for 4 days before and during surveys. Several streams in survey area were flooded.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA8 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Trifolium pratense	25		FACU
2. Daucus carotaz	10		UPL
3. Securigera varia	20		UPL
4. Phleum pratense	60	✓	FACU
5. Dactylis glomerata	30	✓	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	145 = Total Cover		
50% of total cover: 72.5	20% of total cover: 29		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	115	x 4 =	460
UPL species	30	x 5 =	150
Column Totals:	145 (A)		610 (B)

Prevalence Index = B/A = 4.2

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

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

SOIL

Sampling Point: W-AA8 UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/1	100					SCL	
12-20	10YR7/6	100					SCL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 10/09/2015

Applicant/Owner: EQT State: PA Sampling Point: W-M1

Investigator(s): J. McGuirk, A. Mengel Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hill slope Local relief (concave, convex, none): Linear Slope (%): 12-15%

Subregion (LRR or MLRA): LRRN Lat: 39.91492671900 Long: 80.10000660220 Datum: NAD 83

Soil Map Unit Name: Dekalb channery loam, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: Slope
WT: Isolate

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-M1

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	75	✔	FACW
2. Solidago altissima	10		FACU
3. Rosa multiflora	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-M1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2"	10YR 2/1	100%					CL	Organics
2-8"	2.5Y 5/2	80	7.5YR 5/6	20	C	PL	GRCL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ✔ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 10/09/2015

Applicant/Owner: EQT State: PA Sampling Point: W-M1 UPL

Investigator(s): J. McGuirk, A. Mengel Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hill slope Local relief (concave, convex, none): Linear Slope (%): 8-10%

Subregion (LRR or MLRA): LRRN Lat: 39.91492671900 Long: -80.10000660220 Datum: NAD 83

Soil Map Unit Name: Dekalb channery loam, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-M1 UPL

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Gleditsia triacanthos	15	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		

Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Herb Stratum (Plot size: 5')			
1. Phleum pratense	40	✔	FACU
2. Dactylis glomerata	40	✔	FACU
3. Achillea millefolium	10		FACU
4. Plantago lanceolata	10		UPL
5. Solidago sp.	10		ND
6. Solanum carolinense	5		FACU
7.			
8.			
9.			
10.			
11.			
	115 = Total Cover		
50% of total cover: 57.5	20% of total cover: 23		

Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

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

ND - Not determined

SOIL

Sampling Point: W-M1 UPL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR 4/3	95	7.5YR 4/4	5	C	M	SiL	
6-12"	10YR 6/2	100%					GRL	Disturbed
12+								Refusal

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Shale

Depth (inches): 12"

Hydric Soil Present? Yes ____ No ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA9

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.91473751940 Long: -80.09409456670 Datum: NAD 83

Soil Map Unit Name: Glenford silt loam, 3 to 8 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓

Are Vegetation ____, Soil ____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Cowardin Code: PEM
HGM: Isolated
WT: RPWWN

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ✓	No ____	Depth (inches): 3
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA9

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	5		FACW
2. Carex vulpinoidea	30	✓	OBL
3. Juncus tenuis	20		FAC
4. Poa trivialis	60	✓	FACW
5. Phleum pratense	5		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	120 = Total Cover		
50% of total cover: 60	20% of total cover: 24		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

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

SOIL Sampling Point: W-AA9

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-19	10YR 5/1	97	10YR 5/8	3	C	M	SiCL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

Soft iron-manganese masses in question do not have diffuse boundaries.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA9 UP

Investigator(s): J. Heule L. Sexton C. Lee L. McCarrell Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Flat plain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.91470007700 Long: -80.09407900410 Datum: NAD 83

Soil Map Unit Name: Glenford silt loam, 3 to 8 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:
Heavy rainfall for 4 days before and during surveys. Several streams in survey area were flooded.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA9 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Ulmus rubra	8	✓	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	8 = Total Cover		
50% of total cover: 4	20% of total cover: 1.6		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Unknown grass	35	✓	ND
2. Daucus carotaz	18		FACW
3. Apocynum cannabinum	10		FACU
4. Dichanthelium clandestinum	5		FAC
5. Hyssop officinalis	30	✓	UPL
6. Rubus allegheniensis	15		FACU
7.			
8.			
9.			
10.			
11.			
	113 = Total Cover		
50% of total cover: 56.5	20% of total cover: 22.6		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	18	x 2 =	36
FAC species	13	x 3 =	39
FACU species	25	x 4 =	100
UPL species	30	x 5 =	150
Column Totals:	86 (A)		325 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

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

SOIL

Sampling Point: W-AA9 UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	10YR4/1	90					SC	
	10YR7/6	10						
11-19	10YR7/6	100					SCL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/12/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA10

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.90452367680 Long: -80.09013204320 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓

Are Vegetation ____, Soil ____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD
PEM is cut out of forrest, not a PFO

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ✓	No ____	Depth (inches): 7
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA10

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1. Nyssa sylvatica	3	✓	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	3 = Total Cover		
50% of total cover: 1.5	20% of total cover: 0.6		
Herb Stratum (Plot size: 5')			
1. Carex lurida	20		OBL
2. Agrimonia parviflora	25	✓	FACW
3. Impatiens capensis	20		FACW
4. Leersia oryzoides	40	✓	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	105 = Total Cover		
50% of total cover: 52.5	20% of total cover: 21		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

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

SOIL Sampling Point: W-AA10

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/2	100					SL	
3-19	10YR 2/2	20	10YR 3/6	15	D	M	SL	
	10YR 5/1	65						

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

10 percent muck 3-19".

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/12/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA10 UP

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5

Subregion (LRR or MLRA): LRRN Lat: 39.90453565550 Long: -80.09019300780 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No ✔	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ____	No ✔	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✔

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

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA10 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus americana	55	✔	FACU
2. Celtis occidentalis	40	✔	FACU
3.			
4.			
5.			
6.			
7.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Verbesina alternifolia	80	✔	FAC
2. Viola sp	8		
3. Grass sp	15		
4. Boehmeria cylindrica	5		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	108 = Total Cover		
50% of total cover: 54	20% of total cover: 21.6		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	80	x 3 =	240
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals:	180 (A)		630 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

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

SOIL Sampling Point: W-AA10 UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/1	100					SCL	
12-19	10YR 7/6	100					SCL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 10/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-M3

Investigator(s): J. McGuirk, A. Mengel Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Valley bottom Local relief (concave, convex, none): Concave Slope (%): 2-4%

Subregion (LRR or MLRA): LRRN Lat: 39.902613 Long: -80.086839 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 25 to 50 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-M3

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	5	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Sapling/Shrub Stratum (Plot size: 15')			
1. Salix nigra	5	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5')			
1. Verbesina alternifolia	30	✔	FAC
2. Typha angustifolia	20	✔	OBL
3. Agrimonia parviflora	10		FACW
4. Salix nigra	10		OBL
5. Dichanthelium clandestinum	10		FAC
6. Solidago altissima	5		FACU
7. Scirpus atrovirens	5		OBL
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-M3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8"	10YR 4/2	90	7.5YR 4/4	10	C	PL	SiL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 10/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-M4

Investigator(s): J. McGuirk, A. Mengel Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hill slope Local relief (concave, convex, none): Concave Slope (%): 3-5%

Subregion (LRR or MLRA): LRRN Lat: 39.90235947890 Long: -80.08697573750 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 25 to 50 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
Cowardin Code: PEM
HGM: Slope
WT: RPWWN

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ✓ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): 1"
Water Table Present?	Yes ✓	No _____	Depth (inches): 0"
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0"

Wetland Hydrology Present? **Yes** ✓ **No** _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-M4

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	50	✓	FACW
2. Typha angustifolia	20	✓	OBL
3. Onoclea sensibilis	10		FACW
4. Carex vulpinoidea	10		OBL
5. Asclepias incarnata	5		OBL
6. Juncus effusus	5		FACW
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

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

SOIL

Sampling Point: W-M4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 3/1	97	10YR 4/4	3	C	M	CL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 10/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-M2

Investigator(s): J. McGuirk, A. Mengel Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Valley bottom Local relief (concave, convex, none): Concave Slope (%): 3-5%

Subregion (LRR or MLRA): LRRN Lat: 39.90155980100 Long: -80.08556468700 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 25 to 50 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✓ **No** _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): 0"
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0"

Wetland Hydrology Present? **Yes** ✓ **No** _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-M2

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1. Salix nigra	10	✓	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5')			
1. Typha angustifolia	50	✓	OBL
2. Phalaris arundinacea	30	✓	FACW
3. Juncus effusus	20		FACW
4. Poa trivialis	10		FACW
5. Verbena hastata	5		FACW
6. Carex lurida	5		OBL
7. Eupatorium perfoliatum	5		FACW
8.			
9.			
10.			
11.			
	125 = Total Cover		
50% of total cover: 62.5	20% of total cover: 25		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

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

SOIL

Sampling Point: W-M2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8"	10YR 4/1	90	7.5YR 4/4	10	C	PL	CL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 10/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-M2, M3, M4 UPL

Investigator(s): J. McGuirk, A. Mengel Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hill slope Local relief (concave, convex, none): Convex Slope (%): 3-5%

Subregion (LRR or MLRA): LRRN Lat: 39.90221161600 Long: -80.08653293760 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 25 to 50 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-M2, M3, M4 UPL

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phleum pratense	40	✔	FACU
2. Dactylis glomerata	20	✔	FACU
3. Potentilla indica	15		FACU
4. Andropogon virginicus	15		FACU
5. Trifolium pratense	10		FACU
6. Plantago lanceolata	5		UPL
7. Achillea millefolium	5		FACU
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

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

SOIL

Sampling Point: W-M2, M3, M4 UPL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4"	7.5YR 4/4	100					SiL	
4-12"	7.5YR 5/3	80	7.5YR 5/6	10	C	M	CL	
			10YR 6/1	10	D	M	CL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 10/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-M5

Investigator(s): J. McGuirk, A. Mengel Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Valley bottom Local relief (concave, convex, none): Concave Slope (%): 0-1%

Subregion (LRR or MLRA): LRRN Lat: 39.90132669870 Long: -80.08949790100 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 25 to 50 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-M5

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	15	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Sapling/Shrub Stratum (Plot size: 15')			
1. Salix nigra	10	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5')			
1. Typha angustifolia	75	✔	OBL
2. Ranunculus hispidus	5		FAC
3. Mimulus ringens	5		OBL
4. Epilobium coloratum	5		FACW
5. Carex sp.	5		ND
6. Eupatorium perfoliatum	3		FACW
7. Persicaria sagittata	3		OBL
8.			
9.			
10.			
11.			
	101 = Total Cover		
50% of total cover: 50.5	20% of total cover: 20.2		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

ND - Not determined

SOIL Sampling Point: W-M5

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 5/2	95	5YR 5/4	5	C	M	CL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 10/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-M6

Investigator(s): J. McGuirk, A. Mengel Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Valley bottom Local relief (concave, convex, none): Concave Slope (%): 0-3%

Subregion (LRR or MLRA): LRRN Lat: 39.90157019710 Long: -80.08954794330 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 25 to 50 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-M6

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Typha angustifolia	30	✔	OBL
2. Schoenoplectus tabernaemontani	30	✔	OBL
3. Juncus effusus	20		FACW
4. Scirpus atrovirens	10		OBL
5. Agrimonia parviflora	10		FACW
6. Solidago sp.	5		ND
7. Poa sp.	5		ND
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

ND - Not determined

SOIL Sampling Point: W-M6

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 5/2	95	5YR 4/4	5	C	PL	CL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 10/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-M5, M6 UPL

Investigator(s): J. McGuirk, A. Mengel Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Valley bottom Local relief (concave, convex, none): Convex Slope (%): 0-2%

Subregion (LRR or MLRA): LRRN Lat: 39.90170628860 Long: -80.08933135920 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 25 to 50 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-M5, M6 UPL

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Dactylis glomerata	40	✔	FACU
2. Verbesina alternifolia	20	✔	FAC
3. Cirsium vulgare	10		FACU
4. Solanum carolinense	10		FACU
5. Solidago sp.	10		ND
6. Achillea millefolium	10		FACU
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	20	x 3 =	60
FACU species	70	x 4 =	280
UPL species		x 5 =	
Column Totals:	90 (A)		340 (B)

Prevalence Index = B/A = 3.77

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

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

ND - Not determined

SOIL

Sampling Point: W-M5, M6 UPL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 4/3	100%					SiL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Wetzel Sampling Date: 10/21/2015

Applicant/Owner: EQT State: WV Sampling Point: W-Z1

Investigator(s): SAZ, CS Section, Township, Range: NA

Landform (hillslope, terrace, etc.): flloodplain Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.562971 Long: -80.543704 Datum: NAD 83

Soil Map Unit Name: Skidmore gravelly loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-Z1

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	15	✓	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Sapling/Shrub Stratum (Plot size: 15')			
1. Acer negundo	10	✓	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5')			
1. Dichanthelium clandestinum	20	✓	FAC
2. Phalaris arundinacea	30	✓	FACW
3. Vernonia noveboracensis	15		FACW
4. Viola sororia	15		FAC
5. Symphyotrichum prenanthoides	10		FAC
6. Persicaria maculosa	10		FACW
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

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

SOIL Sampling Point: W-Z1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/2	100					SiL	
8-20	10YR 4/2	90	10YR 5/8	10	C	M/PL	SiL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Wetzel Sampling Date: 10/21/2015

Applicant/Owner: EQT State: WV Sampling Point: W-Z1 UPL

Investigator(s): SAZ, CS Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.563019 Long: -80.54361 Datum: NAD 83

Soil Map Unit Name: Skidmore gravelly loam NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-Z1 UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 0)			
1. Dactylis glomerata	65	✓	FACU
2. Trifolium pratense	20	✓	FACU
3. Echinochloa crus-galli	10		FAC
4. Plantago major	5		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

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

SOIL

Sampling Point: W-Z1 UPL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/4	70	7.5 YR 5/6	10	C	M	GL	
	5Y 6/6	20						

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Coarse fragments

Depth (inches): 5

Hydric Soil Present? **Yes** ___ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Wetzel Sampling Date: 10/21/2015

Applicant/Owner: EQT State: WV Sampling Point: W-Z3

Investigator(s): SAZ, CS Section, Township, Range: NA

Landform (hillslope, terrace, etc.): flloodplain Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.552937 Long: -80.544539 Datum: NAD 83

Soil Map Unit Name: Skidmore gravelly loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWN
Data form for wetlands W-Z3A and W-Z3B.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-Z3

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex lurida	30	✓	OBL
2. Carex vulpinoidea	20	✓	OBL
3. Arthraxon hispidus	20	✓	FAC
4. Juncus effusus	15		FACW
5. Cyperus esculentus	10		FACW
6. Scirpus atrovirens	5		OBL
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

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

Vegetation has been disturbed over significant portions of W-Z3A & W-ZB, straw is covering bare ground.

SOIL

Sampling Point: W-Z3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/2	80	7.5YR 5/8	10	C	M/PL	SiCL	
	2.5Y 6/8	10						

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

Very disturbed soils throughout most of wetland, sample point taken in a less disturbed area.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Wetzel Sampling Date: 10/21/2015

Applicant/Owner: EQT State: WV Sampling Point: W-Z3 UPL

Investigator(s): SAZ, CS Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): LRRS Lat: 39.553178 Long: -80.544416 Datum: NAD 83

Soil Map Unit Name: Skidmore gravelly loam NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-Z3 UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 0)			
1. Dactylis glomerata	50	✓	FACU
2. Juncus effusus	15	✓	FACW
3. Trifolium pratense	15	✓	FACU
4. Plantago lanceolata	10		UPL
5. Daucus carota	10		UPL
6. Phalaris arundinacea	10		FACW
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

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

SOIL

Sampling Point: W-Z3 UPL

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/3	100					L	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 5

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Wetzel Sampling Date: 10/21/2015

Applicant/Owner: EQT State: WV Sampling Point: W-Z2

Investigator(s): SAZ, CS Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): flloodplain Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.550181 Long: -80.544762 Datum: NAD 83

Soil Map Unit Name: Skidmore gravelly loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✓ **No** _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? **Yes** ✓ **No** _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-Z2

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex vulpinoidea	70	✓	OBL
2. Carex lurida	10		OBL
3. Scirpus polyphyllus	5		OBL
4. Juncus canadensis	5		OBL
5. Persicaria sagittata	5		OBL
6. Juncus effusus	5		FACW
7. Cyperus esculentus	5		FACW
8.			
9.			
10.			
11.			
	105 = Total Cover		
50% of total cover: 52.5	20% of total cover: 21		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

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

SOIL

Sampling Point: W-Z2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 4/2	80	7.5YR 5/8	20	C	M/PL	SiCL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Wetzel Sampling Date: 10/21/2015

Applicant/Owner: EQT State: WV Sampling Point: W-Z2 UPL

Investigator(s): SAZ, CS Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.550418 Long: -80.544845 Datum: NAD 83

Soil Map Unit Name: Skidmore gravelly loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-Z2 UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		

50% of total cover: 0 20% of total cover: 0

Herb Stratum (Plot size: 0)			
1. Dactylis glomerata	60	✓	FACU
2. Clinopodium vulgare	15		UPL
3. Trifolium pratense	10		FACU
4. Glechoma hederacea	10		FACU
5. Verbesina alternifolia	5		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		

50% of total cover: 50 20% of total cover: 20

Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		

50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

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

SOIL

Sampling Point: W-Z2 UPL

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-5	10YR 4/4	100					SiL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: coarse fragments

Depth (inches): 5

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

Remarks:

STREAM ID S-BB1	**STREAM NAME** Lobbs Run
LAT 40.253691 **LONG** -79.962318	**DATE** 07/08/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ✔ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✔ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 2.0 ft
Top of Bank Height:
LB 1.0 ft RB 1.0 ft
Water Depth: 5.00 in
Water Width: 2.0 ft
High Water Mark: 4.0 in
Flow Direction: West

Stream Erosion
✔ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✔ No

Dam Present ___ Yes ✔ No

Sinuosity ✔ Low ___ Medium ___ High

Gradient
✔ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✔ Flowing water

Velocity
✔ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 80 % Run 10 %
Pool 10 %

Turbidity
___ Clear ✔ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	60
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	10
Silt	0.004-0.06 mm	10
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	30
Muck-Mud	black, very fine organic (FPOM)	5
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✔ Forest ___ Commercial
___ Field/Pasture ✔ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
✔ Partly open ___ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
✔ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✔ Narrow <16ft

Wetland Present ___ Yes ✔ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	Crawfish holes, mayflies, water bugs, skimmers

STREAM ID S-BB2	**STREAM NAME** UNT to Lobbs Run
LAT 40.249311 **LONG** -79.957857	**DATE** 07/08/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent ___ Ephemeral ✔	**WATER TYPE** TNW ___ RPW ___ NRPW ✔

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 1.0 ft
Top of Bank Height:
LB 1.0 ft RB 1.0 ft
Water Depth: 2.00 in
Water Width: 11.0 in
High Water Mark: 2.0 in
Flow Direction: North

Stream Erosion
✔ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✔ No

Dam Present ___ Yes ✔ No

Sinuosity ✔ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ✔ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✔ Flowing water

Velocity
___ Fast ✔ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 80 % Run 10 %
Pool 10 %

Turbidity
___ Clear ✔ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	60
Clay	< 0.004 mm (slick)	40

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	30
Muck-Mud	black, very fine organic (FPOM)	70
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
✔ Field/Pasture ___ Industrial
___ Agricultural ✔ Residential
___ Other:

Canopy Cover
✔ Partly open ___ Partly shaded
___ Shaded ✔ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✔ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✔ Narrow <16ft

Wetland Present ✔ Yes ___ No
Wetland ID W-BB2

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Source is seep/well at top of hill
crawfish holes.

STREAM ID S-BB5	**STREAM NAME** Monongehela River
LAT 40.242072 **LONG** -79.949452	**DATE** 07/08/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS AL,SC,TC,JA	
FLOW REGIME Perennial ✔ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ✔ RPW ___ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 860.0 ft
Top of Bank Height:
LB 30.0 ft RB 70.0 ft
Water Depth: ___ ft
Water Width: 767.(ft
High Water Mark: ___ in
Flow Direction: East

Stream Erosion
✔ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✔ No

Dam Present ___ Yes ✔ No

Sinuosity ✔ Low ___ Medium ___ High

Gradient
✔ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✔ Flowing water

Velocity
✔ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run 100 %
Pool %

Turbidity
___ Clear ✔ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	15
Cobble	64-256 mm (2.5"-10")	30
Gravel	2-64 mm (0.1"-2.5")	25
Sand	0.06-2mm (gritty)	20
Silt	0.004-0.06 mm	5
Clay	< 0.004 mm (slick)	5

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	30
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ✔ Commercial
___ Field/Pasture ✔ Industrial
___ Agricultural ✔ Residential
___ Other:

Canopy Cover
✔ Partly open ___ Partly shaded
___ Shaded ✔ Open

Indicate the dominant type (Check one)
✔ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
✔ Wide > 30ft ___ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✔ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Substrate material could not be determined
OHWM could not be accurately determined
Salamanders, frogs, fish, snakes

STREAM ID S-BB4	**STREAM NAME** Bunola Run
LAT 40.23785276 **LONG** -79.94687252	**DATE** 07/08/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS AL,SC,TC,JA	
FLOW REGIME Perennial ✓ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 20.0 ft
Top of Bank Height:
LB 4.0 ft RB 2.0 ft
Water Depth: 12.00 in
Water Width: 5.0 ft
High Water Mark: 18.0 in
Flow Direction: East

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ✓ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 80 % Run 10 %
Pool 10 %

Turbidity
✓ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	15
Cobble	64-256 mm (2.5"-10")	30
Gravel	2-64 mm (0.1"-2.5")	25
Sand	0.06-2mm (gritty)	20
Silt	0.004-0.06 mm	5
Clay	< 0.004 mm (slick)	5

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	30
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	

STREAM ID S-BB6	**STREAM NAME** UNT to Bunola Run
LAT 40.238830 **LONG** -79.943779	**DATE** 07/08/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS AL,SC,TC,JA	
FLOW REGIME Perennial ✔ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✔ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 3.0 ft
Top of Bank Height:
LB 1.0 ft RB 2.0 ft
Water Depth: 7.00 in
Water Width: 1.0 ft
High Water Mark: 5.0 in
Flow Direction: North

Stream Erosion
✔ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✔ No

Dam Present ___ Yes ✔ No

Sinuosity ✔ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✔ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✔ Flowing water

Velocity
___ Fast ✔ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 70 % Run 30 %
Pool %

Turbidity
✔ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	70
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	10
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	10
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ✔ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
___ Shaded ✔ Open

Indicate the dominant type (Check one)
___ Trees ✔ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ✔ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✔ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✔ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Catchment feature, drains into river
Skimmers, water bugs, crawfish holes.

STREAM ID S-BB3	**STREAM NAME** Kelly Run
LAT 40.228285 **LONG** -79.932636	**DATE** 07/08/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS AL,SC,TC,JA	
FLOW REGIME Perennial ✔ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✔ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 30.0 ft
Top of Bank Height:
LB 4.0 ft RB 2.0 ft
Water Depth: 18.00 in
Water Width: 20.0 ft
High Water Mark: 12.0 in
Flow Direction: Northeast

Stream Erosion
✔ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✔ No

Dam Present ___ Yes ✔ No

Sinuosity ___ Low ✔ Medium ___ High

Gradient
✔ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✔ Flowing water

Velocity
✔ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 80 % Run 10 %
Pool 10 %

Turbidity
✔ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	60
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	10
Silt	0.004-0.06 mm	10
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	30
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
✔ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
✔ Partly open ___ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
✔ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ✔ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✔ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✔ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	Salamanders, frogs, mayflies, water bugs, skimmers

STREAM ID S-N1	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.918213 **LONG** -80.128345	**DATE** 06/09/2015
CLIENT EQT	**PROJECT NAME** MVP
INVESTIGATORS JH, LM, JK	
FLOW REGIME Perennial ___ Intermittent ✔ Ephemeral ___	**WATER TYPE** TNW ___ RPW ___ NRPW ✔

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 7.0 ft
Top of Bank Height:
LB 20.0 in RB 72.0 in
Water Depth: 0.00 in
Water Width: 0.0 ft
High Water Mark: 5.0 in
Flow Direction: South

Stream Erosion
___ None ✔ Moderate ___ Heavy

Artificial, Modified or Channelized
✔ Yes ___ No

Dam Present ___ Yes ✔ No

Sinuosity ✔ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✔ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
✔ No water, stream bed dry
___ Stream bed moist
___ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 0 % Run 0 %
Pool 0 %

Turbidity
___ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
✔ Other No water

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	10
Gravel	2-64 mm (0.1"-2.5")	25
Sand	0.06-2mm (gritty)	65
Silt	0.004-0.06 mm	0
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	5
Muck-Mud	black, very fine organic (FPOM)	20
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ✔ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
___ Shaded ✔ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
✔ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✔ Narrow <16ft

Wetland Present ___ Yes ✔ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ✔ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Channelized to direct water around existing fenced facility

STREAM ID S-N2	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.917568 **LONG** -80.130835	**DATE** 06/09/2015
CLIENT EQT	**PROJECT NAME** MVP
INVESTIGATORS JH, LM, JK	
FLOW REGIME Perennial ___ Intermittent ✔ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✔ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 2.0 ft
Top of Bank Height:
LB 1.0 ft RB 1.0 ft
Water Depth: 0.00 in
Water Width: 0.0 ft
High Water Mark: 2.0 in
Flow Direction: Southwest

Stream Erosion
___ None ✔ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✔ No

Dam Present ___ Yes ✔ No

Sinuosity ✔ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✔ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
✔ No water, stream bed dry
___ Stream bed moist
___ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 0 % Run 0 %
Pool 0 %

Turbidity
___ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
✔ Other No water

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	10
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	50
Silt	0.004-0.06 mm	20
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	5
Muck-Mud	black, very fine organic (FPOM)	5
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ✔ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
___ Shaded ✔ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✔ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✔ Narrow <16ft

Wetland Present ✔ Yes ___ No
Wetland ID W-N1

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	S-N3 feeds into S-N2. Connected with W-N1

STREAM ID S-N3	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.918078 **LONG** -80.1302	**DATE** 06/09/2015
CLIENT EQT	**PROJECT NAME** MVP
INVESTIGATORS JH, LM, JK	
FLOW REGIME Perennial ___ Intermittent ✔ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✔ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 3.0 ft
Top of Bank Height:
LB 6.0 in RB 6.0 in
Water Depth: 0.00 in
Water Width: 0.0 ft
High Water Mark: 6.0 in
Flow Direction: Southwest

Stream Erosion
___ None ✔ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✔ No

Dam Present ___ Yes ✔ No

Sinuosity ✔ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✔ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
✔ No water, stream bed dry
___ Stream bed moist
___ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 0 % Run 0 %
Pool 0 %

Turbidity
___ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
✔ Other No water

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	10
Cobble	64-256 mm (2.5"-10")	5
Gravel	2-64 mm (0.1"-2.5")	0
Sand	0.06-2mm (gritty)	50
Silt	0.004-0.06 mm	35
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	0
Muck-Mud	black, very fine organic (FPOM)	10
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ✔ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
✔ Shaded ___ Open

Indicate the dominant type (Check one)
___ Trees ✔ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✔ Narrow <16ft

Wetland Present ___ Yes ✔ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Drains from a culvert and converges with S-N2 through another culvert

STREAM ID S-AA1	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.91687549 **LONG** -80.12493326	**DATE** 07/08/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ✓ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 10.0 ft
Top of Bank Height:
LB 16.0 in RB 15.0 in
Water Depth: 3.00 in
Water Width: 81.0 in
High Water Mark: 10.0 in
Flow Direction: South

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
✓ Yes ___ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
✓ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 60 % Run 20 %
Pool 20 %

Turbidity
___ Clear ✓ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		10
Boulder	> 256 mm (10")	20
Cobble	64-256 mm (2.5"-10")	50
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	0
Silt	0.004-0.06 mm	0
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	10
Muck-Mud	black, very fine organic (FPOM)	15
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ✓ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ✓ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✓ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Channelized under highway through cement culvert. 5 foot waterfall

STREAM ID S-AA2	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.915698 **LONG** -80.131299	**DATE** 07/08/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 1.5 ft
Top of Bank Height:
LB 6.0 in RB 6.0 in
Water Depth: 0.50 in
Water Width: 1.0 ft
High Water Mark: 2.0 in
Flow Direction: Southeast

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
✓ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 0 % Run 0 %
Pool 100 %

Turbidity
___ Clear ✓ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	0
Sand	0.06-2mm (gritty)	10
Silt	0.004-0.06 mm	80
Clay	< 0.004 mm (slick)	10

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	80
Muck-Mud	black, very fine organic (FPOM)	10
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✓ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ✓ Yes ___ No
Wetland ID W-AA1

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Adjacent to W-AA1. The road creates a dam which creates the wetland

STREAM ID S-AA5	**STREAM NAME** South Fork Tenmile Creek
LAT 39.91246121 **LONG** -80.12781246	**DATE** 07/10/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ✓ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ✓ RPW ___ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 70.0 ft
Top of Bank Height:
LB 13.0 ft RB 15.0 ft
Water Depth: 4.00 ft
Water Width: 45.0 ft
High Water Mark: 6.5 ft
Flow Direction: Southwest

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
✓ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 10 % Run 90 %
Pool 0 %

Turbidity
___ Clear ___ Slightly turbid ✓ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ✓ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ✓ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Investigators cannot see bottom of stream.

STREAM ID S-AA7	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.91337453 **LONG** -80.12736829	**DATE** 07/10/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 8.0 ft
Top of Bank Height:
LB 2.0 ft RB 2.5 ft
Water Depth: 4.00 in
Water Width: 5.0 ft
High Water Mark: 10.0 in
Flow Direction: West

Stream Erosion
___None ✓ Moderate ___Heavy

Artificial, Modified or Channelized
✓ Yes ___ No

Dam Present ___Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___Moderate (2 ft/100 ft) ___Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
✓ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 40 % Run 30 %
Pool 30 %

Turbidity
___ Clear ✓ Slightly turbid ___Turbid
___ Opaque ___Stained
___Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	20
Cobble	64-256 mm (2.5"-10")	50
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	5
Silt	0.004-0.06 mm	5
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	5
Muck-Mud	black, very fine organic (FPOM)	0
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ✓ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___Partly open ___Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ___Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___Rooted emergent ___Rooted submergent ___Rooted floating ___Free floating
___Floating algae ___Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Tributary to S-AA5

STREAM ID S-AA3	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.916234 **LONG** -80.126083	**DATE** 07/08/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 4.0 ft
Top of Bank Height:
LB 10.0 in RB 14.0 in
Water Depth: 0.00 in
Water Width: 0.0 ft
High Water Mark: 5.0 in
Flow Direction: South

Stream Erosion
___None ✓Moderate ___Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___Yes ✓No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___No water, stream bed dry
✓Stream bed moist
___Standing water
___Flowing water

Velocity
___Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 0 % Run 0 %
Pool 0 %

Turbidity
___ Clear ___Slightly turbid ___Turbid
___ Opaque ___Stained
✓Other No water

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	50
Sand	0.06-2mm (gritty)	50
Silt	0.004-0.06 mm	0
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	40
Muck-Mud	black, very fine organic (FPOM)	0
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___Partly open ___Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ✓Yes ___No
Wetland ID W-AA2

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___Rooted emergent ___Rooted submergent ___Rooted floating ___Free floating
___Floating algae ___Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Adjacent to W-AA2

STREAM ID S-AA4	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.916873 **LONG** -80.124933	**DATE** 07/09/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ✓ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 5.0 ft
Top of Bank Height:
LB 16.0 in RB 21.0 in
Water Depth: 2.00 in
Water Width: 30.0 in
High Water Mark: 7.0 in
Flow Direction: South

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
✓ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 50 % Run 20 %
Pool 30 %

Turbidity
✓ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	30
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	50
Silt	0.004-0.06 mm	0
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	30
Muck-Mud	black, very fine organic (FPOM)	10
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ✓ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✓ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ✓ Yes ___ No
Wetland ID W-AA3

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ✓ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	Adjacent to W-AA3

STREAM ID S-AA8	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.91667051 **LONG** -80.11525436	**DATE** 07/10/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent ___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 3.0 ft
Top of Bank Height:
LB 1.5 ft RB 1.5 ft
Water Depth: 1.00 in
Water Width: 0.5 ft
High Water Mark: 0.5 ft
Flow Direction: Southeast

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
✓ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 0 % Run 20 %
Pool 80 %

Turbidity
___ Clear ✓ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	0
Sand	0.06-2mm (gritty)	0
Silt	0.004-0.06 mm	50
Clay	< 0.004 mm (slick)	50

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	50
Muck-Mud	black, very fine organic (FPOM)	10
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
___ Shaded ✓ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✓ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ✓ Yes ___ No
Wetland ID W-AA4

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	Runs through W-AA4

STREAM ID S-AA9	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.91708932 **LONG** -80.11402927	**DATE** 07/10/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 4.0 ft
Top of Bank Height:
LB 18.0 in RB 18.0 in
Water Depth: 1.00 in
Water Width: 3.0 in
High Water Mark: 0.5 ft
Flow Direction: Southwest

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ✓ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 100 % Run % Pool %

Turbidity
✓ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	0
Sand	0.06-2mm (gritty)	0
Silt	0.004-0.06 mm	50
Clay	< 0.004 mm (slick)	50

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	20
Muck-Mud	black, very fine organic (FPOM)	25
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
✓ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
✓ Partly open ___ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✓ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ✓ Yes ___ No
Wetland ID W-AA7

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Stream ends at W-AA7

STREAM ID S-AA10	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.91742961 **LONG** -80.11058282	**DATE** 07/10/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent ✓ Ephemeral ___	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 5.0 ft
Top of Bank Height:
LB 2.0 ft RB 2.0 ft
Water Depth: 3.00 in
Water Width: 10.0 in
High Water Mark: 15.0 ft
Flow Direction: South

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
✓ Yes ___ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ✓ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ✓ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 80 % Run 0 %
Pool 20 %

Turbidity
✓ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		25
Boulder	> 256 mm (10")	50
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	10
Sand	0.06-2mm (gritty)	5
Silt	0.004-0.06 mm	10
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	50
Muck-Mud	black, very fine organic (FPOM)	0
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
✓ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✓ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Completely shaded, hard to find. Runs through culvert under road

STREAM ID S-AA11	**STREAM NAME** UNT to Ruff Creek
LAT 39.91747678 **LONG** -80.10698305	**DATE** 07/10/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 6.5 ft
Top of Bank Height:
LB 61.0 in RB 60.0 in
Water Depth: 0.00 in
Water Width: 0.0 ft
High Water Mark: 40.0 ft
Flow Direction: Southeast

Stream Erosion
___None ___Moderate ✓Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___Yes ✓No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ___Moderate (2 ft/100 ft) ✓Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___No water, stream bed dry
✓Stream bed moist
___Standing water
___Flowing water

Velocity
___Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run %
Pool %

Turbidity
___ Clear ___Slightly turbid ___Turbid
___ Opaque ___Stained
✓Other No water

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	10
Cobble	64-256 mm (2.5"-10")	10
Gravel	2-64 mm (0.1"-2.5")	0
Sand	0.06-2mm (gritty)	5
Silt	0.004-0.06 mm	20
Clay	< 0.004 mm (slick)	55

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	10
Muck-Mud	black, very fine organic (FPOM)	10
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓Forest ___Commercial
___Field/Pasture ___Industrial
___Agricultural ___Residential
___Other:

Canopy Cover
✓Partly open ___Partly shaded
___Shaded ___Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✓Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓Narrow <16ft

Wetland Present ___Yes ✓No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓Rooted emergent ___Rooted submergent ___Rooted floating ___Free floating
___Floating algae ___Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Heavy erosion

STREAM ID S-AA12	**STREAM NAME** Ruff Creek
LAT 39.91742494 **LONG** -80.10568522	**DATE** 07/10/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ✓ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ✓ RPW ___ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 75.0 ft
Top of Bank Height:
LB 12.0 ft RB 8.0 ft
Water Depth: 26.00 in
Water Width: 34.0 ft
High Water Mark: 7.0 ft
Flow Direction: South

Stream Erosion
___None ___Moderate ✓Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___Moderate (2 ft/100 ft) ___Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
✓ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 75 % Run 25 %
Pool 0 %

Turbidity
___ Clear ___Slightly turbid ✓Turbid
___ Opaque ___Stained
___Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	
Muck-Mud	black, very fine organic (FPOM)	65
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
✓ Partly open ___Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___Rooted submergent ___Rooted floating ___Free floating
___ Floating algae ___Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Investigators cannot see the bottom of the stream due to turbidity. Water level is high due to recent rain event.

STREAM ID S-AA13	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.91252677 **LONG** -80.09465444	**DATE** 07/11/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 3.0 ft
Top of Bank Height:
LB 15.0 in RB 12.0 in
Water Depth: 0.50 in
Water Width: 15.0 in
High Water Mark: 8.0 in
Flow Direction: South

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
✓ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run %
Pool 100 %

Turbidity
✓ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	5
Cobble	64-256 mm (2.5"-10")	10
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	30
Silt	0.004-0.06 mm	5
Clay	< 0.004 mm (slick)	30

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	40
Muck-Mud	black, very fine organic (FPOM)	15
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
✓ Partly open ___ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	Tributary to S-AA14

STREAM ID S-AA14	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.91245274 **LONG** -80.0943711	**DATE** 07/11/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 3.0 ft
Top of Bank Height:
LB 18.0 in RB 1.0 ft
Water Depth: 0.00 in
Water Width: 0.0 ft
High Water Mark: 4.0 in
Flow Direction: Southwest

Stream Erosion
___None ✓ Moderate ___Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___No water, stream bed dry
✓ Stream bed moist
___Standing water
___Flowing water

Velocity
___Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run %
Pool %

Turbidity
___ Clear ___Slightly turbid ___Turbid
___ Opaque ___Stained
___Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	0
Sand	0.06-2mm (gritty)	25
Silt	0.004-0.06 mm	0
Clay	< 0.004 mm (slick)	75

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	30
Muck-Mud	black, very fine organic (FPOM)	0
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
✓ Partly open ___Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___Rooted submergent ___Rooted floating ___Free floating
___ Floating algae ___Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Stream turns into much wider stream outside of corridor.

STREAM ID S-AA15	**STREAM NAME** South Fork Tenmile Creek
LAT 39.90982517 **LONG** -80.09229348	**DATE** 07/11/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ✓ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 100.0 ft
Top of Bank Height:
LB 17.0 ft RB 12.0 ft
Water Depth: 3.00 ft
Water Width: 25.0 ft
High Water Mark: 6.0 ft
Flow Direction: SE

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
✓ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run 100 %
Pool %

Turbidity
___ Clear ___ Slightly turbid ✓ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ✓ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ✓ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Investigators cannot see the bottom of the stream to evaluate substrate components. Investigators cannot safely access the north side of the bank to delineate the bank using GPS points. North bank 10 horizontal feet from the railroad.

STREAM ID S-AA24	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.9075366 **LONG** -80.0912906	**DATE** 07/12/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent ✓ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 6.0 ft
Top of Bank Height:
LB 2.0 ft RB 2.0 ft
Water Depth: 1.00 in
Water Width: 20.0 in
High Water Mark: 10.0 in
Flow Direction: Southeast

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 40 % Run 10 %
Pool 50 %

Turbidity
___ Clear ✓ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		15
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	20
Gravel	2-64 mm (0.1"-2.5")	10
Sand	0.06-2mm (gritty)	0
Silt	0.004-0.06 mm	45
Clay	< 0.004 mm (slick)	10

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	20
Muck-Mud	black, very fine organic (FPOM)	50
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

S-AA23 is a tributary to this stream

STREAM ID S-AA23	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.90722013 **LONG** -80.09118362	**DATE** 07/12/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 9.0 ft
Top of Bank Height:
LB 3.0 ft RB 3.0 ft
Water Depth: 0.00 in
Water Width: 0.0 ft
High Water Mark: 1.0 ft
Flow Direction: East

Stream Erosion
___None ___Moderate ✓Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ___Moderate (2 ft/100 ft) ✓Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
✓ Stream bed moist
___ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run %
Pool %

Turbidity
___ Clear ___Slightly turbid ___Turbid
___ Opaque ___Stained
___Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	70
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	15
Sand	0.06-2mm (gritty)	15
Silt	0.004-0.06 mm	0
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	40
Muck-Mud	black, very fine organic (FPOM)	0
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___Partly open ___Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ___Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___Rooted emergent ___Rooted submergent ___Rooted floating ___Free floating
___Floating algae ___Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Tributary to S-AA24

STREAM ID S-AA22	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.90707654 **LONG** -80.09114841	**DATE** 07/12/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 7.0 ft
Top of Bank Height:
LB 2.0 ft RB 3.0 ft
Water Depth: 0.50 in
Water Width: 15.0 in
High Water Mark: 10.0 in
Flow Direction: East

Stream Erosion
___None ✓ Moderate ___Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 50 % Run 10 %
Pool 40 %

Turbidity
___ Clear ✓ Slightly turbid ___Turbid
___ Opaque ___Stained
___Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	30
Silt	0.004-0.06 mm	20
Clay	< 0.004 mm (slick)	30

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	50
Muck-Mud	black, very fine organic (FPOM)	30
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___Partly open ___Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ___Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___Rooted emergent ___Rooted submergent ___Rooted floating ___Free floating
___Floating algae ___Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	

STREAM ID S-AA21	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.90661814 **LONG** -80.09089011	**DATE** 07/12/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent ✓ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 4.0 ft
Top of Bank Height:
LB 4.0 ft RB 4.0 ft
Water Depth: 1.00 in
Water Width: 1.0 ft
High Water Mark: 2.0 ft
Flow Direction: East

Stream Erosion
___None ___Moderate ✓Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___No water, stream bed dry
___Stream bed moist
___Standing water
✓Flowing water

Velocity
___Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 60 % Run 10 %
Pool 30 %

Turbidity
___ Clear ✓Slightly turbid ___Turbid
___ Opaque ___Stained
___Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	5
Gravel	2-64 mm (0.1"-2.5")	15
Sand	0.06-2mm (gritty)	15
Silt	0.004-0.06 mm	30
Clay	< 0.004 mm (slick)	35

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	25
Muck-Mud	black, very fine organic (FPOM)	15
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___Partly open ___Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ___Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___Rooted emergent ___Rooted submergent ___Rooted floating ___Free floating
___Floating algae ___Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Two track roads running perpendicular to stream. Debris litter in stream

STREAM ID S-AA20	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.90452337 **LONG** -80.09019849	**DATE** 07/12/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ✓ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 1.0 ft
Top of Bank Height:
LB 1.0 ft RB 1.0 ft
Water Depth: 1.00 in
Water Width: 6.0 in
High Water Mark: 3.0 in
Flow Direction: East

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ✓ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 45 % Run 15 %
Pool 75 %

Turbidity
___ Clear ✓ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	30
Silt	0.004-0.06 mm	60
Clay	< 0.004 mm (slick)	10

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	10
Muck-Mud	black, very fine organic (FPOM)	0
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
✓ Partly open ___ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✓ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID W-AA10

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

STREAM ID S-AA17	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.90295128 **LONG** -80.08927605	**DATE** 07/12/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ✓ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 12.0 ft
Top of Bank Height:
LB 5.0 ft RB 7.0 ft
Water Depth: 22.00 in
Water Width: 4.0 ft
High Water Mark: 2.0 ft
Flow Direction: East

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ✓ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 60 % Run 10 %
Pool 30 %

Turbidity
___ Clear ✓ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		5
Boulder	> 256 mm (10")	30
Cobble	64-256 mm (2.5"-10")	30
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	10
Silt	0.004-0.06 mm	5
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	15
Muck-Mud	black, very fine organic (FPOM)	20
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
✓ Partly open ___ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

S-AA18 and S-AA19 are both tributaries to this stream

STREAM ID S-AA18	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.90281892 **LONG** -80.08921583	**DATE** 07/12/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent ✓ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 2.0 ft
Top of Bank Height:
LB 6.0 in RB 6.0 in
Water Depth: 0.50 in
Water Width: 4.0 in
High Water Mark: 2.0 in
Flow Direction: Northeast

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 75 % Run 0 %
Pool 25 %

Turbidity
✓ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	10
Sand	0.06-2mm (gritty)	20
Silt	0.004-0.06 mm	50
Clay	< 0.004 mm (slick)	20

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	15
Muck-Mud	black, very fine organic (FPOM)	15
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Tributary to S-AA17

STREAM ID S-AA19	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.90280125 **LONG** -80.08931079	**DATE** 07/12/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent ✓ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 2.0 ft
Top of Bank Height:
LB 3.0 ft RB 3.0 ft
Water Depth: 0.50 in
Water Width: 6.0 in
High Water Mark: 1.0 ft
Flow Direction: Northeast

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
✓ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run %
Pool 100 %

Turbidity
___ Clear ___ Slightly turbid ✓ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	0
Sand	0.06-2mm (gritty)	20
Silt	0.004-0.06 mm	50
Clay	< 0.004 mm (slick)	30

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	15
Muck-Mud	black, very fine organic (FPOM)	10
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	Tributary to S-AA18

STREAM ID S-AA16	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.90186278 **LONG** -80.08527456	**DATE** 07/12/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ✓ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 11.0 ft
Top of Bank Height:
LB 57.0 in RB 39.0 in
Water Depth: 7.00 in
Water Width: 55.0 in
High Water Mark: 22.0 in
Flow Direction: Northwest

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
✓ Yes ___ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run 100 %
Pool %

Turbidity
✓ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	20
Cobble	64-256 mm (2.5"-10")	70
Gravel	2-64 mm (0.1"-2.5")	10
Sand	0.06-2mm (gritty)	0
Silt	0.004-0.06 mm	0
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	15
Muck-Mud	black, very fine organic (FPOM)	0
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ___ Industrial
✓ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✓ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Flows through culvert under access road. Large PEM wetland surrounding stream. All of wetland boundary is outside corridor/access road

STREAM ID S-M1	**STREAM NAME** UNT to Muddy Creek
LAT 39.90179 **LONG** -80.08954	**DATE** 10/08/2015
CLIENT EQT	**PROJECT NAME** EEP
INVESTIGATORS J. McGuirk, A. Mengel	
FLOW REGIME Perennial ___ Intermittent ___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 10.0 ft
Top of Bank Height:
LB 4.0 ft RB 4.0 ft
Water Depth: 0.00 in
Water Width: 0.0 ft
High Water Mark: 3.0 in
Flow Direction: North

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
✓ No water, stream bed dry
___ Stream bed moist
___ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run %
Pool %

Turbidity
___ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	20
Gravel	2-64 mm (0.1"-2.5")	10
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	30
Clay	< 0.004 mm (slick)	40

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	90
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
✓ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ✓ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
___ Trees ✓ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ✓ Yes ___ No
Wetland ID W-M5, W-M6

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	No Macros observed.

STREAM ID S-Z1	**STREAM NAME** Mobley Run
LAT 39.562907 **LONG** -80.543684	**DATE** 10/21/2015
CLIENT EQT	**PROJECT NAME** EEP
INVESTIGATORS SAZ, CS	
WATER TYPE TNW ☐ RPW ☑ NRPW ☐	**FLOW REGIME** Perennial ☑ Intermittent ☐ Ephemeral ☐

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 15.0 ft
Top of Bank Height:
LB 3.5 ft RB 3.5 ft
Water Depth: 1.00 in
Water Width: 3.0 ft
Ordinary High Water Mark (Width): 6.0 in
Ordinary High Water Mark (Height): 6.0 in
Flow Direction: South

Stream Erosion
__ None ✓ Moderate __ Heavy

Artificial, Modified or Channelized
__ Yes ✓ No

Dam Present __ Yes ✓ No

Sinuosity ✓ Low __ Medium __ High

Gradient
✓ Flat (0.5/100 ft) __ Moderate (2 ft/100 ft) __ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
__ No water, stream bed dry
__ Stream bed moist
__ Standing water
✓ Flowing water

Velocity
__ Fast __ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 75 % Run % Pool 25 %

Turbidity
✓ Clear __ Slightly turbid __ Turbid
__ Opaque __ Stained
__ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	40
Gravel	2-64 mm (0.1"-2.5")	40
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	20
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	10
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest __ Commercial
✓ Field/Pasture __ Industrial
__ Agricultural __ Residential
__ Other:

Canopy Cover
__ Open ✓ Partly shaded
__ Shaded

Indicate the dominant type
__ Trees ✓ Shrubs
__ Grasses __ Herbaceous

Floodplain Width
__ Wide > 30ft __ Moderate 15-30ft
__ Narrow <16ft

Wetland Present __ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
__ Rooted emergent __ Rooted submergent __ Rooted floating __ Free floating
__ Floating algae __ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Water pennys

STREAM ID S-J63	**STREAM NAME** UNT to Mobley Run
LAT 39.562554 **LONG** -80.543564	**DATE** 10/21/2015
CLIENT EQT	**PROJECT NAME** EEP
INVESTIGATORS SAZ, CS	
WATER TYPE TNW ☐ RPW ☑ NRPW ☐	**FLOW REGIME** Perennial ☑ Intermittent ☐ Ephemeral ☐

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 7.0 ft
Top of Bank Height:
LB 3.5 ft RB 3.5 ft
Water Depth: 2.00 in
Water Width: 3.0 ft
Ordinary High Water Mark (Width): 3.5 ft
Ordinary High Water Mark (Height): 1.0 ft
Flow Direction: West

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 60 % Run 40 %
Pool 0 %

Turbidity
___ Clear ✓ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	30
Gravel	2-64 mm (0.1"-2.5")	10
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	60
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	15
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
✓ Field/Pasture ___ Industrial
___ Agricultural ✓ Residential
___ Other:

Canopy Cover
✓ Open ___ Partly shaded
___ Shaded

Indicate the dominant type
___ Trees ___ Shrubs
✓ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

STREAM ID S-A2a	**STREAM NAME** UNT to North Fork Fishing Creek
LAT 39.552673 **LONG** -80.544944	**DATE** 10/21/2015
CLIENT EQT	**PROJECT NAME** EEP
INVESTIGATORS SAZ, CS	
WATER TYPE TNW ☐ RPW ☑ NRPW ☐	**FLOW REGIME** Perennial ☑ Intermittent ☐ Ephemeral ☐

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 12.0 ft
Top of Bank Height:
LB 4.0 ft RB 4.0 ft
Water Depth: 2.00 in
Water Width: 3.0 ft
Ordinary High Water Mark (Width): 4.0 ft
Ordinary High Water Mark (Height): 1.0 ft
Flow Direction: North

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 75 % Run % Pool 25 %

Turbidity
___ Clear ✓ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	50
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	30
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
✓ Field/Pasture ___ Industrial
___ Agricultural ✓ Residential
___ Other:

Canopy Cover
✓ Open ___ Partly shaded
___ Shaded

Indicate the dominant type
___ Trees ___ Shrubs
✓ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ✓ Yes ___ No
Wetland ID W-Z2 & W-Z3

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Large pools downstream of culvert with many small fish

STREAM ID S-A3a	**STREAM NAME** UNT to North Fork Fishing Creek
LAT 39.551893 **LONG** -80.545090	**DATE** 10/21/2015
CLIENT EQT	**PROJECT NAME** EEP
INVESTIGATORS SAZ, CS	
WATER TYPE TNW ☐ RPW ☐ NRPW ☑	**FLOW REGIME** Perennial ☐ Intermittent ☐ Ephemeral ☑

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 5.0 ft
Top of Bank Height:
LB 1.5 ft RB 1.5 ft
Water Depth: 0.00 in
Water Width: 0.0 ft
Ordinary High Water Mark (Width): 3.0 ft
Ordinary High Water Mark (Height): 6.0 ft
Flow Direction: East

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
✓ No water, stream bed dry
___ Stream bed moist
___ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run %
Pool %

Turbidity
___ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	40
Gravel	2-64 mm (0.1"-2.5")	40
Sand	0.06-2mm (gritty)	20
Silt	0.004-0.06 mm	
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	20
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
✓ Field/Pasture ___ Industrial
___ Agricultural ✓ Residential
___ Other:

Canopy Cover
___ Open ✓ Partly shaded
___ Shaded

Indicate the dominant type
___ Trees ___ Shrubs
✓ Grasses ___ Herbaceous

Floodplain Width
✓ Wide > 30ft ___ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

APPENDIX B
WETLAND PHOTOGRAPHS

Photograph Number:	1	**Feature Name:**	W-BB1	**Date:**	07/08/2015
Direction:	NE	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	2	**Feature Name:**	W-BB3	**Date:**	07/09/2015
Direction:	SE	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	3	**Feature Name:**	W-BB2	**Date:**	07/08/2015
Direction:	W	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	4	**Feature Name:**	W-BB9	**Date:**	07/11/2015
Direction:	SE	**Plant Community:**	PFO	**Remarks:**	N/A

Photograph Number:	5	**Feature Name:**	W-BB8	**Date:**	07/11/2015
Direction:	N	**Plant Community:**	PFO	**Remarks:**	N/A

Photograph Number:	6	**Feature Name:**	W-BB7	**Date:**	07/11/2015
Direction:	SE	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	7	**Feature Name:**	W-BB6	**Date:**	07/11/2015
Direction:	NW	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	8	**Feature Name:**	W-BB12	**Date:**	07/13/2015
Direction:	NE	**Plant Community:**	PFO	**Remarks:**	N/A

Photograph Number:	9	**Feature Name:**	W-N1	**Date:**	06/09/2015
Direction:	SW	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	10	**Feature Name:**	W-AA1	**Date:**	07/08/2015
Direction:	SW	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	11	**Feature Name:**	W-AA5	**Date:**	07/10/2015
Direction:	NE	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	12	**Feature Name:**	W-AA6	**Date:**	07/10/2015
Direction:	SW	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	13	**Feature Name:**	W-AA2	**Date:**	07/08/2015
Direction:	S	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	14	**Feature Name:**	W-AA3	**Date:**	07/09/2015
Direction:	S	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	15	**Feature Name:**	W-AA4	**Date:**	07/10/2015
Direction:	S	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	16	**Feature Name:**	W-AA7	**Date:**	07/10/2015
Direction:	SW	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	17	**Feature Name:**	W-AA8	**Date:**	07/11/2015
Direction:	W	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	18	**Feature Name:**	W-M1	**Date:**	10/08/2015
Direction:	N	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	19	**Feature Name:**	W-AA9	**Date:**	07/11/2015
Direction:	E	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	20	**Feature Name:**	W-AA10	**Date:**	07/10/2015
Direction:	E	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	21	**Feature Name:**	W-M3	**Date:**	10/08/2015
Direction:	NW	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	22	**Feature Name:**	W-M4	**Date:**	10/08/2015
Direction:	SW	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	23	**Feature Name:**	W-M2	**Date:**	10/08/2015
Direction:	E	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	24	**Feature Name:**	W-M5	**Date:**	10/08/2015
Direction:	E	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	25	**Feature Name:**	W-M6	**Date:**	10/08/2015
Direction:	E	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	26	**Feature Name:**	W-Z1	**Date:**	10/21/2015
Direction:	S	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	27	**Feature Name:**	W-Z2	**Date:**	10/21/2015
Direction:	N	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	28	**Feature Name:**	W-Z3A	**Date:**	10/21/2015
Direction:	S	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	29	**Feature Name:**	W-Z3B	**Date:**	10/21/2015
Direction:	NE	**Plant Community:**	PEM	**Remarks:**	N/A

APPENDIX C
STREAM PHOTOGRAPHS

Photograph Number:	26	**Feature Name:**	S-BB1	**Date:**	07/08/2015
Direction:	W, Upstream	**Flow Regime:**	Intermittent	**Remarks:**	N/A

Photograph Number:	27	**Feature Name:**	S-BB2	**Date:**	07/08/2015
Direction:	S, Upstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	28	**Feature Name:**	S-BB3	**Date:**	07/08/2015
Direction:	N, Downstream	**Flow Regime:**	Perennial	**Remarks:**	Kelly Run

Photograph Number:	29	**Feature Name:**	S-N1	**Date:**	06/09/2015
Direction:	S, Downstream	**Flow Regime:**	Intermittent	**Remarks:**	N/A

Photograph Number:	30	**Feature Name:**	S-N2	**Date:**	06/09/2015
Direction:	SW, Downstream	**Flow Regime:**	Intermittent	**Remarks:**	N/A

Photograph Number:	31	**Feature Name:**	S-N3	**Date:**	06/09/2015
Direction:	E, Upstream	**Flow Regime:**	Intermittent	**Remarks:**	N/A

Photograph Number:	32	**Feature Name:**	S-AA1	**Date:**	07/08/2015
Direction:	SE, Downstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	33	**Feature Name:**	S-AA2	**Date:**	07/08/2015
Direction:	SE, Downstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	35	**Feature Name:**	S-AA5	**Date:**	07/10/2014
Direction:	S, Across	**Flow Regime:**	Perennial	**Remarks:**	South Fork Tenmile Creek

Photograph Number:	36	**Feature Name:**	S-AA7	**Date:**	07/10/2015
Direction:	NW, Downstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	37	**Feature Name:**	S-AA3	**Date:**	07/08/2015
Direction:	S, Downstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	38	**Feature Name:**	S-AA4	**Date:**	07/09/2015
Direction:	S, Downstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	39	**Feature Name:**	S-AA8	**Date:**	07/10/2015
Direction:	SE, Downstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	40	**Feature Name:**	S-AA9	**Date:**	07/10/2015
Direction:	NE, Upstream	**Flow Regime:**	Ephermeral	**Remarks:**	N/A

Photograph Number:	41	**Feature Name:**	S-AA10	**Date:**	07/10/2015
Direction:	S, Downstream	**Flow Regime:**	Intermittent	**Remarks:**	N/A

Photograph Number:	42	**Feature Name:**	S-AA11	**Date:**	07/10/2015
Direction:	SE, Downstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	43	**Feature Name:**	S-AA12	**Date:**	07/16/2015
Direction:	E, Across	**Flow Regime:**	Perennial	**Remarks:**	Ruff Creek

Photograph Number:	44	**Feature Name:**	S-AA13	**Date:**	07/11/2015
Direction:	NE, Upstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	45	**Feature Name:**	S-AA14	**Date:**	07/12/2015
Direction:	SW, Downstream	**Flow Regime:**	Intermittent	**Remarks:**	N/A

Photograph Number:	46	**Feature Name:**	S-AA15	**Date:**	07/11/2015
Direction:	SE, Downstream	**Flow Regime:**	Perennial	**Remarks:**	South Fork Tenmile Creek

Photograph Number:	47	**Feature Name:**	S-AA24	**Date:**	07/12/2015
Direction:	NW, Upstream	**Flow Regime:**	Intermittent	**Remarks:**	N/A

Photograph Number:	48	**Feature Name:**	S-AA23	**Date:**	07/12/2015
Direction:	NE, Downstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	49	**Feature Name:**	S-AA22	**Date:**	07/12/2015
Direction:	NW, Upstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	50	**Feature Name:**	S-AA21	**Date:**	07/12/2015
Direction:	E, Downstream	**Flow Regime:**	Intermittent	**Remarks:**	N/A

Photograph Number:	51	**Feature Name:**	S-AA20	**Date:**	07/12/2015
Direction:	W, Upstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	52	**Feature Name:**	S-AA17	**Date:**	07/12/2015
Direction:	SW, Upstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	53	**Feature Name:**	S-AA18	**Date:**	07/12/2015
Direction:	NE, Downstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	54	**Feature Name:**	S-AA19	**Date:**	07/12/2015
Direction:	S, Upstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	55	**Feature Name:**	S-AA16	**Date:**	03/18/2014
Direction:	SE, Upstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	56	**Feature Name:**	S-M1	**Date:**	10/08/2015
Direction:	S, Upstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	57	**Feature Name:**	S-Z1	**Date:**	10/21/2015
Direction:	N, Upstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	58	**Feature Name:**	S-J63	**Date:**	10/21/2015
Direction:	W, Upstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	59	**Feature Name:**	S-A2a	**Date:**	10/21/2015
Direction:	N, Upstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	60	**Feature Name:**	S-A3a	**Date:**	10/21/2015
Direction:	E, Downstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

APPENDIX D
HYDRIC SOILS LIST

Hydric Soils List
Allegheny County, Pennsylvania

Map Unit Symbol	Map Unit Name	Component Name and Phase	Landforms
At	Atkins silt loam	Atkins	flood plains
BrB	Brinkerton silt loam, 2 to 8 percent slopes	Brinkerton	draws
BrC	Brinkerton silt loam, 8 to 15 percent slopes	Brinkerton	
BrC	Brinkerton silt loam, 8 to 15 percent slopes	Atkins	flood plains
CaB	Cavode silt loam, 2 to 8 percent slopes	Brinkerton	draws
CaC	Cavode silt loam, 8 to 15 percent slopes	Brinkerton	draws
CeB	Caneadea silt loam, 3 to 8 percent slopes	Canadice	lakebeds (relict)
CeB	Caneadea silt loam, 3 to 8 percent slopes	Mill	ground moraines
CoD	Cookport loam, 15 to 25 percent slopes	Andover	mountain slopes
Du	Dumps, coal wastes	Wet spots	depressions
Dw	Dumps, industrial wastes	Wet spots	draws
ErB	Ernest silt loam, 2 to 8 percent slopes	Brinkerton	hills

ErC	Ernest silt loam, 8 to 15 percent slopes	Brinkerton	hills
EvB	Ernest-Vandergrift silt loams, 3 to 8 percent slopes	Brinkerton	hillslopes
EvC	Ernest-Vandergrift silt loams, 8 to 15 percent slopes	Brinkerton	hillslopes
EvD	Ernest-Vandergrift silt loams, 15 to 25 percent slopes	Brinkerton	hillslopes
GvB	Guernsey-Vandergrift silt loams, 3 to 8 percent slopes	Brinkerton	hills
GvC	Guernsey-Vandergrift silt loams, 8 to 15 percent slopes	Brinkerton	hills
GvD	Guernsey-Vandergrift silt loams, 15 to 25 percent slopes	Brinkerton	hills
Gx	Gullied land	Brinkerton	draws
Hu	Huntington silt loam	Atkins	flood plains
Ln	Lindside silt loam	Melvin	flood plains
Ne	Newark silt loam	Brinkerton	depressions
Ne	Newark silt loam	Atkins	flood plains
Ph	Philo silt loam	Atkins	flood plains
TaB	Tilsit silt loam, 3 to 8 percent slopes	Brinkerton	hills
UGB	Urban land-Guernsey complex, gently sloping	Thorndale	draws
URB	Urban land-Rainsboro complex, gently sloping	Ginat	terraces
UWB	Urban land-Wharton complex, gently sloping	Armagh	hills

VcB	Vandergrift-Cavode silt loams, 3 to 8 percent slopes	Brinkerton	hillslopes
VcC	Vandergrift-Cavode silt loams, 8 to 15 percent slopes	Brinkerton	
VcD	Vandergrift-Cavode silt loams, 15 to 25 percent slopes	Brinkerton	
WhB	Wharton silt loam, 3 to 8 percent slopes	Cavode	hills
WhB	Wharton silt loam, 3 to 8 percent slopes	Brinkerton	depressions

Hydric Soils List
Greene and Washington Counties, Pennsylvania

Map Unit Symbol	Map Unit Name	Component Name and Phase	Landforms
Du	Dumps, mine	Wet spots	depressions
Fa	Fluvaquents, loamy	Melvin	flood plains
GdA	Glenford silt loam, 0 to 3 percent slopes	Purdy	terraces
GdB	Glenford silt loam, 3 to 8 percent slopes	Purdy	terraces
GdC	Glenford silt loam, 8 to 15 percent slopes	Purdy	terraces
Hu	Huntington silt loam	Atkins	flood plains
LbA	Library silty clay loam, 0 to 3 percent slopes	Purdy	terraces
Nw	Newark silt loam	Atkins, Brinkerton	flood plains, depressions
Py	Purdy silt loam	Purdy	terraces
Sk	Skidmore gravelly loam	Melvin	flood plains
UdB	Udorthents, smoothed, gently sloping	Wet spots	depressions
UdD	Udorthents, smoothed, moderately steep	Wet spots	depressions
Modified from Hydric Soils of the United States (NRCS 2014)			

Hydric Soils List
Wetzel County, West Virginia

Map Unit Symbol	Map Unit Name	Component Name and Phase	Component Percent	Landforms
EkB	Elk silt loam, 3 to 8 percent slopes	Melvin	3	Flood plains
GsB	Glenford silt loam, 3 to 8 percent slopes	Melvin	5	Flood plains
Hn	Huntington silt loam	Melvin	5	Flood plains
No	Nolin loam	Melvin	5	Flood plains
Sk	Skidmore gravelly loam	Melvin	3	Flood plains
Modified from Hydric Soils of the United States (NRCS 2014)				

APPENDIX E
RESUMES

Experience Summary

Mr. Heule's experience as a Biologist and Environmental Planner includes a background in jurisdictional wetlands and other Waters of the United States delineations, Federal Endangered Species Act (ESA), state and local endangered and threatened species, Bald and Golden Eagle Protection Act (BGEPA), and state-listed noxious weeds. Mr. Heule has conducted biological resource field studies in 7 states, and has conducted desktop housing assessments for communities in North Dakota and Wyoming. Additionally, Mr. Heule is a licensed (Backcountry) Emergency Medical Technician, with more than 3 years of experience with patient care, public safety, and emergency response coordination. He has been recognized for his commitment to safety through Tetra Tech's monthly safety awards twice. Mr. Heule is currently enrolled in Graduate-level studies at the University of Colorado Denver, where he is studying Geographic Information Systems (GIS. These studies include an emphasis on ArcGIS, an Environmental Systems Research Institute (Esri) supported software useful for application in environmental planning with mapmaking, geospatial analytic, and data visualization capabilities.

Education

BA, Ecology and Evolutionary Biology, University of Colorado–Boulder, 2014
At-sea reinforced coursework (semester) with field practicum in 13 countries in Africa, Asia, and Central America, University of Virginia, 2011

Registrations/Certifications

Graduate Certificate in GIS, University of Colorado, Denver, in process

Corporation Project Experience

Wetland Scientist, April–August 2015
Equitrans, Mountain Valley Pipeline Project, West Virginia, Virginia, and Pennsylvania
Mr. Heule led field reconnaissance in teams of three wetland delineators for a proposed 42-inch natural gas pipeline project. Mr. Heule's specific tasks included providing skills identifying hydric soils and hydrophytic vegetation to delineate jurisdictional wetlands and other waters of the U.S. In addition, Mr. Heule was in charge of safety and well-being, quality of work, and overall progress for the team. Wetlands and other Waters of the U.S. were mapped using Trimble® software. Mr. Heule has over 8 weeks experience delineating wetlands and other Waters of the U.S. in the Northern Piedmont Region. This project will run through the summer of 2016.

Biologist, March 2015
NextEra Energy Resources, LLC Wind Energy Center, Taylor, ND
Mr. Heule assisted in field reconnaissance to microsite wind turbines to avoid wetlands and other waters of the United States. If impacts to wetlands and waters cannot be avoided, follow-on desk analysis of wetland and surface water resources, field reconnaissance of these resources, and wetland delineations and Section 404 permitting as necessary.

Environmental Planner, March 2015–Present
Housing and Socioeconomic Study, Mercer and Emmons Counties, ND; Platt County, WY
Mr. Heule analyzed population and economic data to support housing and economic studies for rural communities in North Dakota and Wyoming. Large energy projects bring both benefits and challenges to small, rural communities. Challenges include increasing populations, increases in crime, and impacts to roads and infrastructure and services such as schools and healthcare. Mr. Heule's specific tasks included the analysis of community daycare service capabilities, community member interviews, census data analysis, and housing market analysis. The goal of the housing studies is to predict future housing

trends and determine the needs of the local workforce from an economic perspective. These studies will continue through December of 2015.

Biologist, May 2015–Present
Xcel Energy, West Main Natural Gas Pipeline, Boulder County, CO
Mr. Heule conducted tree inventories and weed surveys to make recommendations to Excel Energy for the purpose of creating an integrated noxious weed management plan and tree preservation plan as mandated by Boulder County. Tasks have included desktop analysis, independent field reconnaissance, and reporting findings and recommendations. This project will be completed in the fall of 2016.

Biologist, August 2015
Public Service Company of Colorado (PSCo), Sterling Ranch Natural Gas Pipeline, Douglas County, CO
Mr. Heule conducted desktop analysis, field reconnaissance, and report writing to provide recommendations to avoid protected biological resources in the Backcountry Wilderness Area of Highlands Ranch. Mr. Heule identified the need for burrowing owl surveys, wetland and other Waters of the U.S. delineation, and raptor surveys within the project area. Mr. Heule completed the report that describes Tetra Tech's recommendations.

Wetland Scientist, August 2015–Present
NextEra and Norvento Energy, Ninnescah and Bloom Wind Farms, Platt and Ford Counties, KS
Mr. Heule conducted micrositing, desktop analysis, and wetland delineation efforts for a proposed windfarm infrastructure that included turbines, access roads, and transmission lines. Specific tasks included plant and soil identification in the Great Plains region, playa wetland jurisdictional determination, and micrositing turbines to avoid water resources on-the-fly. These projects will end in 2016.

Biologist, February 2015
NextEra Energy, Dickenson Wind Farm, ND
Mr. Heule conducted desktop analysis, field reconnaissance, and reporting to provide recommendations to NextEra Energy to avoid Clean Water Act Section 404 permitting for a proposed wind farm in North Dakota. Mr. Heule used his knowledge and understanding of the U.S. Army Corps of Engineers jurisdiction over wetlands and other Waters of the U.S. to map avoidance areas for NextEra.

Biologist, May 2015
Mora Transmission Line, LLC, Mora Transmission Line Project, Mora County, NM
Mr. Heule provided recommendations to avoid biological resources for a proposed replacement to a transmission line in Mora County, New Mexico. Mr. Heule completed a desktop analysis and field reconnaissance to identify biological resources protected under the federal Endangered Species Act (ESA), Bald and Golden Eagle Protection Act (BGEPA), Clean Water Act (CWA), and local-level environmental protection legislation. Mr. Heule completed the report that describes Tetra Tech's recommendations.

Previous Experience

Clinical Service Technician, 2014
Apria Healthcare
Provided care to geriatric and pediatric patients by developing a plan for domestic respiratory therapy.

Intern—CO-Labs, 2014
Teacher—Outdoor Labs
Taught environmental science lessons to middle school students on a volunteer basis.

Resident Advisor (RA) –University of Colorado at Boulder 2013-2014
Recognized by peers for outstanding leadership to colleagues with the Staff Leadership Award.

Emergency Medical Technician (EMT), 2012–2014
University of Colorado at Boulder EMS
Provided emergency care, improved event safety, and worked with other agencies to coordinate transport to local hospitals.

Discipline Codes

Biologist
Urban/Regional Planning

Skill Sets

Biological
Biological assessments
Wetlands delineation

Social
Planning

Other
Geographic Information Systems (GIS)

Related Company Information

Payroll Number: 546590
Employment Status: Part-time
Preferred First Name: John
Office Location: Denver, CO
Hire Date: 2/2/2015
Years with Other Firms: 3
Years with Current Firm: >1
Total Years of Experience: 3
Supervisor: Steve Yarbrough, Biologist
Office Phone: (303) 291-6260
Cell Phone: (303) 253-1647
Fax:
E-mail Address: john.heule@tetratech.com
Other E-mail Address (if any): john.heule@gmail.com
Resume Last Revised: 9/8/2015

Angela Lands

Environmental Scientist

EXPERIENCE SUMMARY

Mrs. Lands is an Environmental Scientist with over four years progressive experience in environmental management, research and consulting. She has considerable experience working with multiple teams of professionals to meet the needs of clients and the company.

She has performed and provided project level management for numerous Phase I/II Environmental Site Assessments. Mrs. Lands has supervised, coordinated and/or conducted field activities involving soil, soil gas, paint, water, and air sampling, stormwater and groundwater quality monitoring programs, full delineations, waste characterizations, and risk assessments of contaminated soil and/or groundwater, land use determination, comprehensive stream assessments, USACE regulated wetland delineations, field observation for underground storage tank (UST) removal projects, and site evaluations for Spill Prevention Control and Countermeasure Plans (SPCC). She is an experienced field supervisor who has managed soil and groundwater field investigations such as monitor well installation and excavations of soils impacted with chlorinated solvents and oil for the petroleum industry. Mrs. Lands has assisted with groundwater and soil subsurface environmental remediation investigations, and supervised regulatory interaction and reporting. Additionally, she is experienced with managing and maintaining comprehensive project documentation and employing detailed projects plans to monitor and track project progress and performance.

Mrs. Lands has extensive experience developing, preparing and executing various written deliverables such as environmental assessment reports, compliance reports, Health and Safety Standard Operating Procedures, risk assessment summaries, SPCC plans, delineation reports, and soil and water quality summaries for federal, state and local regulatory agencies, petroleum clients, and academia. In addition, Mrs. Lands has prepared field logs for soil borings and installation of monitoring wells, soil, paint, air, and water sampling logs, and has developed health and safety plans in compliance with company, state and federal regulations. Mrs. Lands has assisted with the development of various National Environmental Policy Act (NEPA) research, documentation and reporting projects.

Other qualifications include stormwater management, Texas Railroad Commission (RRC) and Texas Commission on Environmental Quality (TCEQ) regulatory compliance procedures for air, water, and petroleum. TCEQ compliance includes reviewing air permit applications, drafting Air Permits by Rule (PBR) applications and assisting with PBR registrations. RRC compliance includes assistance with permitting, production reporting, well completion, etc. of oil and gas wells, facilities and activities.

EDUCATION

B.A., Physical Geography, Environmental Science Specialization, 2010, Kennesaw State University

CERTIFICATIONS

US Army Corps of Engineers Wetland Delineation, certificate #7105, 12/2013

TRAINING

Stormwater Permitting and Management, TEEX, 5/2014

Project Management, PM Level 1, Tetra Tech, NUS, 2/2014

Heartsaver First Aid, CPR, AED, American Heart Association, 10/2013

OSHA 29 CFR 1910.1200 Hazard Communications, Tetra Tech, NUS, 10/2013

OSHA 29 CFR 1910.120 8-Hr Refresher, Tetra Tech, NUS, 10/2013

Confined Spaces, JJ Keller, 6/2013

Hydrogen Sulfide Training, QSSI, 12/2012

NEPA refresher, BLM, 11/2012

Air Permitting, TCEQ, 10/2012

Watershed Management, EPA, 10/2012

OFFICE

San Antonio, Texas

YEARS OF EXPERIENCE

4+

YEARS WITH TETRA TECH

2

RELEVANT EXPERIENCE

- *Environmental Analysis/Management*

Environmental Scientist; HPIP Gonzales Holdings, LLC; Gonzales County, TX; May 2013 – January 2014. Served as a team member assisting with biological surveys, stream assessments, and identification and delineation of wetlands in and around a proposed 25 mile gas pipeline corridor.

Environmental Scientist; Rooney Engineering/Sunoco; Mitchell, Nolan, Taylor, Shackelford, Callahan, Stephens, Eastland, Erath, Somervell, Johnson, and Hill counties in North Texas; October 2013-April 2014. Served as a team member assisting with biological surveys, stream assessments, and identification and delineation of wetlands in and around 325 miles of proposed gas pipeline corridors.

Environmental Science student, KSU; City of Acworth, GA; Acworth, GA; October 2009. Served as team member responsible for the biological, ecological, hydrological assessment and delineation of wetlands of streams leading into Lake Acworth. Final report of findings was presented to the City of Acworth.

- *Sampling (Groundwater, Soil, Paint)*

Environmental Scientist; Halliburton; Laredo, TX, May 2014. Obtained groundwater samples from three monitor wells using low flow pump method and prepared samples for laboratory analysis.

Environmental Scientist; Breitburn Florida, LLC; LeHigh Acres, FL; March 2013-Present. Conducts bi-annual groundwater monitoring at three tank batteries in the LeHigh Acres area. Obtain groundwater samples from 15 monitor wells by bailing/purging, low-flow, and/or submersible pump methods and prepares samples for laboratory analysis. Analytical results are reviewed and chronicled in water quality report format after each sampling event as a client deliverable.

Environmental Scientist; Gibsons Energy; Stockdale, TX; April-May 2014. Obtained soil samples from excavated areas around two plugged and abandoned oil wells to verify or refute the presence of hydrocarbon impacted soils. Samples were collected in jars using grab sample method and prepared for laboratory analysis. Screened samples for volatile organic vapors by way of head space analysis using a Photo Ionization Detector. Analytical results were reviewed and chronicled in report format as a client deliverable.

Environmental Scientist; Flint Hill Resources; Austin, Waco, San Antonio, TX; June 2013-Present. Obtains paint samples from crude oil storage tanks on an as needed basis to verify or refute lead content. Samples are collected using the cold scrape method then prepared for laboratory analysis. Analytical results were reviewed and chronicled in report format as a client deliverable after each sampling event.

Environmental Scientist; SM Energy; Beckham, Greer, Washita, Harmon, Roger Mills counties in Oklahoma, Wheeler and Collingsworth counties in Texas and Bossier Parish, Louisiana; December 2012-March 2013. Conducted pre-development sampling of soil and water in the vicinity of proposed drilling areas. Obtained surface water and groundwater samples by bailing/purging, low-flow, and/or submersible pump methods. Obtained soil samples in jars using grab sample method. All samples were prepared for laboratory analysis. Analytical results were reviewed and chronicled in report format as a client deliverable.

Environmental Scientist; Koch Pipeline, Sunfield Station; Starr County, TX; April 2013. Obtained samples of contaminated soil near a degraded pipeline. Samples were collected in jars using grab sample method and prepared for laboratory analysis.

Environmental Scientist; Tervita/Shell Pilanco; Catarina, TX; January 2013. Obtained samples of remediated soil on various oil pads on the property. Samples were collected in jars using grab sample and/or auger method and prepared for laboratory analysis.

- *Phase I/II Environmental Site Assessments*

Environmental Scientist/Project Manager; Globe Energy Services, LLC; Kenedy, Daisetta, Carrizo Springs, TX; May 2014. Conducted Phase I Environmental Site Assessment in accordance with ASTM Standard Practice for Environmental Site Assessments, E 1527-05 and 40 CFR Part 312 to include site reconnaissance, records review, and map and figure production using ArcGIS. Prepared final written report to serve as client deliverable. Project Management duties included developing cost estimate, scope, work authorization, and task delegation.

Environmental Scientist; Gibsons Energy; Stockdale, TX; April 2014. Conducted Phase I Environmental Site Assessment in accordance with ASTM Standard Practice for Environmental Site Assessments, E 1527-05 and 40 CFR Part 312 to include site reconnaissance, records review, and map and figure production using ArcGIS. A limited phase II evaluation was conducted to determine if historical petroleum activities adversely affected the property. This included soil sampling, PID use, and field supervision of subcontractors using magnetometers to locate any anomalies. Produced final written report to serve as client deliverable.

Environmental Scientist/Project Manager; Enviro Vat, Denver City, TX; March 2014. Conducted Phase I Environmental Site Assessment in accordance with ASTM Standard Practice for Environmental Site Assessments, E 1527-13 and 40 CFR Part 312 to include site reconnaissance, records review, and map and figure production using ArcGIS. Prepared final written report to serve as client deliverable. Project Management duties included creating MSA, developing cost estimate, scope, work authorization, and task delegation.

Environmental Scientist; Universal Pressure Pumping, Inc., Atascosa County, TX; February 2014. Conducted Phase I Environmental Site Assessment in accordance with ASTM Standard Practice for Environmental Site Assessments, E 1527-13 and 40 CFR Part 312 to include records review and map and figure production using ArcGIS. Prepared final written report to serve as client deliverable.

Environmental Scientist/Project Manager; Globe Energy Services, LLC; Nixon, TX; January 2014. Conducted Phase I Environmental Site Assessment in accordance with ASTM Standard Practice for Environmental Site Assessments, E 1527-05 and 40 CFR Part 312 to include site reconnaissance, records review, and map and figure production using ArcGIS. Prepared final written report to serve as client deliverable. Project Management duties included developing cost estimate, scope, work authorization, and task delegation.

Environmental Scientist; HPIP Gonzales Holdings, LLC; Gonzales County, TX; May 2013. Conducted Phase I Environmental Site Assessment in accordance with ASTM Standard Practice for Environmental Site Assessments, E 1527-05 and 40 CFR Part 312 to include site reconnaissance, records review, and map and figure production using ArcGIS. Prepared final written report to serve as client deliverable.

Environmental Scientist; D.R. Horton; Weld County, CO; May 2013. Conducted records review and report preparation for Phase I Environmental Site Assessment in accordance with ASTM Standard Practice for Environmental Site Assessments, E 1527-00 and 40 CFR Part 312. Created report for use in final environmental site assessment.

Environmental Scientist; Pioneer Natural Resources Company; LaSalle County, TX; January 2013. Conducted Phase I Environmental Site Assessment in accordance with ASTM Standard Practice for Environmental

Site Assessments, E 1527-05 and 40 CFR Part 312 to include records review and map and figure production using ArcGIS. Prepared final written report to serve as client deliverable.

Environmental Scientist; McJunkin Red Man Corporation; Asherton, Crane, Midland, Odessa, Kermit, and San Angelo Texas; Carlsbad, Artesia, and Eunice New Mexico; November-December 2012. Conducted 10 Phase I Environmental Site Assessments in accordance with ASTM Standard Practice for Environmental Site Assessments, E 1527-05 and 40 CFR Part 312 to include records review and map and figure production using ArcGIS. Prepared final written report to serve as client deliverable.

Environmental Scientist; Southern Company; Henderson County, TX; November, 2012. Conducted Phase I site reconnaissance in accordance with American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments, E 1527-05 and 40 CFR Part 312. Created report for use in final environmental site assessment.

Environmental Scientist; Northeast Crossing Neighborhood Revitalization, LTD; San Antonio, TX; November 2012. Conducted Phase I site reconnaissance in accordance with American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments, E 1527-05 and 40 CFR Part 312. Created report for use in final environmental site assessment.

- *Air Quality*

Environmental Scientist; Concho Operating, LLC; San Antonio and Houston, TX; October-November 2012. Assisted with details of TCEQ Permit By Rule (PBR) Applications, PBR registration (PI-7), and supporting documentation for PBR Claim Modification.

- *Oil and Gas*

Environmental Scientist; Pyote Water Systems, LLC; Carrizo Springs, TX; June 2014. Conducted inspection of a Saltwater Disposal Facility for the development of the SPCC Plan. Activities included collection of all tank, pump, and containment information on the site, measuring dimensions of containments and secondary containments, and taking photographs of facility. Findings and photos were recorded for use in SPCC plan.

Environmental Scientist; Pioneer Natural Resources Company; various facilities in Eagle Ford Shale Play; January 2013-Present. Gathers details on oil storage locations, tanks, pumps, containments and other on-site equipment of point of delivery (POD) sites, saltwater disposal units, compressor stations, and other oil/gas facilities for creation or revisions of SPCC plans. Creates SPCC plans by reporting findings, along with preventive maintenance, safety inspections, emergency response procedures, training for workers involved with handling oil, inspections and maintenance schedules, and facility operations guidelines. Creates site maps, diagrams and figures using AutoCad and ArcGIS. Prepares final written SPCC plan to serve as client deliverable.

Environmental Scientist; Parsley Petroleum; Reagan and Upton Counties, TX; January-February 2014. Performed site assessments of injection wells, salt water disposal units, and production facilities for environmental audit purposes. Activities included collection of all tank, pump, and containment information on the site, measuring dimensions of containments and secondary containments, taking photographs of facility and conducting NORM Surveys.

❖ *Geotechnical*

Environmental Scientist; Halliburton; Laredo, TX; May 2014. Served as field supervisor for soil boring and drilling, installation, and completion of monitor well by drilling contractor. Collected groundwater samples prior to well completion. Screened soil borings for volatile organic vapors by way of head space analysis using a Photo Ionization Detector. Surveyed elevation at each monitor well relative to mean sea level using a TopCon Laser Level, measured groundwater depth at each well, and used the data for the development of a groundwater gradient map.

❖ *Remediation*

Environmental Scientist; Occidental Petroleum Company (Oxy); Chaves County, NM; September-October 2013. Provided oversight of excavation, transportation and liner installation of assessment area. Conducted assessment and remediation of contaminated soils at abandoned oil and gas facility. Collected samples from excavated soil to delineate oil spill. Conducted field analysis to determine contamination levels. Prepared samples for further laboratory analysis, reported analytical findings and delineation details.

Environmental Scientist; Cimarex; Eddy County, NM; August 2013. Provided oversight of excavation, transportation and liner installation of assessment area. Conducted assessment and remediation of contaminated soils at an active oil and gas facility. Collected samples from excavated soil to delineate oil spill. Conducted field analysis to determine contamination levels. Prepared samples for further laboratory analysis, reported analytical findings and delineation details.

❖ *Environmental Compliance*

Environmental Scientist; Forge Energy; San Antonio, TX; January 2014-Present. Supervises a regulatory compliance team conducting compliance reviews and regulatory audits. Team is also responsible for permitting, production, and completion reporting for the client's oil and gas facilities in southwest Texas.

❖ *NEPA*

Contract Specialist; US Army Corps of Engineers; Mountain Pine, AR; 2001-2004. Assisted in the preparation of NEPA documents in accordance with the Council on Environmental Quality (CEQ) regulation 40 CFR 1500-1508. Documents included Environmental Information Documents, Environmental Assessments, Environmental Impact Statements, and Findings of No Significant Impact.

❖ *Health and Safety*

Environmental Scientist; Forge Energy, San Antonio, TX; May 2014. Provided assistance in the development of Standard Operating Procedures for Health and Safety. Topics included Benzene Awareness, Hydrogen Sulfide Awareness, Stop Work Initiative, Respiratory Protection, and Personal Protective Equipment.

CHRONOLOGICAL HISTORY

- Environmental Scientist, Tetra Tech, Inc., October 2012-present, San Antonio, TX.
- Contract Specialist, US Army Corps of Engineers, 2001-2007, Mountain Pine, AR; Cartersville, GA.
- Contract Closeout Administrator; US Army Corps of Engineers and US Agency for International Development, May 2004-January 2005, Baghdad, Iraq
- US Army, 1994-1996, Fort Carson, CO and Uijongbu, South Korea
- US Army Reserves, 1997-2000, Fort Belvoir, VA and New Boston, TX.

SCIENTIFIC/TECHNICAL PUBLICATIONS

N/A

MEMBERSHIPS

Geological Society of America
National Groundwater Association
Project Management Institute

AWARDS

- Global Engagement Certificate, Kennesaw State University, November 2010 - Recognized achievements of valuable learning in areas of global perspectives, intercultural skills, environmental awareness and global citizenship.
- Commander's Award for Civilian Service, U.S. Department of the Army, November 2004 - An honorary award presented by the Department of the Army to civilian employees for commendable service or achievement.
- Medal for Global War on Terrorism, U.S. Department of Defense, November 2004 - Service medal awarded for direct support in service to the Global War on Terrorism.
- Various military awards, U.S. Army, January 1993-January 1996

TETRA TECH

Jason McGuirk
Wetland/Environmental Scientist IV

EXPERIENCE SUMMARY

Mr. Jason McGuirk has six years of professional experience in wetland delineation, permitting, fisheries and wildlife, and stream assessments and classification in Pennsylvania, New York, Ohio, and Alaska. Mr. McGuirk has conducted hundreds of wetland delineations, stream evaluations as well as conducted and produced habitat assessments, and post monitoring impact statements and assessments on over 800 miles of proposed natural gas pipeline, and fifty plus proposed well pad sites. He has extensive knowledge in watercourse classification and assessment including the Rosgen method. In particular attention of his has been focused on fisheries habitat and macro-invertebrate work, with over fifty miles of stream classifications in Alaska. Mr. McGuirk's educational background is in Fisheries and Aquaculture with a minor focus in Marine Biology and Wildlife management.

RELEVANT EXPERIENCE

Environmental Scientist III; Sunoco Logistics; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects, Engendered Species Surveys; Reptilia (*Glyptemys muhlenbergii*), Plantae (*Ellisia nyctelea*); Pennsylvania. Segments 1, 2, and 3 wetlands field lead, and crew leader. Responsibilities include organizing and conducting all field work operations for multiple wetlands crews, wetland delineations and stream assessments for the proposed 450 mile Pennsylvania Pipeline Project. Additional work included proposing potential re-route on an environmental basis.

Environmental Scientist III; MarkWest Liberty Midstream & Resources, LLC; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects; Pennsylvania. Responsible for performing and assisting with wetland delineations for various proposed natural gas pipeline projects in southwestern Pennsylvania. Specific tasks included field survey, report preparation, and wetland functional assessments.

Environmental Scientist III; MarkWest Ohio Gathering Company, LLC; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects; Ohio. Responsible for performing and assisting with wetland delineations for various proposed natural gas pipeline projects in eastern Ohio. Specific tasks included field survey, report preparation, and completion of Ohio EPA specific wetland and stream assessments.

EDUCATION

B.T. Fisheries and Aquaculture, SUNY Cobleskill, 2011T

REGISTRATIONS

Wild Plant Management Permit, PA, 2014, Permit # 14-651

AREA OF EXPERTISE

Wetland Delineation and Stream Identification, Fisheries, and Botanical Surveys

TRAINING/CERTIFICATIONS

Winter Vegetation ID, Rutgers University, 2012

Amtrak Contractor Certification, 2014

Certified Wetland Assessment Delineator, NY, 2009

OFFICE

Pittsburgh, PA

YEARS OF EXPERIENCE

6+

YEARS WITH TETRA TECH

2+

Environmental Scientist III; Gulfport Energy Corporation; Wetland Delineations for Miscellaneous Natural Gas Well Pad Projects; Ohio. Responsible for performing and assisting with wetland delineations for various proposed natural well pads southeastern Ohio. Specific tasks included field survey, report preparation, PCN preparation, and completion of Ohio EPA specific wetland and stream assessments.

Environmental Scientist III; MarkWest Liberty Midstream & Resources, LLC; Wetland Delineation and Engendered Species Survey (*Ranunculus flabellaris and Alopecurus aequalis*) for Vanport to Butler Gas Pipeline; Butler County, Pennsylvania. Responsible for performing and assisting with wetland delineation and endangered species survey along pipeline right-of-way. Specific tasks included field survey and report preparation.

Environmental Scientist III; Antero Resources Appalachian Corp.; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects; Ritchie and Doddridge Counties, West Virginia. Responsible for performing and assisting with wetland delineations for various proposed natural gas well pads and access roads in northern West Virginia. Specific tasks included field survey and report preparation.

Wetland & Watercourse Biologist; Chesapeake Energy; Schoharie County, PA; November 2011 to October 2012. Responsible for conducting wetland delineations for proposed pipe line routes and reroutes. Performed PA Rapid Assessments, stream evaluation, and preparation of wetland report for 30 miles of pipeline in Northeastern Pennsylvania.

Wetland & Watercourse Biologist; Southwest Energy L.P; Schoharie County, PA; November 2011 to October 2012. Responsible for conducting wetland delineations on proposed Well pad and compressor sites. Performed PA Rapid Assessments, stream evaluation, and preparation of wetland report for 15 proposed well pad locations in Northeastern Pennsylvania.

Wetland & Watercourse Biologist; Southwest Energy L.P; Susquehanna County, PA; November 2011 to October 2012. Responsible for conducting wetland delineations on proposed Well pad and compressor sites. Performed PA Rapid Assessments, stream evaluation, and preparation of wetland report for 20 proposed well pad locations in Northeastern Pennsylvania.

Wetland & Watercourse Biologist; Chesapeake Energy; Carroll, Jefferson County, OH; November 2011 to October 2012. Responsible for conducting wetland delineations for proposed pipe line routes and reroutes. Performed ORAM and QHEI Assessments, and preparation of wetland report for 30 miles of pipeline in Eastern Ohio.

Wetland & Watercourse Biologist; Shell Oil; Butler County, PA; November 2011 to October 2012. Responsible for conducting wetland delineations for proposed pipe line routes and reroutes. Performed PA Rapid Assessments, stream evaluation, and preparation of wetland report for 40 miles of pipeline in Western Pennsylvania.

Wetland & Watercourse Biologist; Chesapeake Energy; Schoharie County, PA; November 2011 to October 2012. Responsible for conducting Indiana Bat habitat surveys on multiple proposed natural gas pipelines in Northeastern Pennsylvania.

Wetland & Watercourse Biologist; Chesapeake Energy; Schoharie County, PA; November 2011 to October 2012. Responsible for conducting post construction habitat monitoring and assessment of constructed natural gas pipelines in Northeastern Pennsylvania.

CHRONOLOGICAL HISTORY

Wetland Environmental Scientist IV; Tetra Tech, Inc.; Pittsburgh, PA, June 2014 - Present

Wetland Environmental Scientist III; Tetra Tech, Inc.; Pittsburgh, PA, February 2013 - June 2014

Wetland & Watercourse Biologist; Hanover Engineering & Associates; Towanda, PA, November 2011 - October 2012

Assistant Hatchery Manager; SUNY Cobleskill; Cobleskill, NY, September – May of 2009- 2011

Biological Fisheries Technician, US Forest Service; Thorne Bay, AK, May 2010 - August 2010

Fisheries Technician, Cook Inlet Aquaculture Association, Kenai, AK, May 2009 – August 2009

SCIENTIFIC/TECHNICAL PUBLICATIONS

- McGuirk, J, M, "Walleye (*Sander vitreus)* spawning movements and habitat utilization in Otsego Lake, NY, 2011

MEMBERSHIPS

- N/A

AWARDS

- David E. Moorehouse Award for Outstanding Junior in Fisheries and Aquaculture B.T.

TETRA TECH

Cody R. Stoliker

ENVIRONMENTAL SCIENTIST I

EXPERIENCE SUMMARY

Cody R. Stoliker has approximately 1 year of professional experience in wetland delineation, permitting, and stream assessments and classification in Pennsylvania, New York, Ohio, and West Virginia. With 4 years of fisheries and wildlife management experience, specializing in large game conservation, Mr. Stoliker has technician experience working with bear, elk, moose, deer, and wolves in Wyoming, as well as biologist work with whitetail deer, red stag, feral hogs, and the endangered American Burying Beetle in Oklahoma along pipeline routes where he produced habitat assessments, post monitoring impact statements and performed population control. Mr. Stoliker is assisting Tetra Tech field leads and other environmental scientists to assess and delineate streams and wetlands along natural gas pipeline routes, access roads, right-of-ways, and well pad sites. Cody R. Stoliker's educational background is in Wildlife Management with a minor focus in wetland assessment/delineation and fisheries.

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RELEVANT EXPERIENCE

Environmental Scientist I; Sunoco Logistics; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects Pennsylvania. Responsible for performing and assisting with wetland delineations and stream assessments for the proposed Pennsylvania Pipeline Project. Other responsibilities included report preparation and wetland functional assessments.

Environmental Scientist I; MarkWest Liberty Midstream & Resources, LLC; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects; Pennsylvania. Responsible for performing and assisting with wetland delineations for various proposed natural gas pipeline projects in southwestern Pennsylvania. Specific tasks included field survey, report preparation, and wetland functional assessments.

Environmental Scientist I; MarkWest Ohio Gathering Company, LLC; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects; Ohio. Responsible for performing and assisting with wetland delineations for various proposed natural gas pipeline projects in eastern Ohio. Specific tasks included field survey, report preparation, and completion of Ohio EPA specific wetland and stream assessments.

EDUCATION

Bachelor of Technology, Wildlife Management, 2013, State University of New York at Cobleskill

AREA OF EXPERTISE

Large Game Wildlife Management & Conservation, Wetland Assessment

REGISTRATIONS/ AFFILIATIONS

Ducks Unlimited 2012- Present

Rocky Mountain Elk Foundation 2013 – Present

National Wild Turkey Federation 2013 - Present

TRAINING/CERTIFICATIONS

Certified Wetland Assessment Delineator, NY, 2010

NYS Certified Class A Interior Firefighter

OFFICE

Tetra Tech OGA
Pittsburgh, PA

YEARS OF EXPERIENCE

1

YEARS WITH TETRA TECH

1

SCIENTIFIC/TECHNICAL PUBLICATIONS

N/A

CHRONOLOGICAL HISTORY

Environmental Scientist I, Tetra Tech, 2014-2015, Pittsburgh, PA

Wildlife Biologist/Ranch Manager, Oklahoma Trophy Ranch, 2013-2014, Allen, OK

Wildlife Management Technician, Rolling Thunder & Rim Ranches, Spring-Fall 2013, Bondurant, WY

Assistant Herdsman, Bison Island, 2012-2013, Sharon Springs, NY

Avian Survey Technician, NYS Dept. of Environmental Conservation, Winter 2011, Albany NY

TETRA TECH

Stephanie A. Zabowski Lieb
Environmental Scientist III

EXPERIENCE SUMMARY

Ms. Stephanie Zabowski Lieb is a wetland/environmental scientist with 5+ years of experience in wetland delineation and stream evaluation, and rare, threatened & endangered botanical surveying and assessment, throughout Pennsylvania, Ohio, and West Virginia. This includes preparation of wetland delineation and stream evaluation reports, botanical reports, US Army Corps Joint and Nation Wide Permits, and PA Department of Environmental Protection General Permits. Stephanie has additional experience preforming geographic information systems (GIS) data processing and figure creation using ArcGIS10.1. She also has experience performing bat hibernaculum and summer roost tree habitat surveys in West Virginia.

RELEVANT EXPERIENCE

Wetland/Environmental Scientist III; Sunoco Logistics; OPP Natural Gas Pipeline Projects, Ohio and West Virginia; August 2015 to present. Responsibilities included aiding in wetland delineations and stream assessments for the proposed 70 miles of the Ohio Pipeline and West Virginia Pipeline Projects.

Wetland/Environmental Scientist III; MarkWest Liberty Midstream & Resources, LLC; Fox to Houston Natural Gas Pipeline Project, Washington County, PA; August 2015 to present. Responsible for conducting wetland delineations and stream assessments for the approximate 1 mile of proposed pipeline.

Environmental Scientist; Pittsburgh Botanic Garden; Kentucky Hollow Site, Allegheny County, PA; 2015. Responsible conducting wetland delineations and stream assessments for the approximate 40 acre area for proposed construction of trails and passive acid mine drainage treatment system. Prepared wetland delineation and stream assessment reports and associated GIS data processing and figure creation.

Environmental Scientist; EQT Gathering; NIMC S001 Pipeline Project, Allegheny & Washington Counties, PA; 2015. Responsible for conducting botanical survey for wild hyacinth (*Cammasia scilloides*) and snow trillium (*Trillium nivale*), PA state-listed species. Responsible for preparing a botanical survey report.

Environmental Scientist; Grace Baptist Church Additions; Grace Baptist Church, Allegheny County, PA; 2015. Responsible for compiling components of the NPDES permit package and GIS figure creation for church additions.

Environmental Scientist; NiSource Midstream Services, LLC; East Washington Gathering Pipeline Project, Washington County, PA; 2015. Assisted in the transplantation of Short's sedge

EDUCATION

B.S. Environmental Resource Management, The Pennsylvania State University, May 2009

Minors: Wildlife and Fisheries Science, May 2009; Watershed and Water Resources, May 2009

REGISTRATIONS

Wild Plant Management Permit, PA, 2015
Permit # 15-650

AREA OF EXPERTISE

Wetland Delineation and Stream Identification; RTE Botanical Surveys

TRAINING/CERTIFICATIONS

USFWS and WV DNR Sponsored Training for the Identification of the Federally Listed Running Buffalo Clover, Virginia Spirea, and Small Whorled Pogonia, May 2015.

2015 PA Plant Forum and Winter Woody ID workshop. Sponsored by the PA DCNR and Western Pennsylvania Conservancy, April 2015.

USACE 1987 Manual and Regional Supplement Wetland Delineation Training, Swamp School, 2013.

Ohio Rapid Assessment Method for Wetlands Training, Ohio EPA, 2013.

Grasses, Sedges and Rushes Identification Workshop. Taught by Sarah Chamberlain, 2013.

Sedge Identification Workshop. Taught by Dr. Timothy Block and Dr. Ann Rhoads, 2013.

OFFICE

Pittsburgh, PA

YEARS OF EXPERIENCE

5+

YEARS WITHIN FIRM

0

CONTACT

Stephanie.ZabowskiLieb@TetraTech.com

(*Carex shortiana*), a PA state-listed species, as part of mitigation request by PA DCNR. Responsible for associated GIS data processing and figure creation.

Environmental Scientist; West Newton Borough; 100 Pemberton Place Retaining Wall, Westmoreland County, PA; 2015. Responsible for compiling joint permit registration package and associated GIS figure creation for a 130 foot long retaining wall.

Environmental Scientist; Plum Borough School District; Regency Park Elementary School, Allegheny County, PA; 2015. Responsible for conducting wetland delineations and stream assessments for the approximate 5 acre school property. Prepared wetland delineation and stream assessment reports and associated GIS data processing and figure creation.

Environmental Scientist; Freeport Area School Athletic Field; Freeport Area School District, Butler County, PA; 2015. Responsibilities for compiling components of the NPDES permit package and associated GIS figure creation.

Environmental Scientist; EQT Corporation; Above Ground Storage Tank Inspection/Registration, various Counties, WV; 2014. Responsible for GIS data processing, shapefile creation, organization, progress tracking, and mapping of 1600+ above ground storage tanks.

Environmental Scientist; Sunoco Logistics; Pennsylvania Pipeline Project, Cambria County, PA; 2014. Responsible for conducting botanical survey for federally listed Northeastern Bulrush (*Scirpus ancistrochaetus*) along the 23 mile pipeline route in Cambria County, PA and associated data processing.

Environmental Scientist; Bethel Park Municipal Authority; Bethel Park Wastewater Treatment Plant Expansion, Allegheny County, PA; 2014. Responsible for compiling joint permit registration package and associated GIS figure creation for wastewater treatment plant expansion.

Environmental Scientist; EQT Gathering; Yablonski Well Line Project, Washington & Greene Counties, PA; 2014. Responsible for conducting botanical survey for fringed bluets (*Houstonia canadensis*) and tall larkspur (*Delphinium exaltatum*), PA state-listed species, and preparing associated botanical report for 3 mile pipeline project.

Environmental Scientist; Y-Grade Pipeline Project; Hilcorp Energy Company, Columbiana County, OH; 2014. Responsible for conducting wetland delineations and stream assessments of access roads for proposed pipeline project. Prepared wetland delineation and stream assessment report. Assisted in erosion and sediment control monitoring during pipeline construction.

Environmental Scientist; various projects; Antero Resources, various counties, WV; 2014. Responsible for conducting wetland delineations and stream assessments for various proposed pipeline projects. Prepared wetland delineation and stream assessment reports.

Biologist II; NRG Homer City Services, LLC; Homer City Ash Landfill Expansion, Indiana County, PA; 2013. Responsible for conducting wetland delineations and stream assessments for the approximate 130 acre proposed ash landfill expansion Prepared wetland delineation and stream assessment reports and associated GIS data processing and figure creation.

Biologist II; MarkWest Liberty Midstream & Resources, LLC; Burg to Wack Pipeline, Butler County, PA; 2013. Responsible for conducting wetland delineations and stream assessments for the approximate 2.5 mile proposed pipeline. Prepared wetland delineation and stream assessment reports, associated GIS data processing and figure creation, and PA DEP general permit package.

Biologist II; MarkWest Liberty Midstream & Resources, LLC; Bame to Bluestone Pipeline, Butler County, PA; 2013. Responsible for conducting wetland delineations and stream assessments for the approximate 3 mile proposed pipeline. Prepared wetland delineation and stream assessment reports, associated GIS data processing and figure creation, and PA DEP general permit package.

Biologist II; MarkWest Liberty Midstream & Resources, LLC; Stebbins to McElhinney Pipeline, Butler County, PA; 2013. Responsible for conducting wetland delineations and stream assessments for the approximate 3 mile proposed pipeline. Prepared wetland delineation and stream assessment reports, associated GIS data processing and figure creation, and PA DEP general permit package.

Biologist II; EQT Gathering, LLC; NIJU S026 Pipeline, Washington County, PA; 2013. Responsible for conducting wetland delineations and stream assessments for the approximate 2.5 mile proposed pipeline. Prepared wetland delineation and stream assessment reports, associated GIS data processing and figure creation, and PA DEP general permit package. Assisted with archeology field work and GIS figure creation.

Biologist II; MarkWest Liberty Midstream & Resources, LLC; Lynn to Stebbins Pipeline, Butler County, PA; 2013. Responsible for conducting a wetland delineation and stream investigation, as well as a botanical survey for a PA state-listed species. Prepared a wetland delineation and stream identification report, botanical survey report, associated GIS data processing and figure creation, and PA DEP general permit package.

Biologist II; EQT Gathering, LLC; MOME S007 Pipeline, Harrison County, WV; 2012. Responsible for preparing nationwide permit package. Also assisted in Indiana Bat habitat assessment and report preparation.

Environmental Scientist; Williams; Huczko to Clark Pipeline Project, Westmoreland County, PA; 2012. Assisted in surveys for PA state-listed species including purple fringeless orchid (*Platanthera peramoena*), bushy bluestem *(Andropogon glomeratus*), shining ladies' tresses (*Spiranthes lucida*), and mountain bugbane (*Actea podocarpa*). Prepared reports for PA state regulatory agencies and associated GIS figure creation.

Environmental Scientist; Williams; Jury to 6-inch Pipeline Project, Westmoreland County, PA; 2011. Assisted in botanical surveys for PA state-listed species including purple rocket (*Iodanthus pinnatifidus*), scouring rush (*Equisetum x ferrissii*), and Torrey's sedge (*Juncus torreyi*) for a 4 mile natural gas pipeline project. Prepared reports for PA state regulatory agencies and associated GIS figure creation.

Environmental Scientist; XTO; North Discharge/Indiana Extension Pipeline Project, Westmoreland & Indiana Counties, PA; 2011. Assisted in a wetland delineation/stream survey and a survey for PA state-listed species including purple fringeless orchid (Platanthera peramoena), bushy bluestem (Andropogon glomeratus), shining ladies' tresses (*Spiranthes lucida*), leafcup (*Smallanthus uvedalius*), and eastern coneflower (*Rudbeckia fulgida*) for a 12 mile natural gas pipeline project. Prepared reports for PA state regulatory agencies and associated GIS figure creation.

Environmental Scientist; Williams; Gamelands to Jordan Pipeline Project, Greene County, PA; 2011. Assisted in surveys for state-listed species including shining ladies' tresses (Spiranthes ovalis), wild senna (*Senna marilandica*), leaf-cup (*Smallanthus uvedalius*), sourwood (*Oxydendron arboreum*), crested dwarf iris *(Iris cristata*), St. Andrew's cross *(Hypericum stragulum*), harbinger-of-spring *(Erigenia bulbosa*), lobed spleenwort *(Asplenium pinnatifidum*), puttyroot (*Aplectrum hyemale*), single-headed pussytoes (*Antennaria solitaria*), and blue monkshood (*Aconitum uncinatum*). Prepared reports for PA state regulatory agencies.

Environmental Scientist; Range Resources; Multiple Temporary and Permanent Water Pipelines; Washington County, Pennsylvania. 2010 to 2011. Responsible for wetland delineations and stream evaluations on dozens of temporary and permanent water pipelines linking frac water impoundments in the Washington County area. Also prepared wetland delineation and stream assessment reports.

CHRONOLOGICAL HISTORY

Wetland/Environmental Scientist III; Tetra Tech, Inc.; Pittsburgh, PA, August 2015 – Present.

Environmental Scientist – Part-time; Pennsylvania Soil and Rock, Inc. Monroeville, PA, March 2015 – August 2015

Environmental Scientist; Dawood Engineering Inc., Canonsburg, PA, February 2014 – January 2015

Biologist II; AECOM Technical Services, Inc.; Pittsburgh, PA, August 2012 – February 2014

Environmental Scientist; Pennsylvania Soil and Rock, Inc.; Monroeville, PA, April 2010 – August 2012

Black Fly Suppression Program Intern; Pennsylvania Department of Environmental Protection; Pittsburgh, PA, May 2008 – August 2008

SCIENTIFIC/TECHNICAL PUBLICATIONS

- N/A

MEMBERSHIPS

- Botanical Society of Western Pennsylvania

AWARDS

- N/A

ATTACHMENT 15.2 - WETLAND RESTORATION PLAN

No permanent wetland impacts are associated with the Project activities and no Wetland Replacement Plan is required for the Project.

SECTION 16.0

REGISTRATION OF A GP-11

SECTION 16.0 - REGISTRATION OF A GP-11

This section is not applicable since no GP-11 registration has been proposed as part of the Project.

Attachment General-1a, Part 1

Allegheny County Conservation District GP Comment Response Package

TETRA TECH

March 29, 2016

PIT –XXXXXX

Project Number: 212IC-PB-00176

Allegheny County Conservation District
Attn: Mr. Matt Gordon
33 Terminal Way, Suite 325b
Pittsburgh, Pennsylvania 15219

RE: Equitrans, LP
Forward Township, Allegheny County, PA
GP050215245, GP080215213

Dear Mr. Gordon,

In response to your comments issued on December 8, 2015, please find the revised items for the Equitrans Expansion Chapter 105 GP-5 and GP-8 submission. Below are your comments followed by the corresponding responses.

Comment:

1. Please include the FERC docket number for the project on page 1 of the Chapter 105 General Permit Registration.

Response:

The complete FERC docket number of CP16-13-000 has been included on the Registration Form.

Comment:

2. Due to potential to impact Federally listed threatened and endangered species, impact to Section 10 Water (Monongahela River) of the Rivers and Harbors Act, and exceeding impact limits set forth in the PASPGP-4, the US Army Corp of Engineers will issue a separate permit for impacts to aquatic resources for this project.

Response:

Equitrans has met with the US Army Corp of Engineers to review this project.

Comment:

3. The project proposes a 20” gas utility bored under the Monongahela River, a PA Navigable water. A Submerged Lands License Agreement (SLLA) must be obtained before a permit is issued to occupy submerged lands of the Commonwealth.

Response:

A Submerged Land License Agreement has been prepared by PADEP Bureau of Waterways Engineering and Wetlands on December 17, 2015 and is in the process of obtaining final signatures by both parties.

Comment:

4. In the Chapter 105 General Permit Registration, Section G: Impacts Associated Project Work Site indicates 0.09 acres of permanent wetland impacts; attachment 15.2 Wetlands Restoration Plan indicates there are no permanent wetland impacts for the project and no wetland replacement is required. Please clarify this discrepancy.

Tetra Tech, Inc.
661 Andersen Drive, Pittsburgh, PA 15220
Tel 412.921.7090 Fax 412.921.4040 www.tetratech.com

Response:

Impacts to streams and wetlands have been revised to separate out the permanent impacts associated with the 50 permanent right-of-way. With that revision, the total permanent impacts for wetlands is 0.55 ac. The permanent impacts are not a loss of wetlands, as wetland restoration practices will be conducted. However, there are four wetlands where there will be a conversion of wetlands from PFO to PEM. This conversion will not negatively affect the hydrology of the watershed nor create an adverse impact to the watershed.

Comment:

5. There appears to be a timber bridge crossing of Bunola Run (WWF) under Section 9.0 Site-Specific and/or standard drawings on Figure 1B that is not documented in the project impacts under Section G Impacts Associated with Project Work Site or under Section 7. Stream Name and Chapter 93 Classifications. Please clarify the number of crossings on Bunola Run

Response:

On Figure 1A, there will be 1 timber mat bridge with the installation for the H-318 pipeline (Crossing #1 GP-5/8). Also on Figure 1A will be an additional pipeline crossing with the installation of a groundbed (crossing #2 GP-5). On Figure 1B, there will be 1 timbermat crossing (crossing #3 GP-8). Wetland W-BB13-UP on Figure 1B will no longer be impacted by this project (remove GP-5/8).

Comment:

6. The wetland crossing of W-BB7 exceeds the 200' threshold set in conditions of Chapter 105 GP-8 Temporary Road Crossings permit. The crossing may be permitted under GP-5 Utility Line Stream Crossings if used once for construction purposes; if the crossing will be used as a continual and general transportation route through the ROW, a Joint Permit Application will be required.

Response:

A Joint Permit Application has been submitted to PADEP SWRO for submittal to US Army Corps of Engineers for the temporary road crossing of wetland W-BB7.

Comment:

7. Please provide documentation that the PNDI hits for potential impacts to threatened and endangered species have been resolved with the appropriate jurisdictional agencies.

Response:

Clearance from PA Fish & Boat Commission and USFWS has been attached. It is anticipated that clearance from the DCNR, the remaining PNDI agency will be obtained during the Summer of 2016 after the survey for state-listed plant species has occurred.

Additionally, permanent impacts have been calculated and separated for resources within the permanent maintained right-of-way.

Attached are 2 copies of the revised items for your review and approval. Please let me know if you have any questions during your review. I can be contacted directly at 412-921-8051 or via email at heather.trexler@tetratech.com.

Sincerely,

Heather Trexler, PG
Project Manager

Enclosures:
CC: Stephanie Frazier, Equitrans, LP

3150-PM-BWEW0500 Rev. 2/2014
Form

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERWAYS ENGINEERING AND WETLANDS

CHAPTER 105
GENERAL PERMIT REGISTRATION

TYPE OF GENERAL PERMIT: ☒ **New Permit**
PLEASE MARK ("X") ONE: ☐ **Transfer of Existing Permit** *(Complete Section A, C & H below and all of form 3150-PM-BWEW0016)*

PLEASE MARK ("X") ALL THAT APPLY:

- ☐ GP- 1 Fish Habitat Enhancement Structures
- ☐ GP- 2 Small Docks & Boat Launching Ramps
  - **Please mark ("X") the specific type of project:**
    - ☐ private recreational dock
    - ☐ public access facility
    - ☐ public service facility
    - ☐ other private or commercial facility
- ☐ GP- 3 Bank Rehabilitation, Bank Protection and Gravel Bar Removal
- ☐ GP- 4 Intake and Outfall Structures
- ☒ GP- 5 Utility Line Stream Crossing
- ☐ GP- 6 Agricultural Crossings & Ramps
- ☐ GP- 7 Minor Road Crossings
- ☒ GP- 8 Temporary Road Crossings
- ☐ GP- 9 Agricultural Activities
- ☐ GP-10 Abandoned Mine Reclamation
- ☐ GP-11 Maintenance, Testing, Repair, Rehabilitation, or Replacement of Water Obstructions and Encroachments (reviewed by DEP Regional Office only)
- ☐ GP-15 Private Residential Construction in Wetlands

☒ **Activity Related to Oil and Gas Exploration, Production or Transmission**

☒ **Activity Subject to FERC approval (Docket number** CP16-13-000) ☐ **FERC Natural Gas Act Facility**

SECTION A. APPLICANT INFORMATION

Applicant's Name / Client	**DEP Client ID#** (if known)	**Employer ID#** (EIN)
Equitrans, LP	**163329**	**251776875**

Client Information - Please select Client Type / Code from drop down box under the correct entity shown to the right (or may be written in) →	**Government**	**Non-Government**	**Individual**
		OTHER Other (Non-G	

Mailing Address	**City**	**State**	**ZIP + 4**
625 Liberty Avenue, Suite 1700	Pittsburgh	PA	15222

Contact Person – Last Name	First	MI	Suffix	**Telephone**	**Email Address**
Frazier	Stephanie			(412) 553-5798	Sfrazier@eqt.com

SECTION B. CONSULTANT INFORMATION (Complete if different than above) ☐ N/A

Contact Person – Last Name	First	MI	Suffix	**Consultant's Title**	**Consulting Firm**
Trexler	Heather			Project Manager	Tetra Tech, Inc.

Mailing Address	**City**	**State**	**ZIP + 4**
661 Andersen Drive, Foster Plaza 7	Pittsburgh	PA	15220

Telephone	**Fax**	**Email**	**Employer ID#** (EIN)
(412) 921-8051	(412) 921-4040	Heather.trexler@tetratech.com	95-4148514

SECTION C. PROJECT INFORMATION

Project /Site Name:	**DEP Site ID#** (if known or leave blank)
Equitrans Expansion Project	

Client Relationship - Please select Site-to-Client Relationship / Code from drop down box to the right (or may be written in) →	Double-click on shaded area below to select correct Site-to-Client Relationship / Code ↓

County	**Municipality** ☐ City ☐ Borough ☒ Township	**OWNOP Owner/Operator**
Allegheny	Forward	

Site Location / Address	**City**	**State**	**ZIP + 4**
Pangburn Hollow Road, Applegate Gathering System	Bunola	PA	15063

Collection Method: ☐ EMAP ☐ HGIS ☒ GISDR* ☐ ITPMP ☐ GPS ☐ WAAS ☐ LORAN

Check the horizontal reference datum (or projection datum) employed in the collection method.
EMAP and HGIS (PNDI) have known datum and do not require checking here. ☐ NAD27 ☒ NAD83 ☐ WGS84 (GEO84)

Enter the date of collection if coordinates were derived from GPS, WAAS or LORAN. mm dd yyyy

Applicant's Name	GENERAL PERMIT REGISTRATION	
Equitrans, LP		

SECTION D. RESOURCE IDENTIFICATION

Please place an "X" in the appropriate box next to each item to indicate the applicant has identified any of these resources which may be present at the project site.

Each General Permit (GP) has a specific set of restrictions and some resources may require certain actions or prohibit the project from being eligible to register use of the GP. *This list is not all-inclusive, please see GPs for details.*

YES	NO		YES	NO	
☐	☒	National Register of Historic Places	☒	☐	Threatened and Endangered Species
☐	☒	National Registry of Natural Landmarks	☐	☒	Wild or Stocked Trout Streams
☐	☒	Local historical site	☐	☒	Wild and Scenic Rivers
☐	☒	Exceptional Value (EV) Waters	☒	☐	Wetlands
☐	☒	High Quality (HQ) Waters	☐	☒	Other _____

SECTION E. REGISTRATION CHECK LIST AND REQUIREMENTS

Please place an "X" next to each item (1 - 16) to ensure it is completed and/or provided. Unless otherwise specified, all items are ***required*** to ensure a complete Registration package. ****Provide ONE (1) ORIGINAL and ONE (1) COPY of the Registration package****	Applicant Entry	DEP Use Only
1. **General Permit Registration form** properly completed and signed	☒	☐
☒ I have read the terms and conditions of the GP(s) indicated above.	☒	☐
2. **General Permit Registration Fee and Chapter 105 Fee Calculation Worksheet**	☒	☐
3. Notification sent to the Municipality & County (copy of **General Permit Registration form**)	☒	☐
4. **PASPGP-4 Cumulative Impact Project Screening Form** properly completed	☒	☐
5. **Location Map** (USGS quad map) with project site marked	☒	☐
6. **Color Photographs** with dates and descriptions *(see instructions)* ☐ ***N/A***	☒	☐
7. **Stream Name and Chapter 93 Classification** (example: UNT to #40637 HOUSE RUN, HQ-WWF/EV) Please refer to Section 7, Stream Name and Chapter 93 Classifications.	☒	☐
8. **Project Description** including proposed impacts and PNDI Avoidance Measures (if applicable) Please refer to Section 8, Project Description.	☒	☐
9. **Site Specific and/or Standard Drawings** depicting the project's GP activities	☒	☐
10. **Site Plan** depicting the site of the project's GP activities *(see Section F.)*	☒	☐
11. **Erosion & Sediment Control Plan (E&S Plan)** *(required for GP-11 only - see instructions)*	☒	☐
12. **Written Directions to Project Site:** Please refer to Section 12, Written Directions to the Project Site.	☒	☐
13. **Pennsylvania Natural Diversity Inventory (PNDI):** **Please place an "X" next to the appropriate box indicating the information provided:**		
☐ Completed PNDI Project Planning & Environmental Review Form	☐	☐
☐ Initialed PNDI Project Environmental Review Search Receipt showing **"**No Known Impacts"	☐	☐
☐ Initialed PNDI Project Environmental Review Search Receipt showing "Avoidance Measures" which have ALSO been incorporated into the project description	☐	☐
☒ Initialed PNDI Project Environmental Review Search Receipt showing "Potential Impacts" AND documentation of appropriate agency coordination required on PNDI Receipt	☒	☐
14. **Bog Turtle Habitat Screening:** **Please place an "X" next to the appropriate box indicating the information provided:**		
☐ Completed Request for a Bog Turtle Habitat Screening Form	☐	☐
☐ "No Effect" determination from the Army Corp of Engineers	☐	☐
☐ Documented clearance from the US Fish and Wildlife Services	☐	☐
☒ N/A	☒	☐

Applicant's Name	GENERAL PERMIT REGISTRATION	
Equitrans, LP		

15. Activities which impact wetlands:		
Please place an "X" next to the appropriate box indicating the information provided:	☐	☐
☐ N/A because no wetland impacts are proposed or no compensatory mitigation is necessary.	☒	☐
☒ A wetland delineation with complete data sheets in accordance with the 1987 Corps of Engineers Wetland Delineation Manual AND the appropriate Regional Supplements to the Corps of Engineers Wetland Delineation Manual for use in Pennsylvania.	☐	☐
☐ If direct or indirect wetland impacts are greater than 0.05 acres, a compensatory mitigation plan in accordance with the Department's Replacement criteria which provides compensation at a minimum one to one acre ratio.	☐	☐
☐ **If compensatory mitigation onsite is determined not feasible:** A check, number _____, in the amount of $_____ payable to the National Fish and Wildlife Foundation, N.A. 1237, as compensatory mitigation for _____ acres of impact in wetlands, in accordance with the Pennsylvania Wetland Replacement Project.	☐	☐
16. Registration of a GP-11:		
Please place an "X" next to the appropriate box indicating the worksheet(s) provided:	☒	☐
☒ N/A because not registering use of GP-11	☐	☐
☐ E&S Plan	☐	☐
☐ Project Inventory	☐	☐
☐ Bridge and/or Culvert Replacement Projects or Projects That Change the Waterway Opening	☐	☐

SECTION F. SITE PLAN

Please place an "X" next to each item to ensure it is shown on the site plan. Unless otherwise specified in the permit, all items are ***required*** to ensure a complete Registration package.

YES	NO		YES	NO	
☒	☐	Stream Name: Please see Section 7.	☒	☐	100 year Flood Elevation OR FEMA map
☒	☐	Stream Limits and Flow Direction	☒	☐	Limits of Earth Disturbance Associated with Activity
☒	☐	Stream Impacts on site (including dimensions)	☒	☐	Location of Property Lines Relative to the Project
☒	☐	Wetlands on site (including acres)	☒	☐	Existing Utilities, ROWs, Easements
☒	☐	Wetland Impacts on site (including acres)	☒	☐	Existing Buildings, Roadway, etc.
☒	☐	Other Waters (i.e. pond, lakes, wetlands)	☒	☐	Proposed Buildings, Roadways, ROW etc.
☒	☐	Site Specific / Standard Drawings location(s)	☐	☒	Other _____
☒	☐	Photograph location(s)	☐	☒	Other _____

SECTION G. IMPACTS ASSOCIATED WITH PROJECT WORK SITE

Please provide the project's total impacts for each category in the table provided below.

Please complete and provide a separate chart detailing the information for each impact to waters and wetlands. Include the identifier developed in Section E.9. for each location. All impact acreages and number of impacts should be totaled on each page and then the project's total impacts provided in the table below.

The Additional Impacts Associated with Project Work Site (3150-PM-BWEW0554) worksheet may be used but is not required.

Total Impacts for the Project	**Temporary Impacts** (acreage & number of impacts)		**Permanent Impacts** (acreage & number of impacts)	
Total Waters Impacts	3.85 ac	3 number	1.43 ac	4 number
Total Impacts to Wetlands	0.03 ac	3 number	0.509 ac	7 number
Total Impacts for this Project	3.88 ac	6 number	1.94 ac	11 number

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Please complete and provide this chart (as many as is needed) as part of Section G of the General Permit Registration (3150-PM-BWEW0500) for impact locations.

ADDITIONAL IMPACTS ASSOCIATED WITH PROJECT WORK SITE

Provide the unique identifier (from Section E.9.), latitude and longitude, total area and dimensions of impact to waters (including streams, lakes, ponds, etc) and/or wetlands associated with your project for each category below.

The impacts for each identifier below should be totaled and provided at the bottom of the page, then each page totaled. An account of total impacts for the project is to be provided in the chart found in Section G of the General Permit Registration Form.

Identifier S-BB5 - Monongahela River

* 43,560 square feet per acre

Impact Latitude (DMS) 40° 14' 57.63" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 57' 28.24" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☐ *N/A*	_____ ac	_____' x _____'	0.032 ac	860' x 1.6'
	Floodway	☐ *N/A*	_____ ac	_____' x _____'	0.034 ac	925' x 1.6'
Total Impacts to Waters (a)			**_____ ac**		**0.034 ac**	
Impacts to Wetlands (b)		☒ *N/A*	**_____ ac**	_____' x _____'	**0.000 ac**	_____' x _____'
Total Impacts for this location (c)			**_____ ac**		**0.034 ac**	

Identifier S-BB4 (Crossing #1)

* 43,560 square feet per acre

Impact Latitude (DMS) 40° 14' 16.16" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 56' 48.27" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☐ *N/A*	0.011 ac	20' x 25'	0.023 ac	20' x 50'
	Floodway	☐ *N/A*	0.678 ac	120' x 75'	0.643 ac	_____' x _____'
Total Impacts to Waters (a)			**0.689 ac**		**0.666 ac**	
Impacts to Wetlands (b)		☒ *N/A*	**0.000 ac**	_____' x _____'	**0.000 ac**	_____' x _____'
Total Impacts for this location (c)			**0.689 ac**		**0.666 ac**	

Identifier S-BB4 (Crossing #2)

* 43,560 square feet per acre

Impact Latitude (DMS) 40° 14' 18.48" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 56' 43.28" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☐ *N/A*	_____ ac	_____' x _____'	0.148 ac	20' x 322'
	Floodway	☐ *N/A*	_____ ac	_____' x _____'	0.418 ac	_____' x _____'
Total Impacts to Waters (a)			**_____ ac**		**0.566 ac**	
Impacts to Wetlands (b)		☒ *N/A*	**0.0 ac**	_____' x _____'	**0 ac**	_____' x _____'
Total Impacts for this location (c)			**0.0 ac**		**0.566 ac**	

Total Impacts for "Page **1** of **4**" (same as above)	**Temporary Impacts** (acreage & number of impacts)		**Permanent Impacts** (acreage & number of impacts)	
Total Waters Impacts (sum of a)	0.689 ac	1 number	1.266 ac	3 number
Total Impacts to Wetlands (sum of b)	_____ ac	0 number	_____ ac	0 number
Total Impacts for this page (sum of c)	0.689 ac	1 number	1.266 ac	3 number

Please complete and provide this chart (as many as is needed) as part of Section G of the General Permit Registration (3150-PM-BWEW0500) for impact locations.

ADDITIONAL IMPACTS ASSOCIATED WITH PROJECT WORK SITE

Provide the unique identifier (from Section E.9.), latitude and longitude, total area and dimensions of impact to waters (including streams, lakes, ponds, etc) and/or wetlands associated with your project for each category below.

The impacts for each identifier below should be totaled and provided at the bottom of the page, then each page totaled. An account of total impacts for the project is to be provided in the chart found in Section G of the General Permit Registration Form.

Identifier W-BB11 * 43,560 square feet per acre

Impact Latitude (DMS) 40° 14' 12.94" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 56' 44.64" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☒ *N/A*	0.000 ac	____' x ____'	0.000 ac	____' x ____'
	Floodway	☒ *N/A*	0.000 ac	____' x ____'	0.000 ac	____' x ____'
Total Impacts to Waters (a)			**0.000 ac**		**0.000 ac**	
Impacts to Wetlands (b)		☐ *N/A*	**0.000 ac**	____' x ____'	**0.027 ac**	25' x 47'
Total Impacts for this location (c)			**0.000 ac**		**0.027 ac**	

Identifier W-BB10 * 43,560 square feet per acre

Impact Latitude (DMS) 40° 14' 0.91" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 56' 37.43" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☒ *N/A*	0.000 ac	____' x ____'	0.000 ac	____' x ____'
	Floodway	☒ *N/A*	0.000 ac	____' x ____'	0.000 ac	____' x ____'
Total Impacts to Waters (a)			**0.000 ac**		**0.000 ac**	
Impacts to Wetlands (b)		☐ *N/A*	**0.014 ac**	25' x 24'	**0.009 ac**	25' x 16'
Total Impacts for this location (c)			**0.014 ac**		**0.009 ac**	

Identifier W-BB9 * 43,560 square feet per acre

Impact Latitude (DMS) 40° 13' 59.84" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 56' 36.56" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☒ *N/A*	0.000 ac	____' x ____'	0.000 ac	____' x ____'
	Floodway	☒ *N/A*	0.000 ac	____' x ____'	0.000 ac	____' x ____'
Total Impacts to Waters (a)			**0.000 ac**		**0.000 ac**	
Impacts to Wetlands (b)		☐ *N/A*	**0.015 ac**	11' x 60'	**0.001 ac**	____' x ____'
Total Impacts for this location (c)			**0.015 ac**		**0.001 ac**	

Total Impacts for "Page **2** of **4**" (same as above)	**Temporary Impacts** (acreage & number of impacts)		**Permanent Impacts** (acreage & number of impacts)	
Total Waters Impacts (sum of a)	0.000 ac	0 number	0.000 ac	0 number
Total Impacts to Wetlands (sum of b)	0.029 ac	2 number	0.037 ac	3 number
Total Impacts for this page (sum of c)	0.029 ac	2 number	0.037 ac	3 number

Please complete and provide this chart (as many as is needed) as part of Section G of the General Permit Registration (3150-PM-BWEW0500) for impact locations.

ADDITIONAL IMPACTS ASSOCIATED WITH PROJECT WORK SITE

Provide the unique identifier (from Section E.9.), latitude and longitude, total area and dimensions of impact to waters (including streams, lakes, ponds, etc) and/or wetlands associated with your project for each category below.

The impacts for each identifier below should be totaled and provided at the bottom of the page, then each page totaled. An account of total impacts for the project is to be provided in the chart found in Section G of the General Permit Registration Form.

Identifier W-BB8 — * 43,560 square feet per acre

Impact Latitude (DMS) 40° 13' 58.86" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 56' 32.90" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☒ *N/A*	0.000 ac	____' x ____'	____ ac	____' x ____'
	Floodway	☒ *N/A*	0.000 ac	____' x ____'	0.00 ac	____' x ____'
Total Impacts to Waters (a)			**0.000 ac**		**0.00 ac**	
Impacts to Wetlands (b)		☐ *N/A*	**0.000 ac**	____' x ____'	**0.030 ac**	45' x 29'
Total Impacts for this location (c)			**0.000 ac**		**0.030 ac**	

Identifier W-BB7 — * 43,560 square feet per acre

Impact Latitude (DMS) 40° 13' 51.07" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 56' 11.39" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☒ *N/A*	0.000 ac	____' x ____'	0.00 ac	____' x ____'
	Floodway	☒ *N/A*	0.000 ac	____' x ____'	0.00 ac	____' x ____'
Total Impacts to Waters (a)			**0.000 ac**		**0.00 ac**	
Impacts to Wetlands (b)		☐ *N/A*	**____ ac**	____' x ____'	**0.372 ac**	324' x 50'
Total Impacts for this location (c)			**0.00 ac**		**0.372 ac**	

Identifier W-BB6 — * 43,560 square feet per acre

Impact Latitude (DMS) 40° 13' 46.26" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 56' 04.77" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☒ *N/A*	0.000 ac	____' x ____'	0.00 ac	____' x ____'
	Floodway	☒ *N/A*	0.000 ac	____' x ____'	0.00 ac	____' x ____'
Total Impacts to Waters (a)			**0.000 ac**		**0.00 ac**	
Impacts to Wetlands (b)		☐ *N/A*	**____ ac**	____' x ____'	**0.070 ac**	45' x 68'
Total Impacts for this location (c)			**____ ac**		**0.070 ac**	

Total Impacts for "Page 3 of 4" (same as above)	**Temporary Impacts** (acreage & number of impacts)		**Permanent Impacts** (acreage & number of impacts)	
Total Waters Impacts (sum of a)	0.000 ac	0 number	0.000 ac	0 number
Total Impacts to Wetlands (sum of b)	0.000 ac	0 number	0.472 ac	3 number
Total Impacts for this page (sum of c)	0.000 ac	0 number	0.472 ac	3 number

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERWAYS ENGINEERING AND WETLANDS

Please complete and provide this chart (as many as is needed) as part of Section G of the General Permit Registration (3150-PM-BWEW0500) for impact locations.

ADDITIONAL IMPACTS ASSOCIATED WITH PROJECT WORK SITE

Provide the unique identifier (from Section E.9.), latitude and longitude, total area and dimensions of impact to waters (including streams, lakes, ponds, etc) and/or wetlands associated with your project for each category below.

The impacts for each identifier below should be totaled and provided at the bottom of the page, then each page totaled. An account of total impacts for the project is to be provided in the chart found in Section G of the General Permit Registration Form.

Identifier S-BB3 * 43,560 square feet per acre

Impact Latitude (DMS) 40° 13' 41.59" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 55' 57.39" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☐ *N/A*	0.017 ac	30' x 25'	0.034 ac	30' x 50'
	Floodway	☐ *N/A*	0.361 ac	210' x 75'	0.134 ac	117' x 50'
Total Impacts to Waters (a)			**0.378 ac**		**0.168 ac**	
Impacts to Wetlands (b)		☒ *N/A*	**0.000 ac**	' x '	**0.0 ac**	' x '
Total Impacts for this location (c)			**0.378 ac**		**0.168 ac**	

Identifier W-BB12 * 43,560 square feet per acre

Impact Latitude (DMS) 40° 13' 33.35" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 55' 43.02" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☒ *N/A*	0.000 ac	' x '	0.0 ac	' x '
	Floodway	☒ *N/A*	0.000 ac	' x '	0.0 ac	' x '
Total Impacts to Waters (a)			**0.000 ac**		**0.0 ac**	
Impacts to Wetlands (b)		☐ *N/A*	**0.005 ac**	23' x 9.6'	**0.0 ac**	1' x 2'
Total Impacts for this location (c)			**0.005 ac**		**0.0 ac**	

Identifier S-BB4 (Crossing #3 and floodplain) * 43,560 square feet per acre

Impact Latitude (DMS) 40° 14' 16.16" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 79° 56' 48.27" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☐ *N/A*	0.007 ac	20' x 16'	ac	' x '
	Floodway	☐ *N/A*	2.77 ac	' x '	ac	' x '
Total Impacts to Waters (a)			**2.78 ac**		**ac**	
Impacts to Wetlands (b)		☒ *N/A*	**ac**	' x '	**ac**	' x '
Total Impacts for this location (c)			**2.78 ac**		**ac**	

Total Impacts for "Page **4** of **4**" (same as above)	**Temporary Impacts** (acreage & number of impacts)		**Permanent Impacts** (acreage & number of impacts)	
Total Waters Impacts (sum of a)	3.158 ac	2 number	0.168 ac	1 number
Total Impacts to Wetlands (sum of b)	0.005 ac	1 number	0.000 ac	1 number
Total Impacts for this page (sum of c)	3.163 ac	3 number	0.168 ac	2 number

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DEP USE ONLY
☐ Category I
☐ Category II
☐ Category III

Applicant / Project Name: Equitrans, LP/ Equitrans Expansion Project	County(s): Allegheny, Greene, Washington

PASPGP-4 CUMULATIVE IMPACTS PROJECT SCREENING FORM

The following questionnaire must be completed and submitted to determine the appropriate Pennsylvania State Programmatic General Permit-4 (PASPGP-4) review procedure. Incomplete submissions will be returned. An "Overall Project," as defined for this form, includes all regulated activities that are reasonably related and necessary to accomplish the "Overall Project" purpose. An "Overall Project" must have a clear purpose, be able to function, and have independent utility. All regulated activities, including the direct and indirect impacts occurring as a result of the regulated activities, which are associated with the "Overall Project", should be considered cumulatively when completing this form. For linear projects, all impacts to waters and wetlands associated with the "Overall Project" should be added together and cumulatively viewed as impacts associated with the "Overall Project", which must have a defined beginning and end point. For linear projects, the application shall include a plan that depicts the location of the beginning and end points of the overall project, and all proposed crossings. See the PASPGP-4 permit document at: www.nab.usace.army.mil/Wetlands%20Permits and Part II, for the definition of Independent Utility and Single and Complete Project (discussion of "Overall Project").

The PASPGP-4authorizes the discharge of dredged or fill materials and/or the placement of structures, for a single and complete project, including all attendant features, both temporary and/or permanent, which individually or cumulatively results in impacts to 1.0 acre or less of waters of the United States including jurisdictional wetlands. These discharges and placement of structures must comply with all the terms, conditions, and processing procedures identified in this PASPGP-4. Refer to the definitions and sketches in PASPGP-4, Part II for calculating the 1.0-acre eligibility threshold for linear projects.

Determination of PASPGP-4 eligibility – For Category I and II Activities, PADEP/County Conservation Districts will review the applications, if applicable, and verify if work is authorized by PASPGP-4. For Category III Activities, the Corps reviews applications and makes a case by case determination that work is eligible for authorization under PASPGP-4.

Applications for activities that individually or cumulatively impact more than 1.0 acre of waters of the United States, including jurisdictional wetlands, including all attendant features, both temporary and permanent, for a single and complete project; or that impact greater than 250 linear feet of streams, rivers, or other watercourses, except fish habitat enhancement structures authorized under PADEP GP-1 and bank rehabilitation and protection, authorized under PADEP GP-3 that affect 500 linear feet or less, are sent to the Corps as a Category III Activity, under PASPGP-4, Part IV, C, 2. The 1.0 acre area measurement includes the sum total of all waters of the United States including both jurisdictional wetlands and streams, rivers, other watercourses.

- For linear projects, the 250 linear foot Category III Activity threshold for stream impacts is applied to the total cumulative impacts of all crossings associated with the overall linear project, regardless of the type of PADEP authorization or combination of authorizations used to approve the overall project.
- Overall linear projects that have cumulative permanent and temporary impacts to waters of the United States, including jurisdictional wetlands, which exceed 1.0 acre, may still be eligible for PASPGP-4 authorization through a Category III review, provided no single and complete project exceeds the 1 acre threshold (see PASPGP-4, Part II for definition of single and complete project and acreage calculations). This verification of eligibility will be made by the Corps of Engineers.
- For phased projects, including phased linear projects, an overall project plan depicting all previously authorized or proposed impacts to waters and/or wetland is required as part of the application. A plan depicting phase I of the overall project would be submitted with any applications associated with phase I. At a later date, when applications associated with phase II are submitted, an overall plan that depicts the impacts for phase I and phase II is required. For example, if a utility line was previously authorized to run from point A to point B, and the permittee now wants to expand the utility line to point C, the plan will depict from point A to point C. In such a case, the overall project has been expanded to extend from point A to point C; the portion from point A to point B is needed for the section from point B to point C to function and meet the overall project purpose. If plan is not submitted as part of application, the application for the purposes of PASPG-4 will be considered incomplete and the application may be sent to the Corps as a Category III Activity.

SECTION A: PROPOSED IMPACTS

Provide the size of impacts to waters and/or wetlands associated with your application, including temporary and/or permanent impacts, and direct and indirect impacts.

Included in this calculation are the areas directly and indirectly affected by the regulated activities, including the area of waters and/or wetlands filled, drained and/or flooded as a result of the regulated activities. See PASPGP-4, Part II, Definitions, for calculation of linear footage of stream impact, and Part IV, C, 2 for thresholds which require a Corps review of application (Category III Activity).

PADEP GP–11 allows for the registration of multiple overall projects at one time through submission of a project/work site table that identifies each of the separate overall projects. For work associated with PADEP GP-11 registrations, impacts associated with each project/work site should be list separately. This can be done through a separate PASPGP-4 Project Screening Form for each project/work site, or submission of a separate document/table that identifies each separate project/work site, the proposed work and impact information, as required by this section.

		square feet	linear feet
Permanent Impacts	**to waters:**	0	0
	to wetlands:	2,935	
Temporary Impacts	**to waters:**	14,982	644
	to wetlands:	10,219	

SECTION B: OTHER CHAPTER 105/SECTION 10/404 AUTHORIZATIONS

YES NO

☐ ☒ 1. If known, has any work associated with the Overall Project been previously authorized by the Corps or DEP? If YES, please complete the table below. If additional space is needed, please attach the applicable information. Include the type of authorization or permit, permit or authorization number(s), date(s) of issuance, and permitted impacts (including square feet and/or linear footage), if applicable, with your application/registration form(s).Types of authorizations or permits may be abbreviated and include: Corps Nationwide Permit, Corps Individual Permit, Corps PASPGP, DEP General Permit, DEP Individual Permit (Dam and/or Encroachment) or DEP Environmental Assessment. See PASPGP-4, Part IV, C, 3 for applications which require a Corps review (Category III Activity).

EXAMPLES:

a. If application is associated with the expansion of a residential development, i.e., construction of phase II, the authorizations and impacts, if applicable, associated with construction of phase I are to be identified and listed.

b. If application is associated with a linear project, i.e., sewer line, waterline, utility line, etc., and the proposed work is an extension or additional phase being added to a previous segment, the authorizations, and impacts, if applicable, associated with construction of the previous segment(s) are to be identified and listed. For example, if a utility line is constructed from point A to point B, and a year later an extension of the line to point C is proposed, the authorizations and impacts associated with construction of point A to point B should be listed/identified. In this case, the overall project is from point A to point C, as the portion from point A to point B is needed for the section from point B to point C to function and meet the overall project purpose.

Authorization Type	**Authorization Number**	**Date** (mm/dd/yyyy)	**Permitted Impacts**	
			wetlands	**waters**

YES NO

☐ ☒ 2. Are additional Corps and/or DEP authorizations required for your proposed work to function and have independent utility? If YES, please complete the table below. If additional space is needed, please attach the applicable information.

EXAMPLES:

a. Development of a residential subdivision may require the filling of waters and/or wetlands for the construction of access roads, utility line crossings, and/or lot development. In such a case, if application is only for the utility lines, the work and impacts associated with the road crossings and lot development need to be identified. For the overall development to function, the road crossings and lot development are needed, not just utilities.

b. If widening of a road for construction of a turn lane is needed to facilitate an industrial development, applications associated for the industrial development to construct utility lines and lot development need to include the work and impacts associated with the construction of the turn lane. The construction of the turn lane is needed for the industrial development to function; the two projects are not separate independent projects.

c. If the application is associated with a linear project, such as an underground electric line or waterline, and additional permits are needed for the utility lines to function, i.e., convey electricity or water from source to user, the additional work and impacts need to be identified. For the overall utility line to function the entire line needs to be constructed; a segment that will not function does not have independent utility.

Authorization Type	Date (if known)	Anticipated Impacts	
		wetlands	waters

SECTION C: ACTIVITIES RELATED TO RESIDENTIAL, COMMERCIAL AND INSTITUTIONAL DEVELOPMENTS

The term "Subdivision", for the purposes of this form, is defined as the division or redivision of a lot, tract or parcel of land into two or more lots, tracts, parcels or other divisions of land including changes to existing lot lines.

YES NO

☐ ☒ 1. Does the Overall Project involve the construction or expansion of a residential, commercial or institutional subdivision or development? If YES, proceed to question 2. If NO, leave questions 2 and 3 blank.

☐ ☐ 2. Does greater than 0.25 acres of wetlands exist within the property boundary (not including those being directly impacted as part of this application)? If YES, provide wetland acreage: _____ acres. If NO, leave question 3 blank.

☐ ☐ 3. Are you proposing to protect the wetland area(s) through a deed restriction or conservation easement that follows the Corps' Model Conservation Instruments? If YES, attach a copy of the proposed deed restriction or conservation easement to this form and submit with your application/registration form. Model Conservation Instruments are available at www.nab.usace.army.mil/Wetlands%20Permits/. Failure to submit a proposed deed restriction or conservation easement with permit application/registration form requires a Category III review under PASPGP-4, Part IV, C, 24.

SECTION D: CERTIFICATION

I certify that the information provided on this form is true and correct to the best of my knowledge and information. If any of the information and/or plans is found to be in error, falsified, and/or incomplete, your Chapter 105/PASPGP-4 authorization/verification may be subject to modification, suspension, or revocation in accordance with applicable regulations.

Signature of Applicant

3/17/2016
Date

Stephanie Frazier – Supervisor Permitting - Environmental
Name Typed or Printed

End of Line
Lat: 40° 15' 15.276" N
Lon: 79° 57' 45.004" W

S-BB1 (a) - UNT to Lobbs Run (WWF)
GP-5
Lat: 40° 15' 13.44" N
Lon: 79° 57' 44.28" W

S-BB1 - Lobbs Run (WWF)
GP-5
Lat: 40° 15' 13.58" N
Lon: 79° 57' 44.33" W

W-BB3
(GP-5/8)
Lat: 40° 15' 3.10" N
Lon: 79° 57' 33.79" W

S-BB2 - UNT to Lobbs Run (WWF)
(Waived under 105.12(a)(2))
Lat: 40° 14' 57.63" N
Lon: 79° 57' 28.24" W

S-BB4 - Bunola Run (WWF)
(GP-5/8)
Lat: 40° 14' 16.16" N
Lon: 79° 56' 48.27" W

Start of Line
Lat: 40° 14' 27.145" N
Lon: 79° 55' 16.615" W

S-BB5 - Monongahela River (WWF)
(GP-5)
Lat: 40° 14' 27.78" N
Lon: 79° 56' 53.36" W

W-BB13-UP
No Impact
Lat: 40° 14' 18.96" N
Lon: 79° 56' 41.25" W

S-BB4 - Bunola Run (WWF)
(GP-5/8)
Lat: 40° 14' 16.16" N
Lon: 79° 56' 48.27" W

W-BB8
(GP-5/8)
Lat: 40° 13' 58.86" N
Lon: 79° 56' 32.90" W

W-BB11
(GP-5/8)
Lat: 40° 14' 12.94" N
Lon: 79° 56' 44.64" W

W-BB10
(GP-5/8)
Lat: 40° 14' 0.91" N
Lon: 79° 56' 37.43" W

W-BB9
(GP-5/8)
Lat: 40° 13' 59.84" N
Lon: 79° 56' 36.56" W

W-BB7
Joint Permit Application
Lat: 40° 13' 51.07" N
Lon: 79° 56' 11.39" W

W-BB6
(GP-5/8)
Lat: 40° 13' 46.26" N
Lon: 79° 56' 4.77" W

W-BB12-WP
(GP-5/8)
Lat: 40° 13' 33.35" N
Lon: 79° 55' 43.02" W

S-BB3 - Kelly Run (WWF)
(GP-5/8)
Lat: 40° 13' 41.59" N
Lon: 79° 55' 57.39" W

Equitrans Expansion Project

N

1:24,000

0 2,000 4,000 Feet

EQUITRANS℠

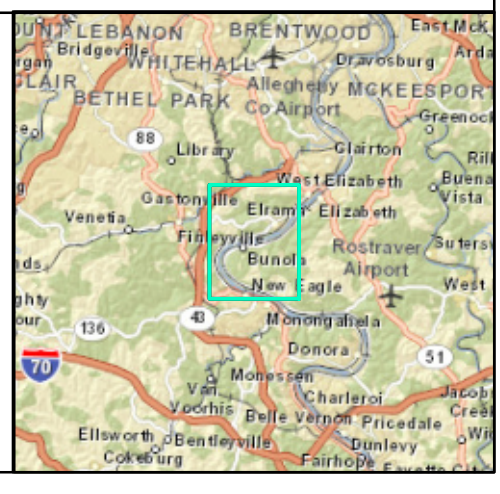
Attachment #: 1
USGS Project Location Map
Washington & Allegheny County, PA

October 2015

Data Sources: Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site



Document Path: P:\GIS\EQT\MapDocs\eep_pa_washallegCo_usgsGP.mxd

SECTION 8.0 - PROJECT DESCRIPTION

8.1 DESCRIPTION

Equitrans, L.P. (Equitrans) proposes the Equitrans Expansion Project (Project) located in Allegheny, Washington and Greene Counties, Pennsylvania and Wetzel County, West Virginia. The Project is designed to transport natural gas from the northern portion of the Equitrans system south to the interconnection with Mountain Valley Pipeline LLC's proposed pipeline, as well as to existing interconnects with Texas Eastern Transmission, LP and Dominion Transmission, Inc. The Project will also increase system reliability, efficiency, and operational flexibility for the benefit of all Equitrans customers.

The portion of the Project within Allegheny County proposes to install one 20" natural gas pipeline (H-318) approximately 3 miles long within a 100' construction right-of-way and 50' permanent right-of-way. The pipeline will generally run east-west and will be located in Forward Township, Allegheny County, and Union Township, Washington County, Pennsylvania, in the northern portion of Equitrans' system. The H-318 pipeline will move gas from new modifications at the existing Applegate Gathering System, which is operated by EQT Gathering, LLC (EQT Gathering), to a new Hartson tie-in at Equitrans' existing H-148 pipeline for delivery south.

8.2 STREAM AND WETLAND CROSSINGS

Construction activities will include clearing and grubbing within the right of way, trenching, boring, pipe installation, and site restoration. This project will require crossings through numerous streams and wetlands.

The Allegheny County portion of the project will involve crossing 3 streams, Monongahela River, Bunola Run, Kelly Run and within the floodway of Bunola Run, and crossing 7 wetlands to install the pipeline. The Monongahela River will be crossed by directional bore and the remaining streams and wetlands will be open cut. Temporary timber bridges will be used to move equipment across the streams and wetlands that are open cut. Construction of the pipeline will result in approximatley 2,995 square feet of temporary stream impacts and 1,506 square feet of temporary wetland impacts in Allegheny County. Within the permanently maintained right-of-way the project will result in approximatley 3,925 square feet of stream impacts and 22,197 square feet of weltand impacts. Wetland restoration practices will be employed so that there are no permanent hydrologic impacts within the watersheds. The type of four wetlands will be converted from PFO to PEM. A Joint Permit Application has been submitted for the temporry travel lande through Wetland W-BB7. Once the pipeline is installed, the streams and wetlands will be restored to their original topographic condition. BMPs will be used during all phases of construction.

8.3 PENNSYLVANIA NATURAL DIVERSITY INVENTORY PROJECT ENVIRONMENTAL REIVEW

A large project PNDI was submitted to the PA Department of Conservation and Natural Resources (DCNR), PA Fish and Boat Commission, PA Game Commission, and US Fish and Wildlife Service (USFWS) on June 24, 2015 (Section 13.0).

DCNR responded that based on the PNDI review that there was the potential to impact several plant species. Field surveys to identify these species are planned for late spring and summer 2016, during the appropriate flowering time.

The PA Game Commission, PA Fish and Boat Commission and USFWS responded that no impacts are anticipated within the vicinity of the project.

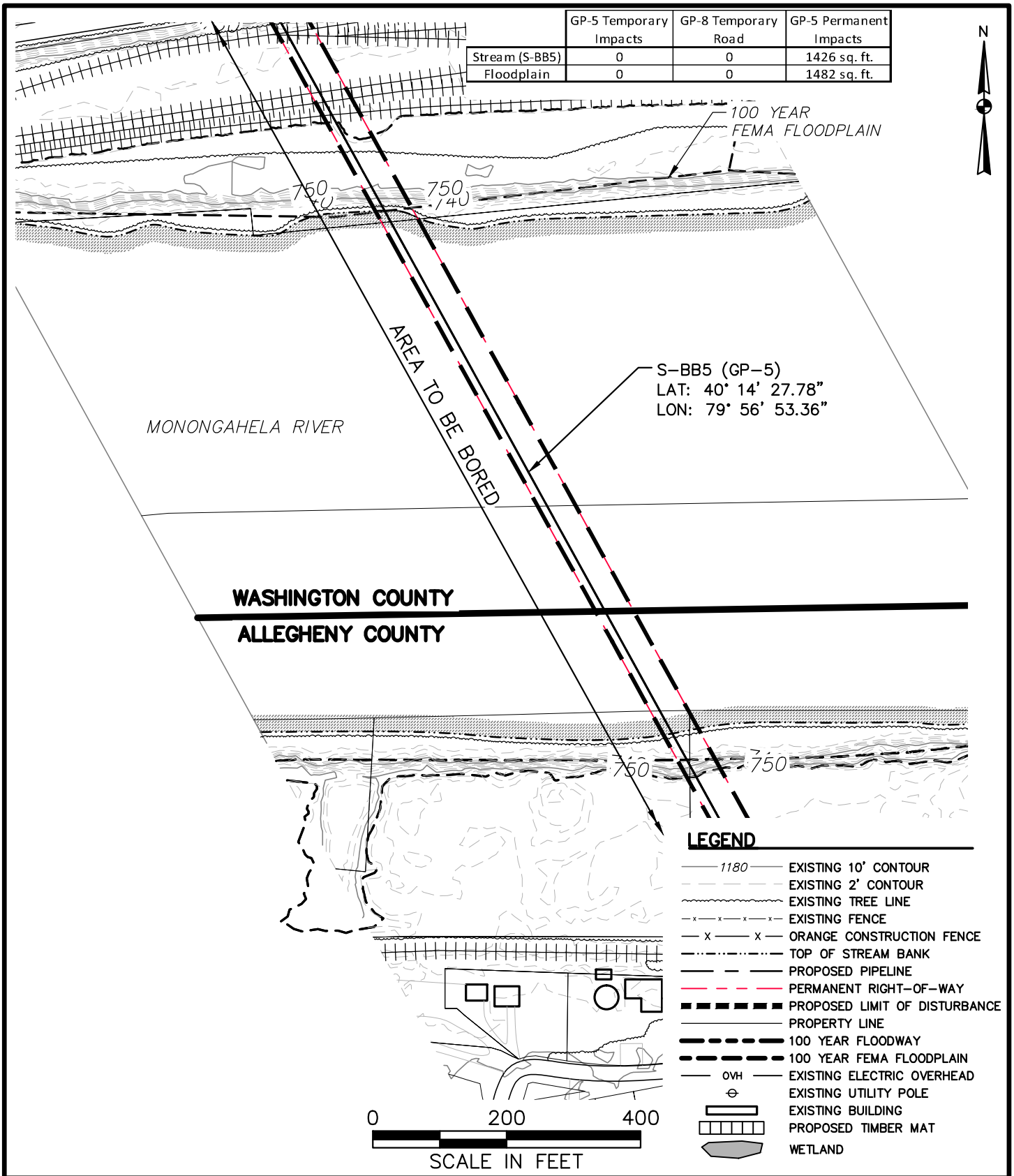
Equitrans Expansion Project - Allegheny and Washington County
Impact Summary Table

Waters Name	Stream/ Wetland Type	Applicable Permits	Latitude (N)			Longitude (W)			PA Code 25 Chapter 93 Designated Use	Temporary Stream Impact			Permanent Stream Impact			Installation Method	Wetlands Onsite	Temporary Wetland Impact	Permanent Wetland Impact
			DD	MM	SS	DD	MM	SS		Length (ft)*	Width (ft)**	Area (ft^2)	Length (ft)*	Width (ft)**	Area (ft^2)		Area (ft^2)	Area (ft^2)	Area (ft^2)
S-BB1 - Lobbs Run	Intermitent	GP-5	40	15	13.58	79	57	44.33	WWF	5	30	150	5	50	250	open cut trench and timber mat crossing	N/A	N/A	N/A
S-BB1 (a) - UNT to Lobbs Run	Intermitent	GP-5	40	15	13.44	79	57	44.28	WWF	2	72	144	2	34	68	open cut trench and timber mat crossing	N/A	N/A	N/A
W-BB3	PEM	GP-5/8	40	15	3.10	79	57	33.79	WWF	N/A	N/A	N/A	N/A	N/A	N/A	open cut trench and timber mat crossing	2993	427	1791
S-BB2 - UNT to Lobbs Run	Ephemeral	Waived under 105.12(a)(2)	40	14	57.63	79	57	28.24	WWF	1	30	30	1	69	69	open cut trench and timber mat crossing	N/A	N/A	N/A
S-BB5 - Monongahela River	Perennial	GP-5	40	14	27.78	79	56	53.36	WWF	891	1.6	1425.6	891	1.6	1425.6	HDD Bore	N/A	N/A	N/A
S-BB4 - Bunola Run	Perennial	GP-5/8	40	14	16.16	79	56	48.27	WWF	20	25	500	20	50	1000	open cut trench and timber mat crossing	N/A	N/A	N/A
S-BB4 - Bunola Run (crossing, workspace in floodplain)	Perennial	GP-5/8	40	14	16.16	79	56	48.27	WWF	20	16	320	N/A	N/A	N/A	timber mat crossing	N/A	N/A	N/A
W-BB13-UP	PFO/PSS	N/A	40	14	18.96	79	56	41.25	WWF	N/A	N/A	N/A	N/A	N/A	N/A	No longer crossing	11620	N/A	N/A
W-BB11	PFO	GP-5/8	40	14	12.94	79	56	44.64	WWF	N/A	N/A	N/A	N/A	N/A	N/A	open cut trench and timber mat crossing	2492	N/A	1168
W-BB10	PFO	GP-5/8	40	14	0.91	79	56	37.43	WWF	N/A	N/A	N/A	N/A	N/A	N/A	open cut trench and timber mat crossing	1016	607	409
W-BB9	PFO	GP-5/8	40	13	59.84	79	56	36.56	WWF	N/A	N/A	N/A	N/A	N/A	N/A	open cut trench and timber mat crossing	709	679	30
W-BB8	PFO	GP-5/8	40	13	58.86	79	56	32.90	WWF	N/A	N/A	N/A	N/A	N/A	N/A	open cut trench and timber mat crossing	1619	N/A	1328
W-BB7	PEM	GP-5	40	13	51.07	79	56	11.39	WWF	N/A	N/A	N/A	N/A	N/A	N/A	open-cut trench (temp road crossing under JPA)	87132	N/A	16190
W-BB6	PEM	GP-5/8	40	13	46.26	79	56	4.77	WWF	N/A	N/A	N/A	N/A	N/A	N/A	open cut trench and timber mat crossing	4031	N/A	3070
S-BB3 - Kelly Run	Perennial	GP-5/8	40	13	41.59	79	55	57.39	WWF	30	25	750	30	50	1500	open cut trench and timber mat crossing	N/A	N/A	N/A
W-BB12-WP	PFO/PSS	GP-5/8	40	13	33.35	79	55	43.02	WWF	N/A	N/A	N/A	N/A	N/A	N/A	open cut trench and timber mat crossing	250	220	2
Allegheny County Totals (applying for General Permits):										961	67.6	2995.6	941	101.6	3925.6	**sf**	108,869	1,506	22,197 **sf**
												0.07			0.09	**acre**	2.50	0.03	0.51 **acre**
Washington County Totals:										8	132	324	8	153	387	**sf**	2,993	427	1,791 **sf**
												0.01			0.01	**acre**	0.07	0.01	0.04 **acre**
Washington County Totals (applying for General Permits)										7	102	294	7	84	318	**sf**	2,993	427	1,791 **sf**
												0.01			0.01	**acre**	0.07	0.01	0.04 **acre**
Project Totals:										**969**	**199.6**	**3319.6**	**949**	**254.6**	**4312.6**	**sf**	**111,862**	**1,933**	**23,988** **sf**
																	2.57	**0.04**	**0.55** **acre**

Note:
* As measured transversely from top of bank to top of bank
** As measured along centerline of stream from where water is directed out of the stream to where it is returned to the stream
Washington County

UNT - unnamed tributary
GP - General Permit
WWF - warm water fish
N/A - not applicable

	GP-5 Temporary Impacts	GP-8 Temporary Road	GP-5 Permanent Impacts
Stream (S-BB5)	0	0	1426 sq. ft.
Floodplain	0	0	1482 sq. ft.



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EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALL. & WASH. COUNTY
GP-5 FOR S-BB5
PLAN

SCALE: 1" = 50'

DATE:	03/14/16
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 3

FIGURE 1

R:_212 - OGA\O&G\EQT\00176 - EEP\GPs\H318\CCD Comment Responses\H318 - 00176GP045.dwg PIT JOE.HERBSTRITT 3/14/2016 2:35:34 PM

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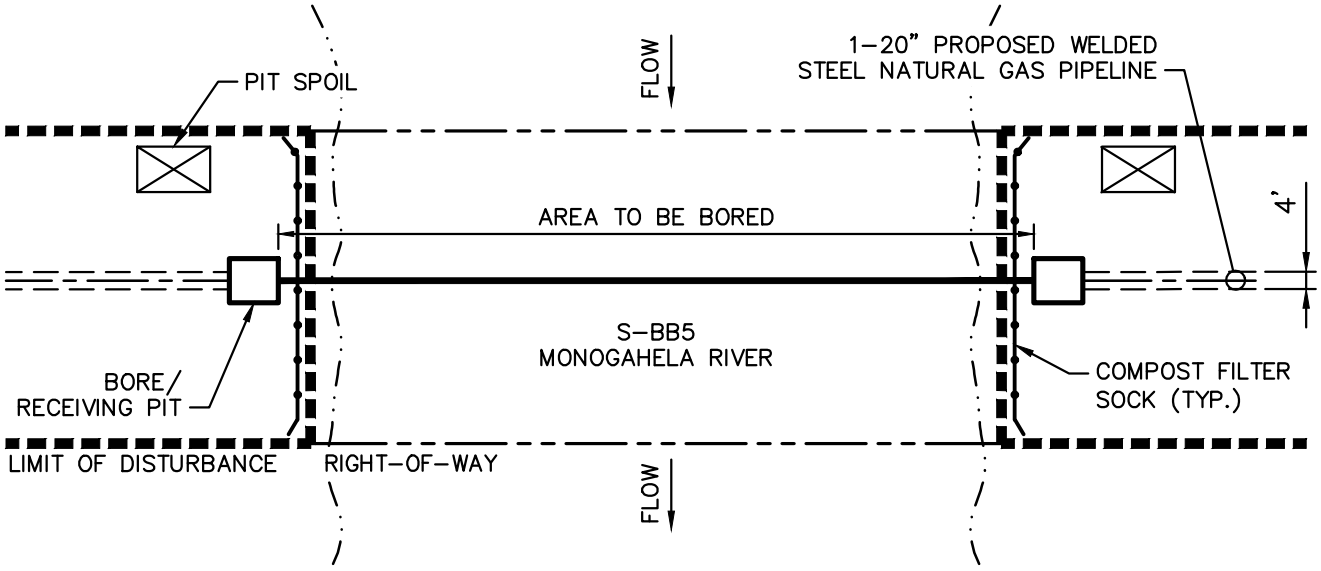

STREAM IMPACTS:
LENGTH: 860'
WIDTH: 1.6'
TOTAL AREA: 1,376 S.F.

FLOODPLAIN IMPACTS:
LENGTH: 925.58'
WIDTH: 1.6'
TOTAL AREA: 1,480.93 S.F.

PLAN
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H318 PIPELINE – ALL. & WASH. COUNTY
GP-5 FOR S-BB5
PLAN
SCALE: NOT TO SCALE

DATE:	03/14/16
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
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CHECKED BY:	JS
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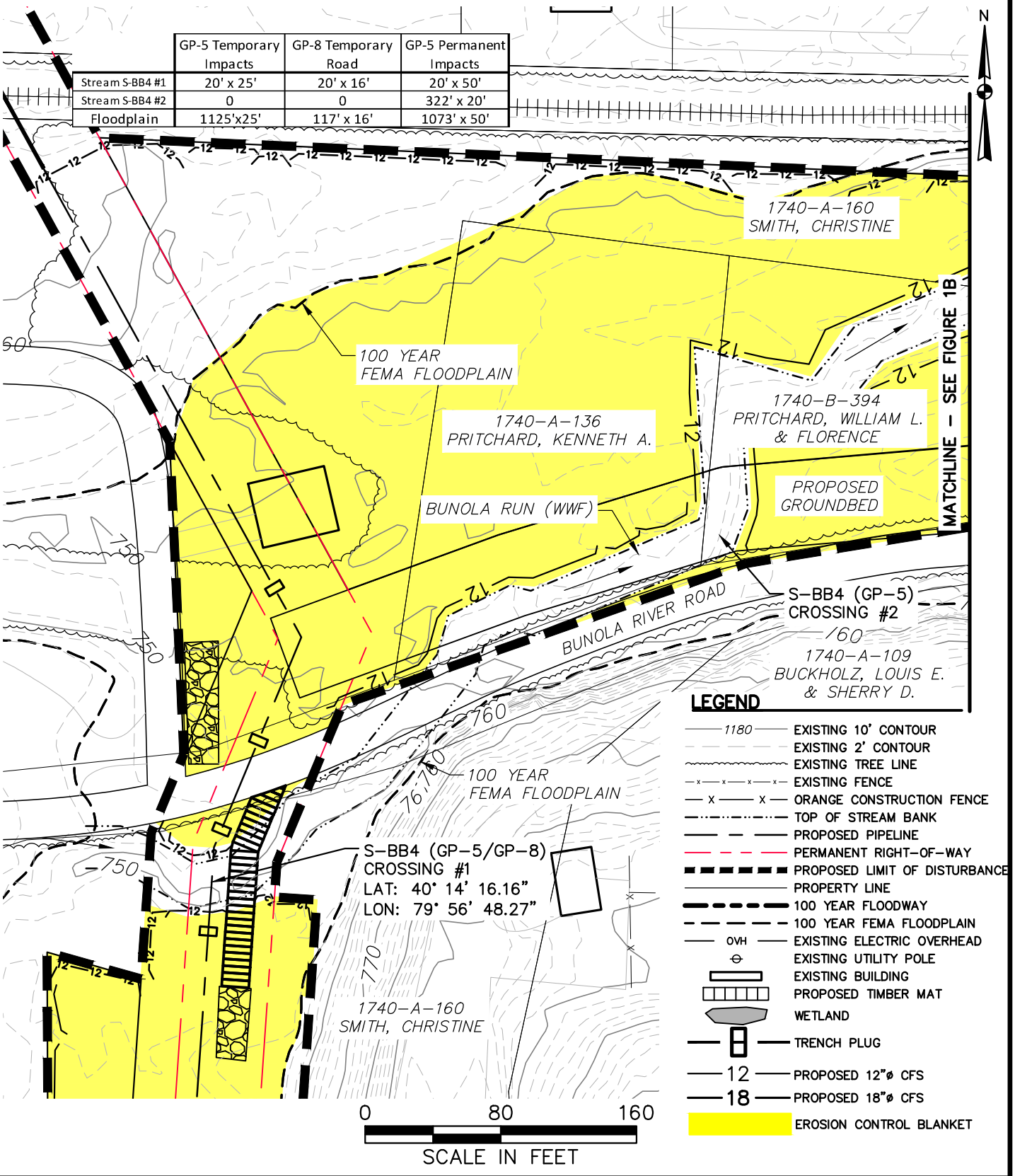
FIGURE 2

R:_212 - OGA\O&G\EQT\00176 - EEP\GPs\H318\CCD Comment Responses\H318 - 00176GP046.dwg PIT JOE.HERBSTRITT 3/9/2016 4:21:45 PM



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EQUITRANS EXPANSION PROJECT
H318 PIPELINE - ALLEGHENY COUNTY
GP-5/GP-8 FOR S-BB4
PLAN

SCALE: 1" = 50'

DATE:	03/14/16
PROJECT NO.:	212IC-PB-00176
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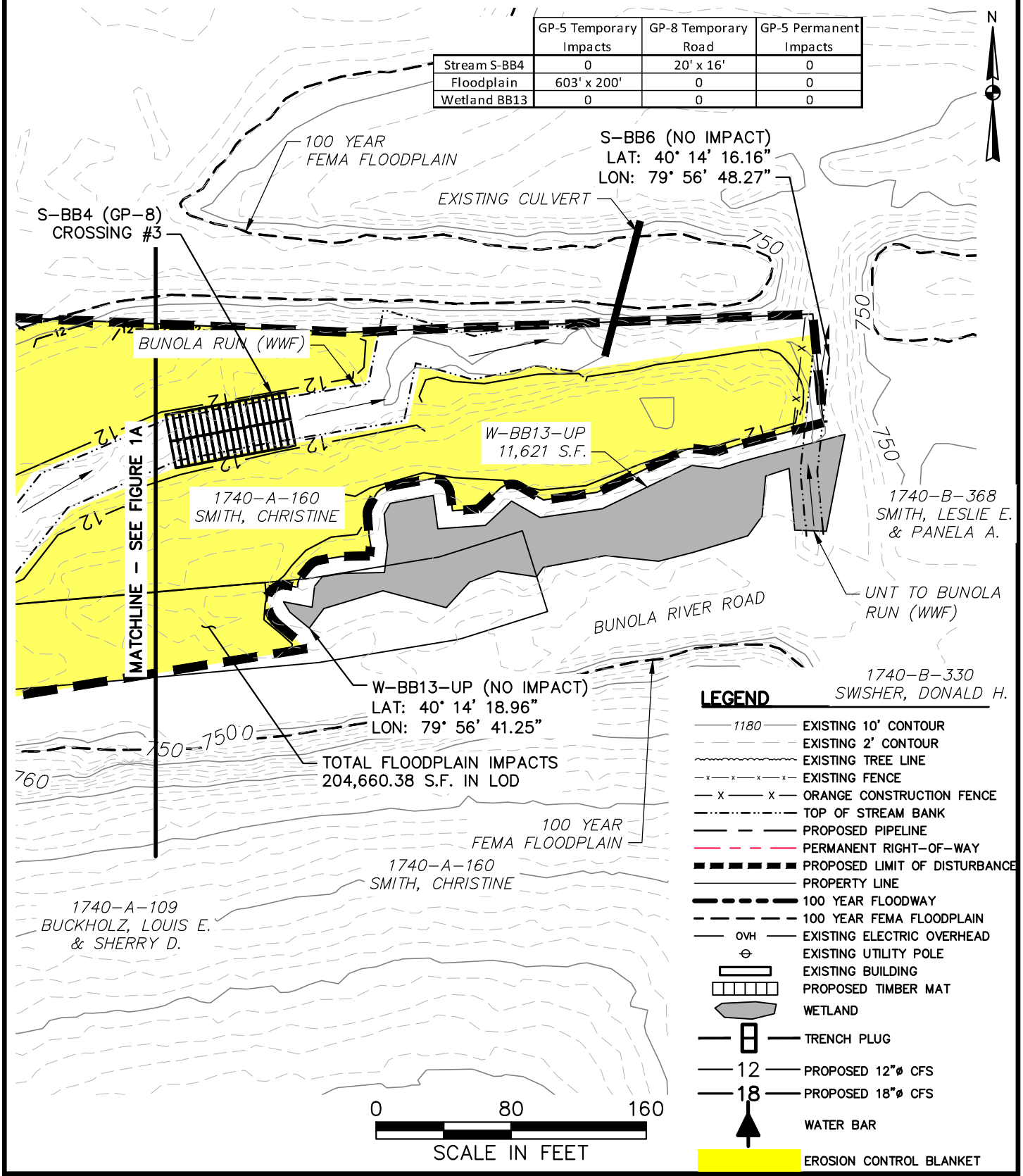
FIGURE 1A

	GP-5 Temporary Impacts	GP-8 Temporary Road	GP-5 Permanent Impacts
Stream S-BB4	0	20' x 16'	0
Floodplain	603' x 200'	0	0
Wetland BB13	0	0	0



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GP-8 FOR S-BB4
PLAN
SCALE: 1" = 50'

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FIGURE 1B

R:_212 - OGA\O&G\EQT\00176 - EEP\GPs\H318\CCD Comment Responses\H318 - 00176GP013 B.dwg PIT JOE.HERBSTRITT 3/14/2016 2:44:34 PM

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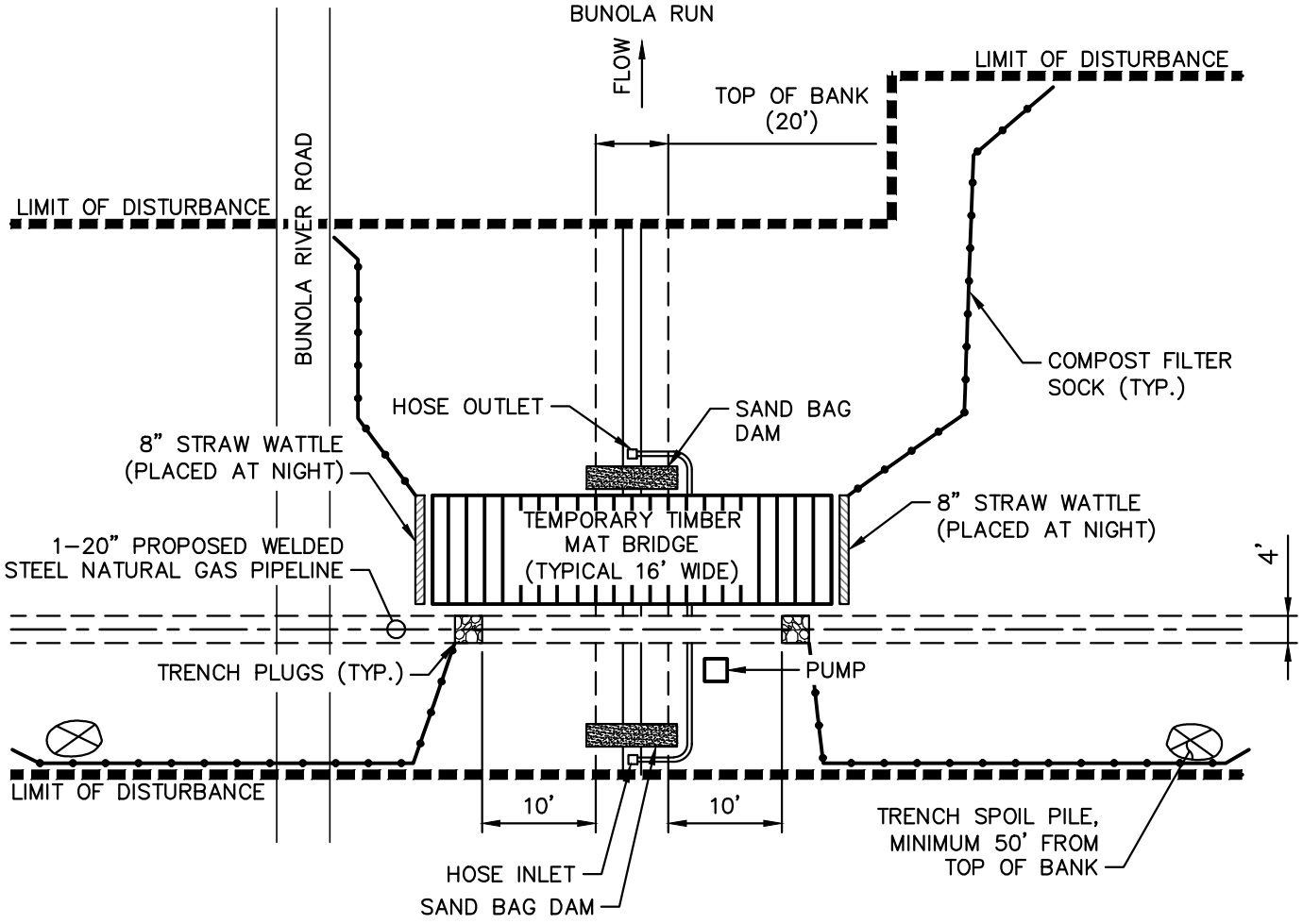

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GP-5/GP-8 FOR S-BB4
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PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
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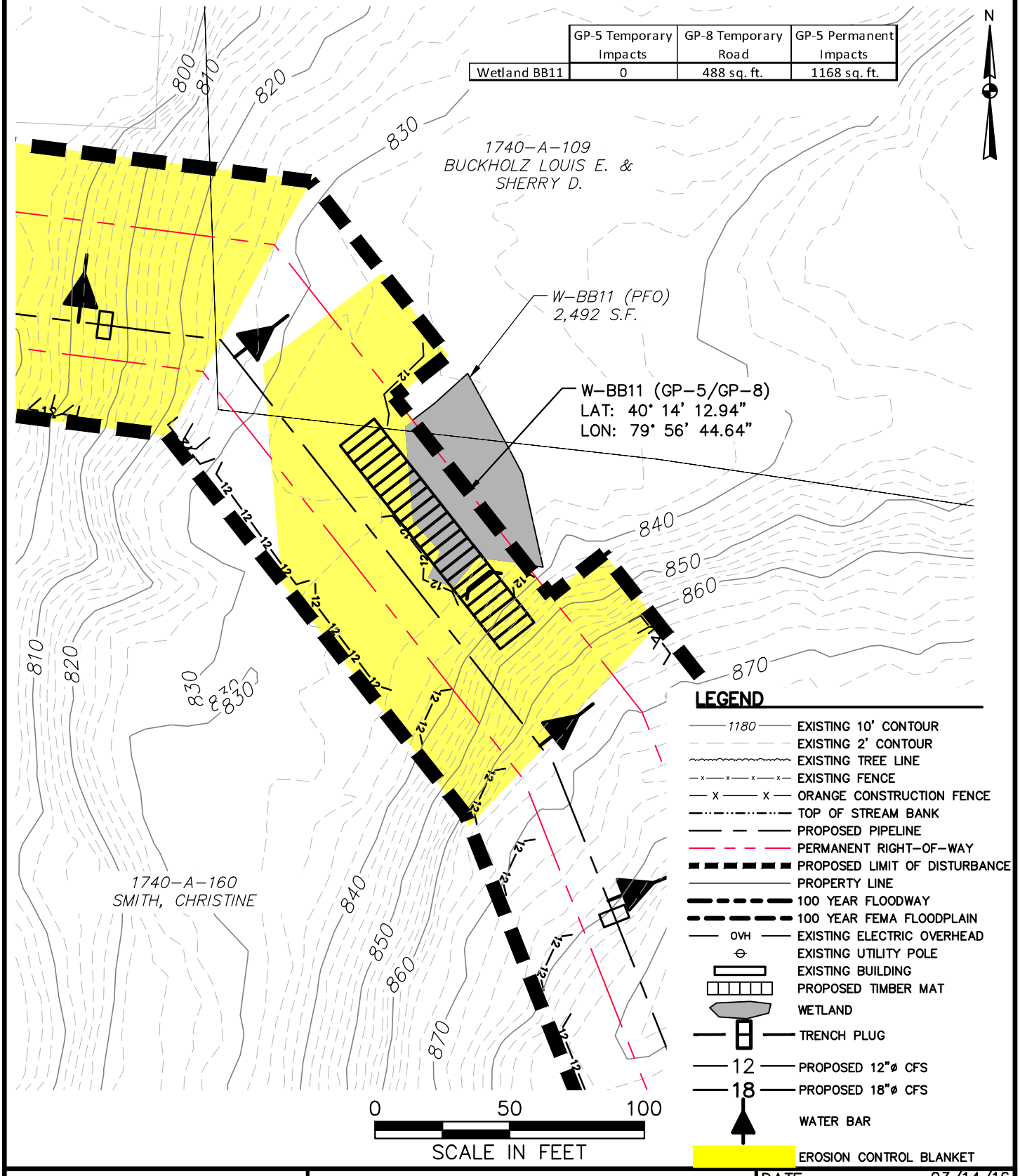
FIGURE 2



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H318 PIPELINE - ALLEGHENY COUNTY
GP-5/GP-8 FOR W-BB11
PLAN

SCALE: 1" = 50'

DATE:	03/14/16
PROJECT NO.:	212IC-PB-00176
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FIGURE 1

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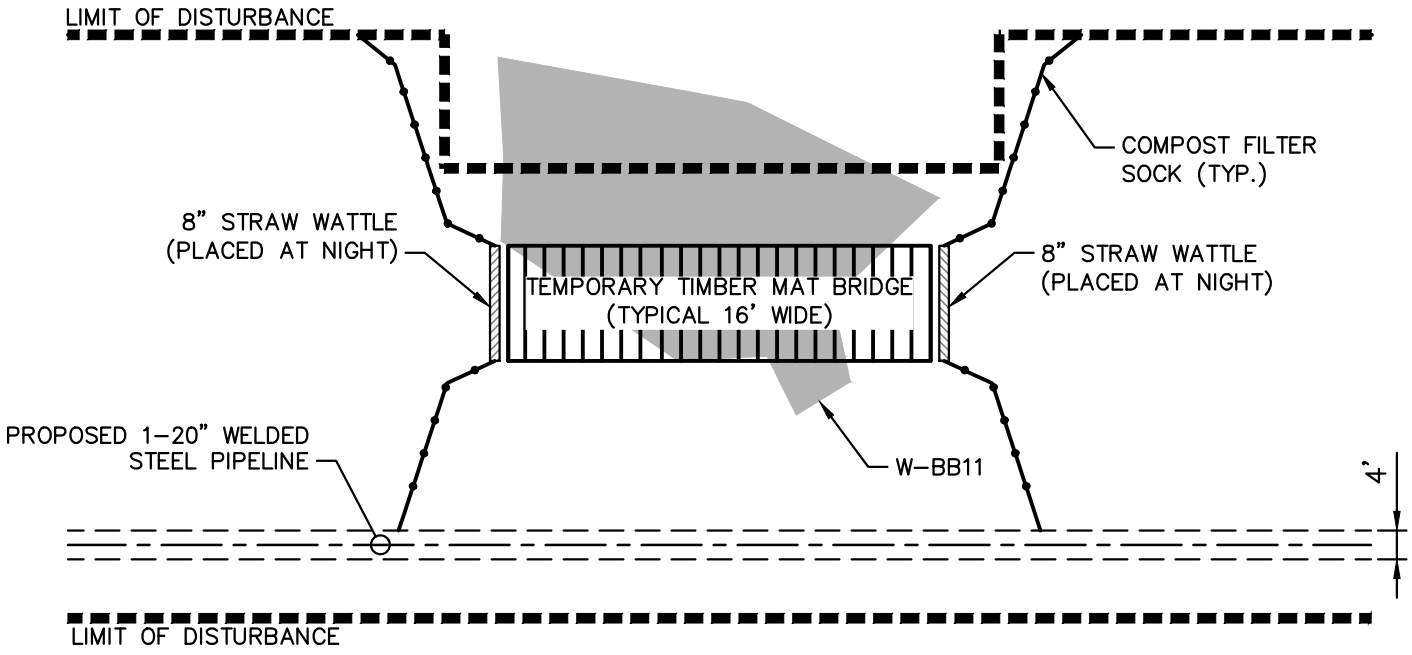

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GP-5/GP-8 FOR W-BB11
PLAN

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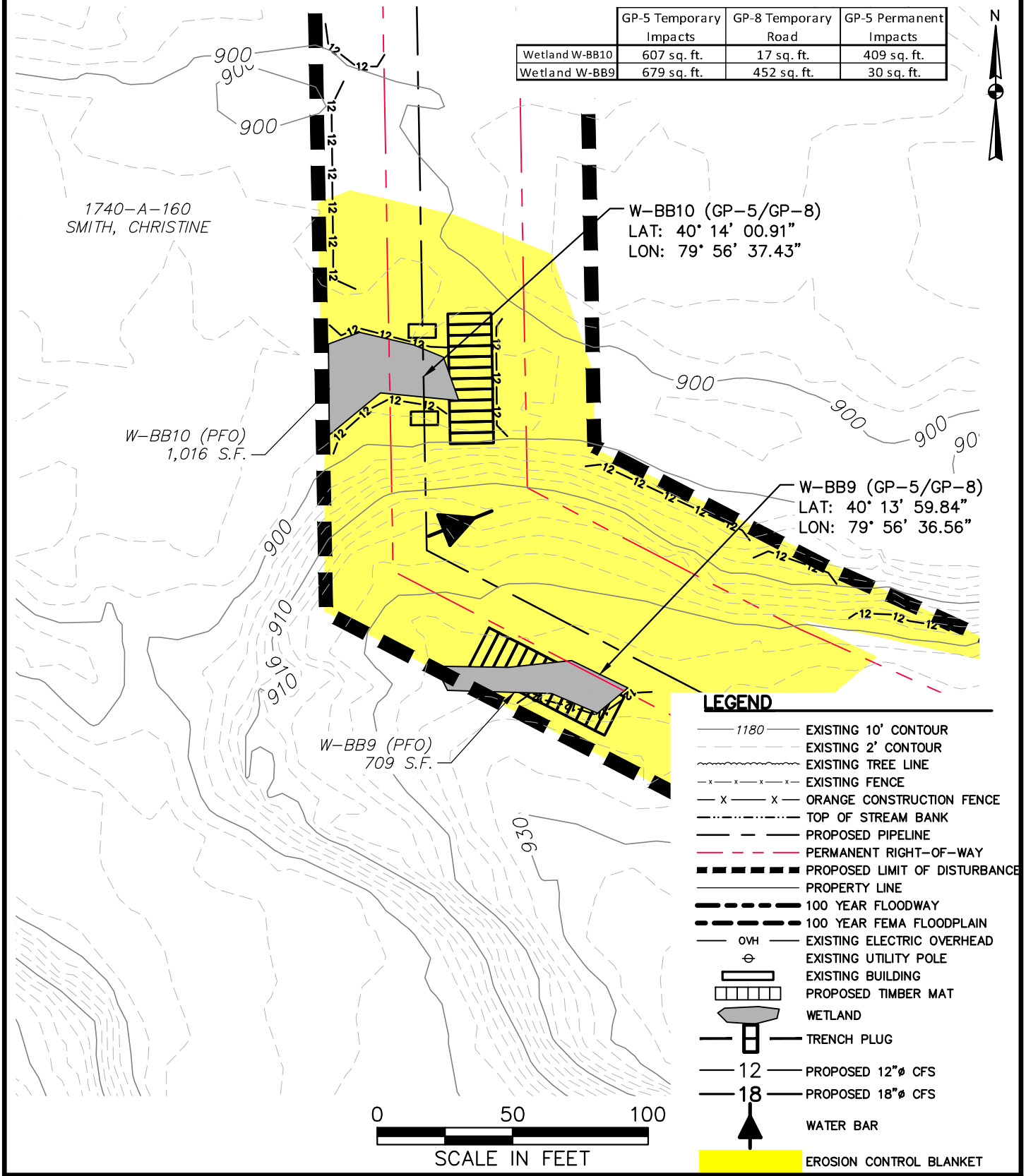
FIGURE 2

	GP-5 Temporary Impacts	GP-8 Temporary Road	GP-5 Permanent Impacts
Wetland W-BB10	607 sq. ft.	17 sq. ft.	409 sq. ft.
Wetland W-BB9	679 sq. ft.	452 sq. ft.	30 sq. ft.



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H318 PIPELINE – ALLEGHENY COUNTY
GP-5/GP-8 FOR W-BB10/W-BB9
PLAN

SCALE: 1" = 50'

DATE:	03/14/16
PROJECT NO.:	212IC-PB-00176
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SHEET:	1 OF 4

FIGURE 1

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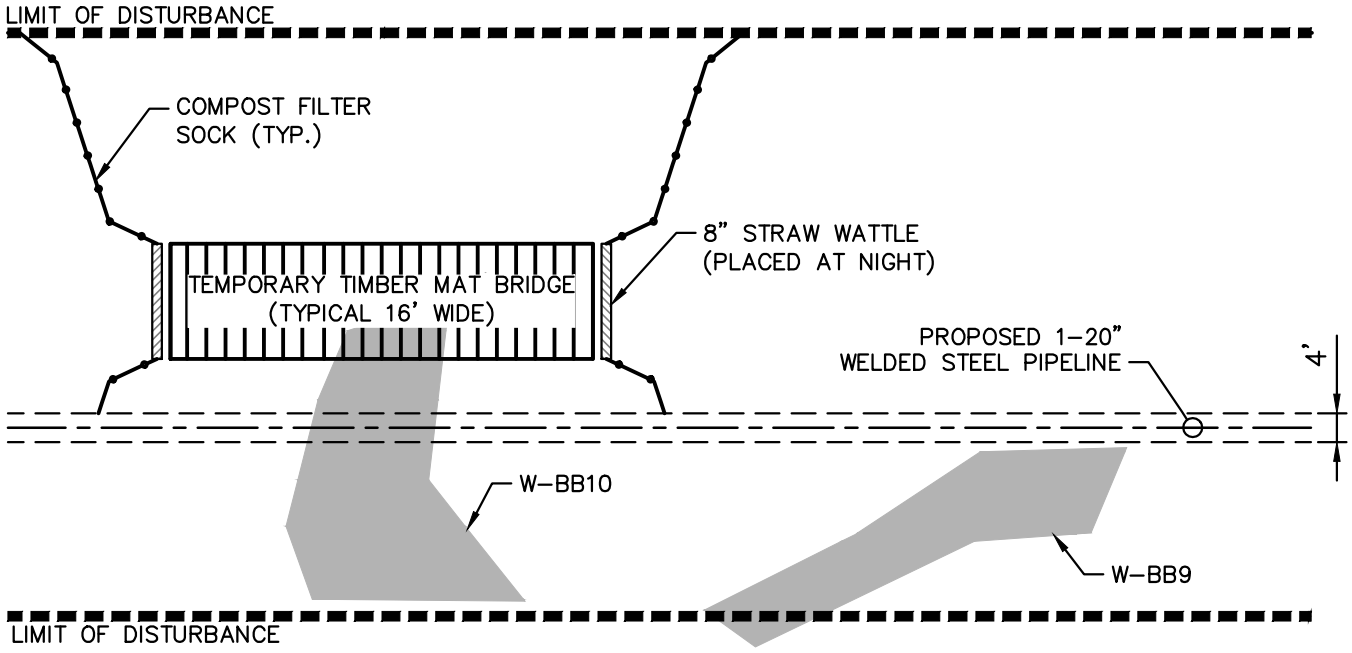

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H318 PIPELINE - ALLEGHNEY COUNTY
GP-5/GP-8 FOR W-BB10/W-BB9
PLAN
SCALE: NOT TO SCALE

DATE:	03/14/16
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
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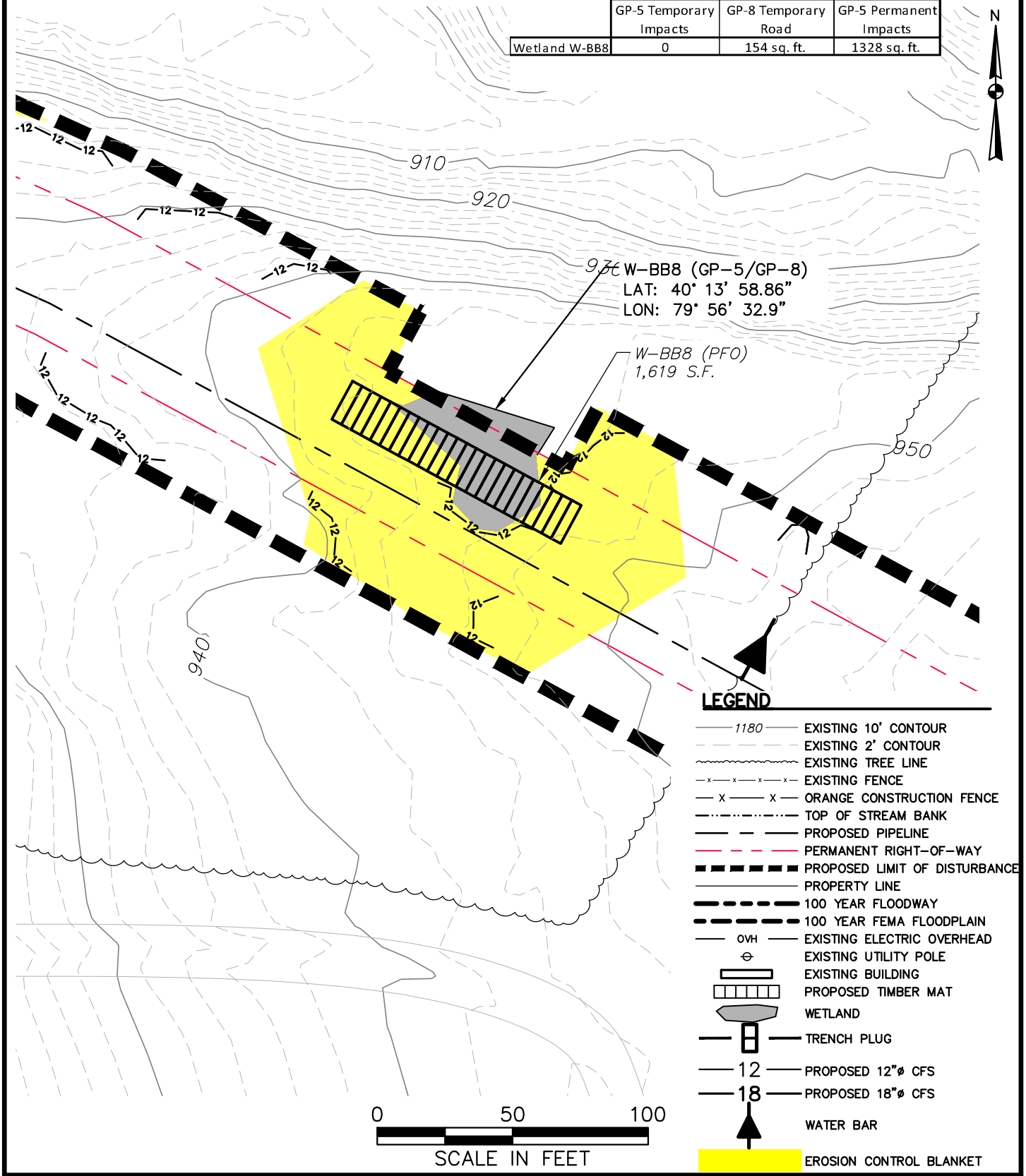
SHEET:	2 OF 4

FIGURE 2

	GP-5 Temporary Impacts	GP-8 Temporary Road	GP-5 Permanent Impacts
Wetland W-BB8	0	154 sq. ft.	1328 sq. ft.



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H318 PIPELINE – ALLEGHENY COUNTY
GP-5/GP-8 FOR W-BB8
PLAN

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DATE:	03/14/16
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
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FIGURE 1

R:_212 – OGA\O&G\EQT\00176 – EEP\GPs\H318\CCD Comment Responses\H318 – 00176GP025.dwg PIT JOE.HERBSTRITT 3/9/2016 6:22:11 PM

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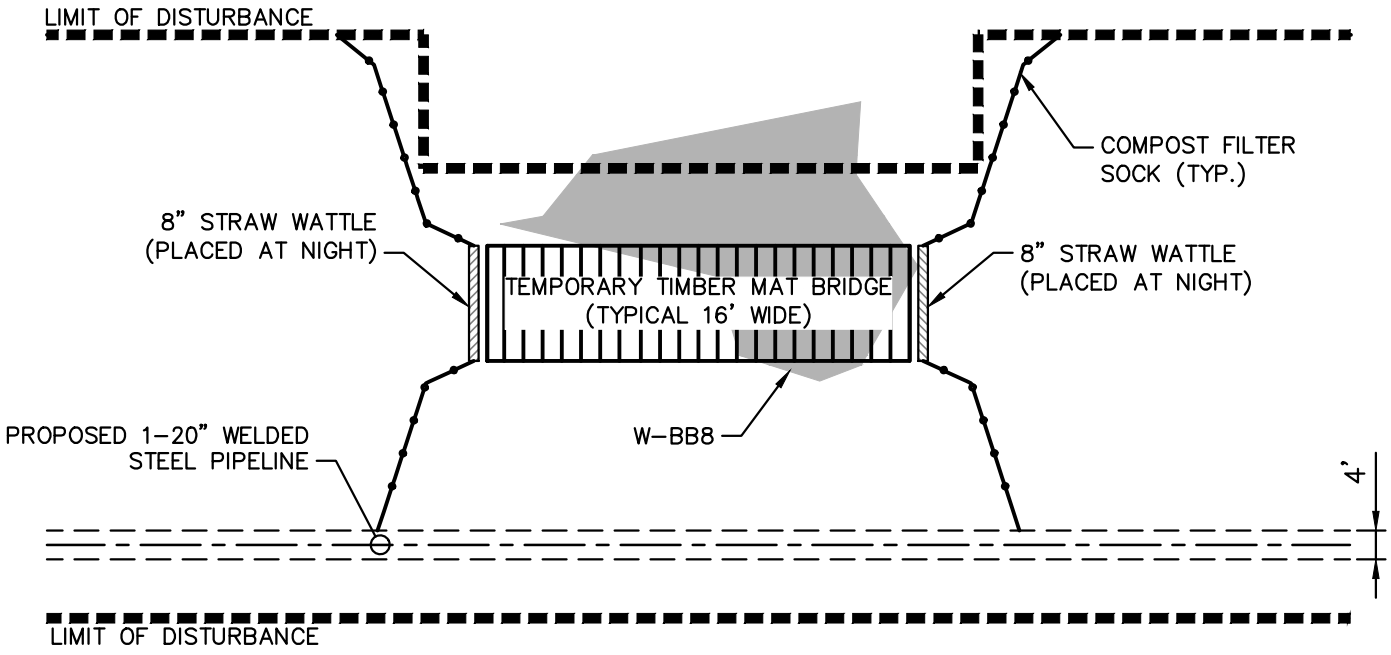

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GP-5/GP-8 FOR W-BB8
PLAN
SCALE: NOT TO SCALE

DATE:	03/14/16
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DESIGNED BY:	JS
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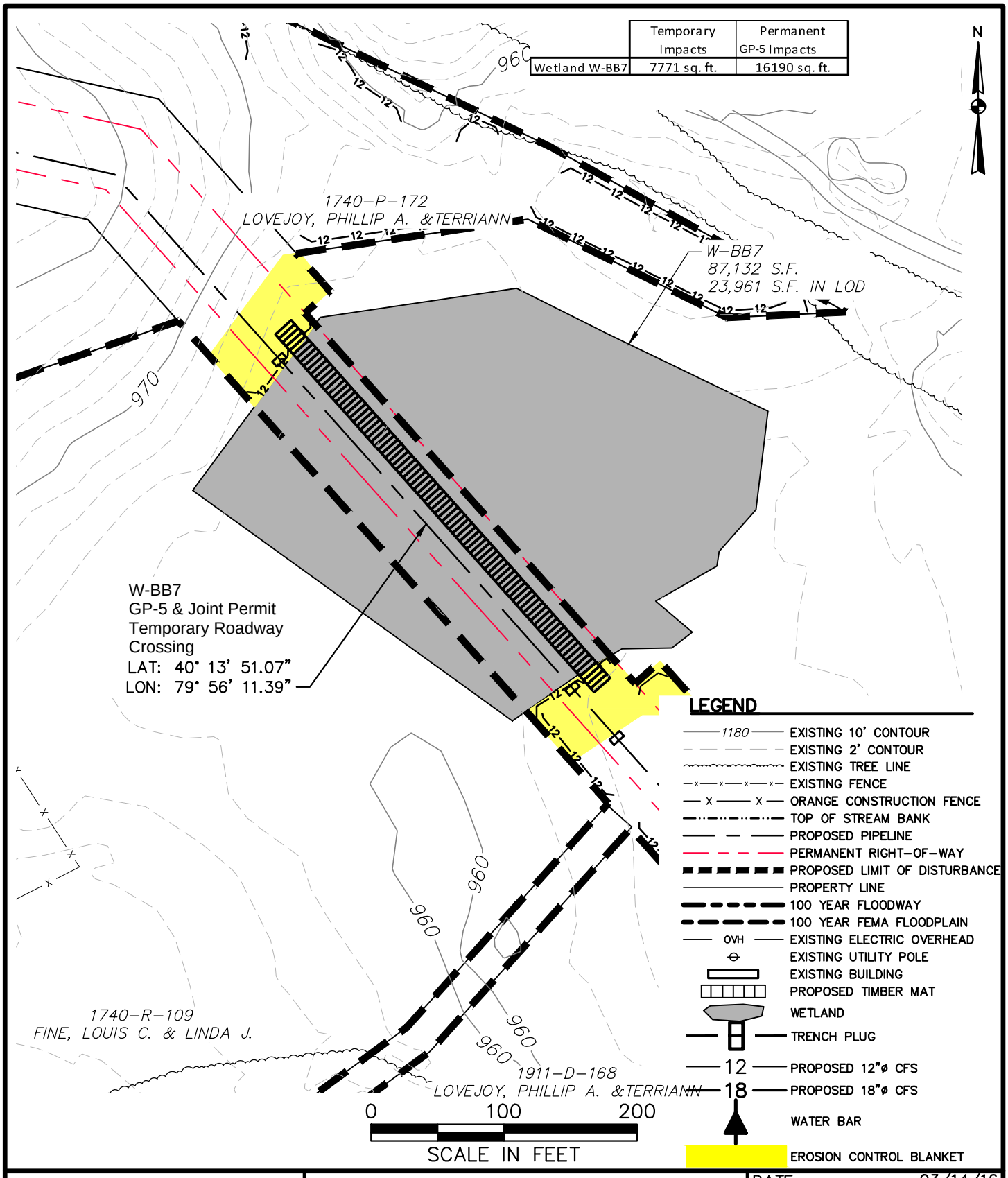
SHEET:	2 OF 4

FIGURE 2



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H318 PIPELINE – ALLEGHENY COUNTY
GP–5 FOR W–BB7
PLAN

SCALE: 1" = 100'

DATE:	03/14/16
PROJECT NO.:	212IC–PB–00176
DESIGNED BY:	JS
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CHECKED BY:	JS
SHEET:	1 OF 4

FIGURE 1

R:_212 – OGA\O&G\EQT\00176 – EEP\GPs\H318\CCD Comment Responses\H318 – 00176GP029.dwg PIT JOE.HERBSTRITT 3/17/2016 2:27:58 PM

NOTES:

1. TOPO AND SITE FEATURE CREATED USING http:\\www.pasda.psu.edu.
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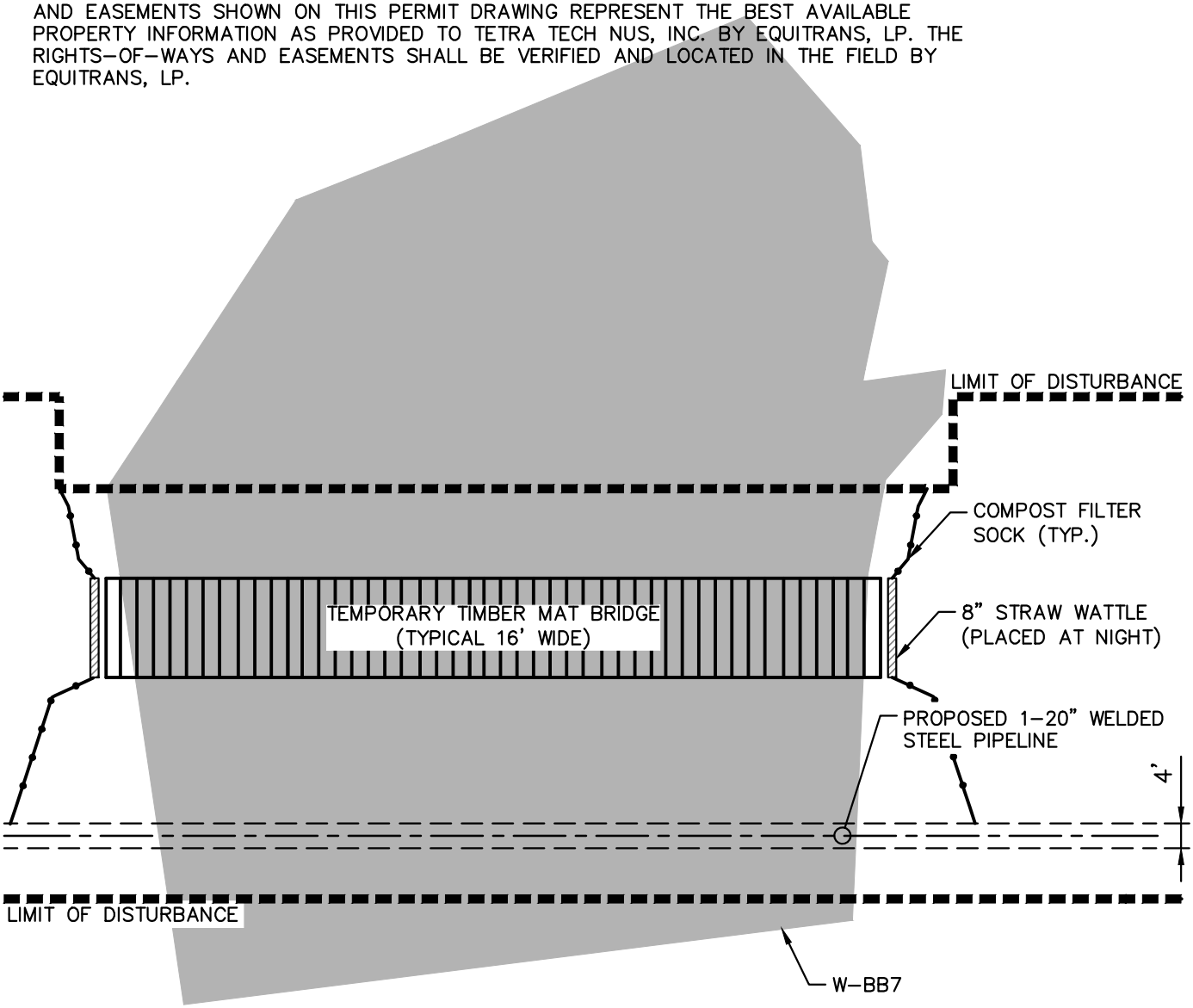

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 STOP-CALL BEFORE YOU DIG!

PLAN
NOT TO SCALE

TETRA TECH
WWW.TETRATECH.COM
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PITTSBURGH, PA 15220
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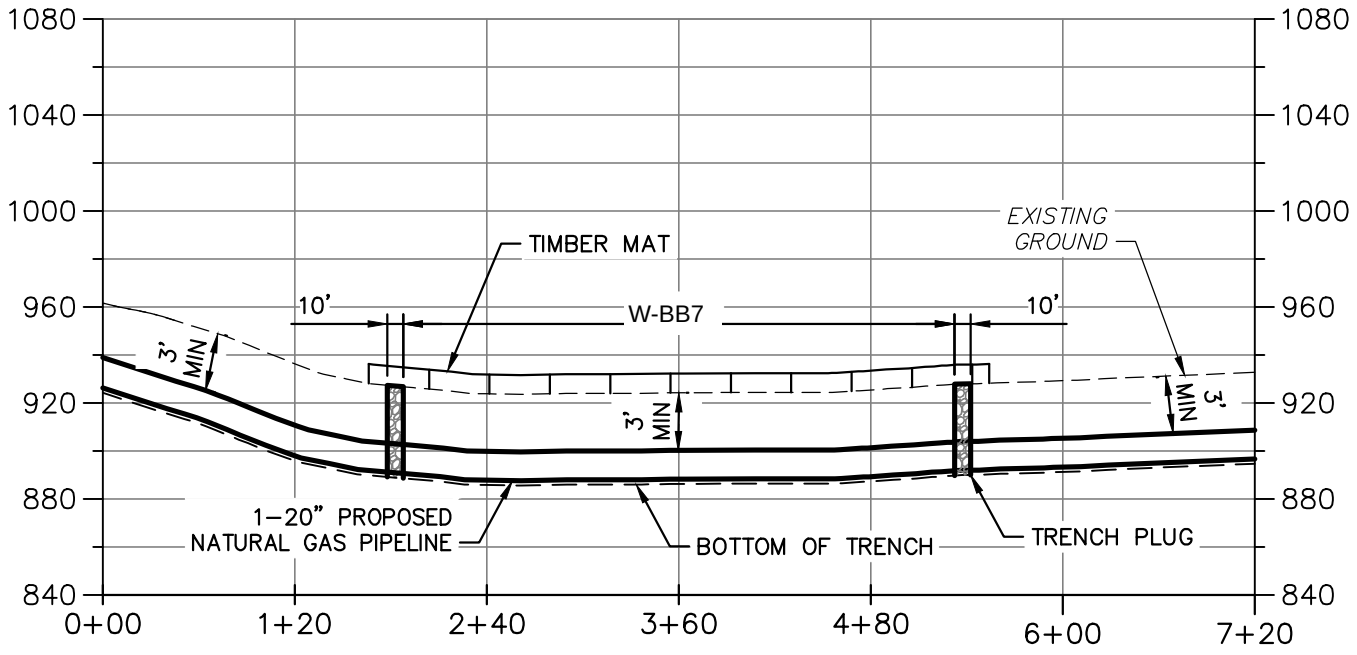
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHNEY COUNTY
JOINT PERMIT APPLICATION FOR W-BB7

SCALE: NOT TO SCALE

DATE:	03/14/16
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 4

FIGURE 2



PROFILE FOR W-BB7 OPEN-CUT TRENCH PROFILE

SCALE: HORIZ: 1" = 120'
VERT: 1" = 40'

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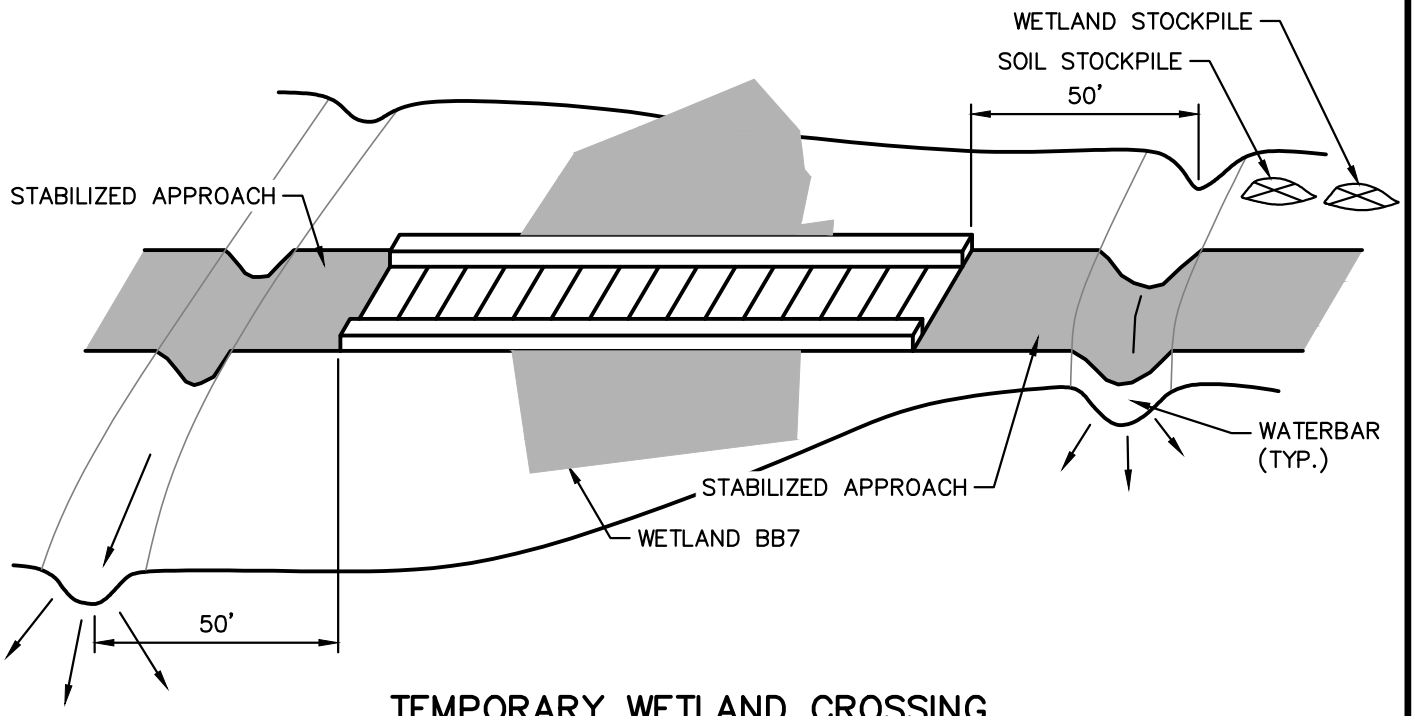
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE - ALLEGHENY COUNTY

W-BB7

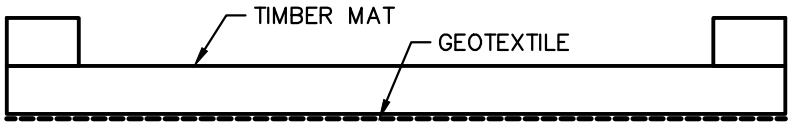
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 4

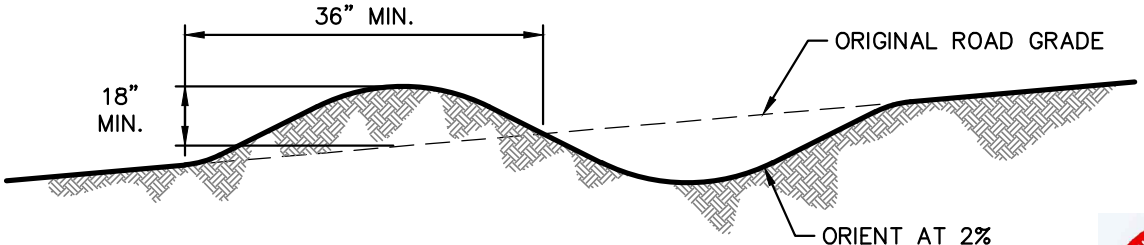
FIGURE 3



TEMPORARY WETLAND CROSSING
NOT TO SCALE



TYPICAL WETLAND CROSSING
NOT TO SCALE



WATERBAR DETAIL
NOT TO SCALE

NOTE:
APPROACH TO CROSSING NOT TO EXCEED A DEPTH OF 6" ABOVE ORIGINAL GRADE

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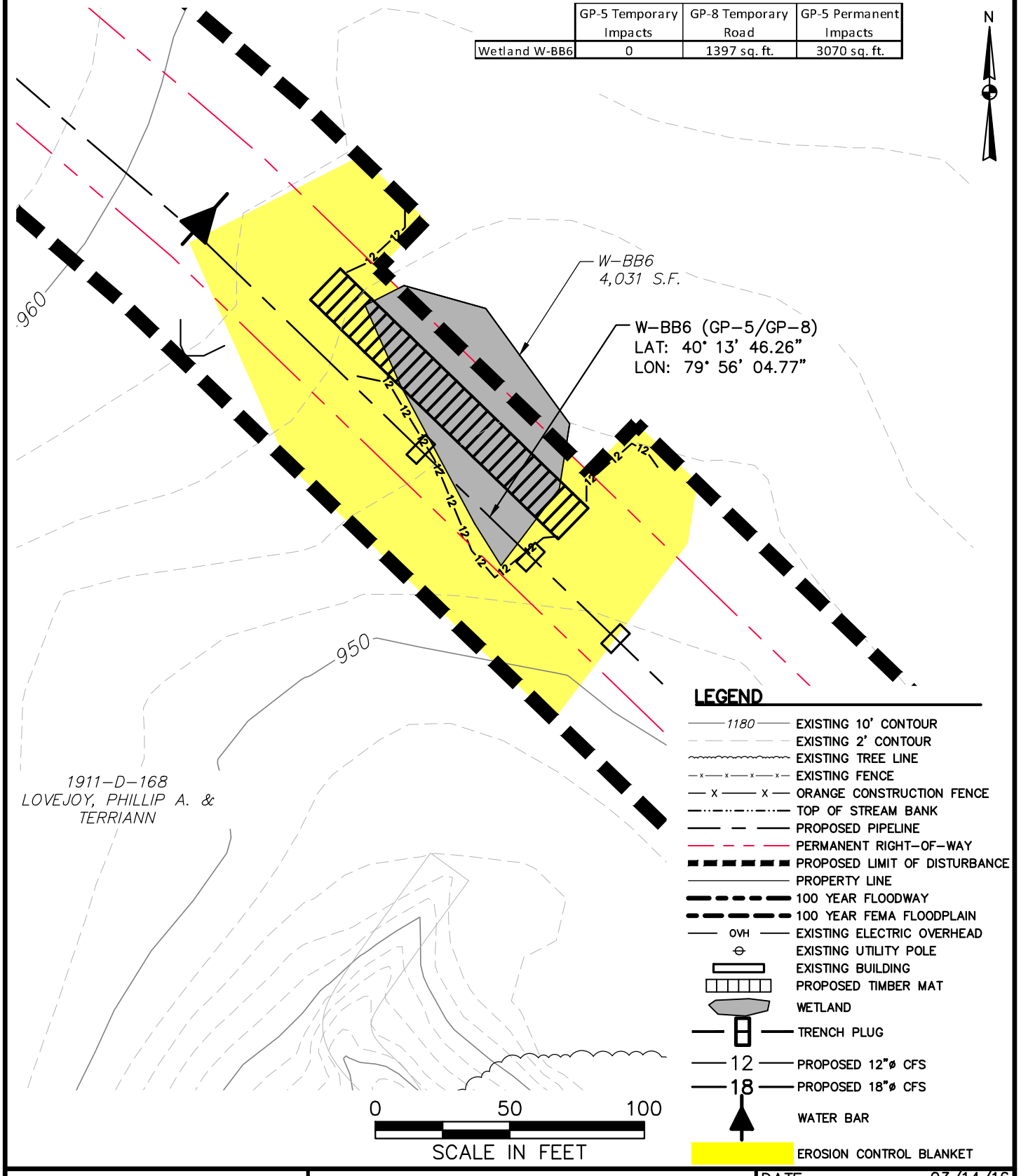
H318 PIPELINE – ALLEGHENY COUNTY
JOINT PERMIT APPLICATION FOR W-BB7

SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	4 OF 4

FIGURE 4

	GP-5 Temporary Impacts	GP-8 Temporary Road	GP-5 Permanent Impacts
Wetland W-BB6	0	1397 sq. ft.	3070 sq. ft.



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EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP–5/GP–8 FOR W–BB6
PLAN
SCALE: 1" = 50'

DATE:	03/14/16
PROJECT NO.:	212IC–PB–00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

FIGURE 1

R:_212 – OGA\O&G\EQT\00176 – EEP\GPs\H318\CCD Comment Responses\H318 – 00176GP033.dwg PIT JOE.HERBSTRITT 3/14/2016 11:13:07 AM

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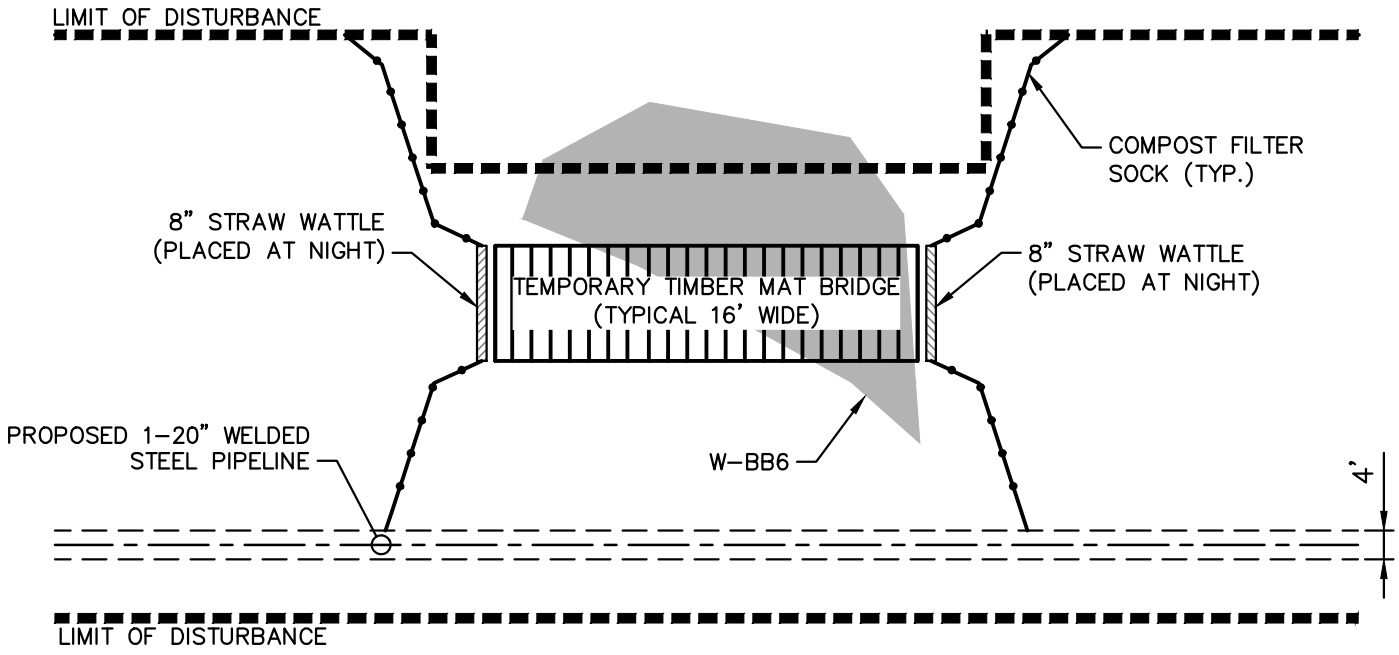

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PLAN
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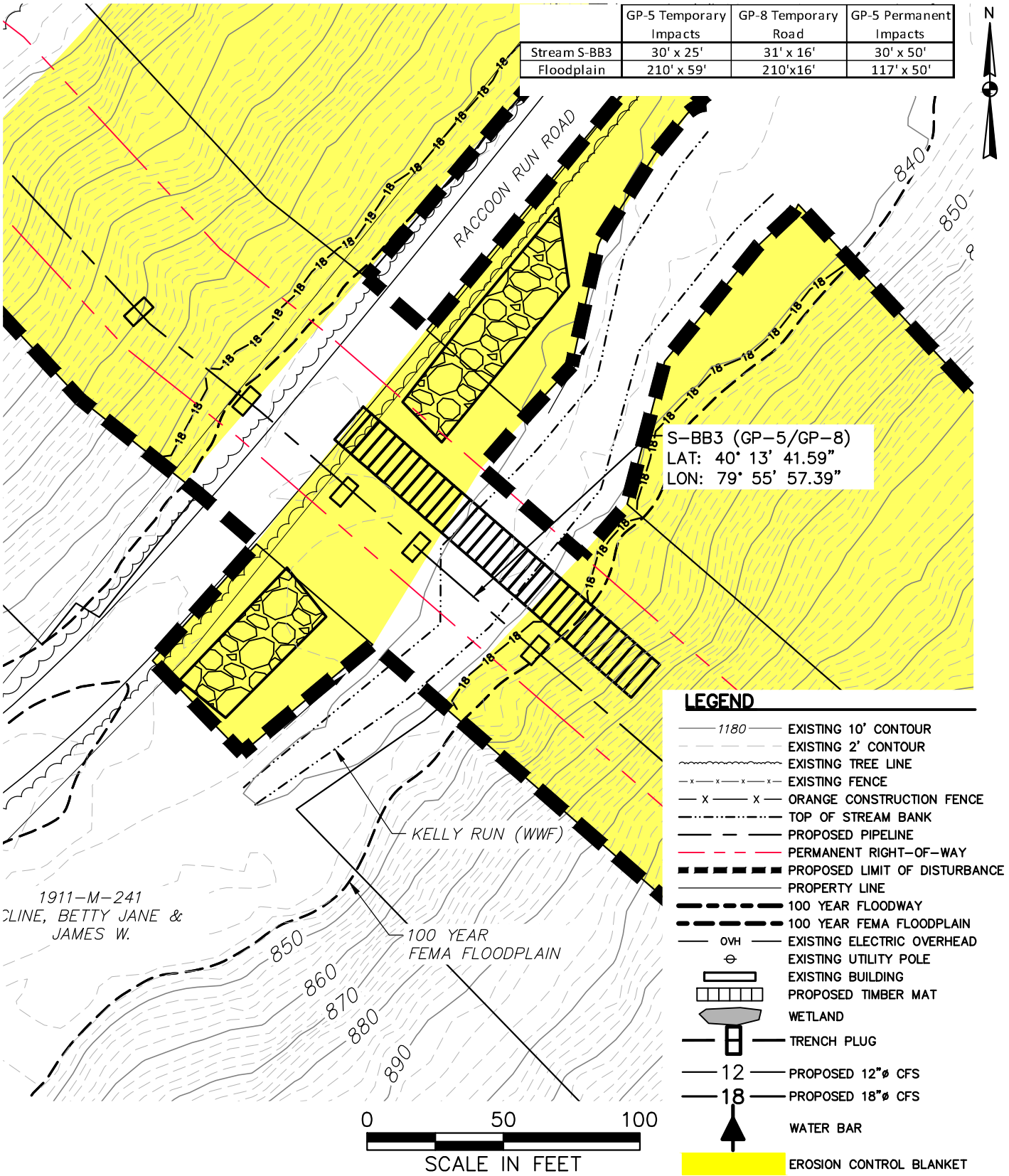
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHNEY COUNTY
GP-5/GP-8 FOR W-BB6
PLAN
SCALE: NOT TO SCALE

DATE:	03/14/16
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 4

FIGURE 2

	GP-5 Temporary Impacts	GP-8 Temporary Road	GP-5 Permanent Impacts
Stream S-BB3	30' x 25'	31' x 16'	30' x 50'
Floodplain	210' x 59'	210'x16'	117' x 50'



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EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
GP-5/GP-8 FOR S-BB3
PLAN

SCALE: 1" = 50'

DATE:	03/14/16
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

FIGURE 1

R:_212 – OGA\O&G\EQT\00176 – EEP\GPs\H318\CCD Comment Responses\H318 – 00176GP037.dwg PIT JOE.HERBSTRITT 3/14/2016 11:16:43 AM

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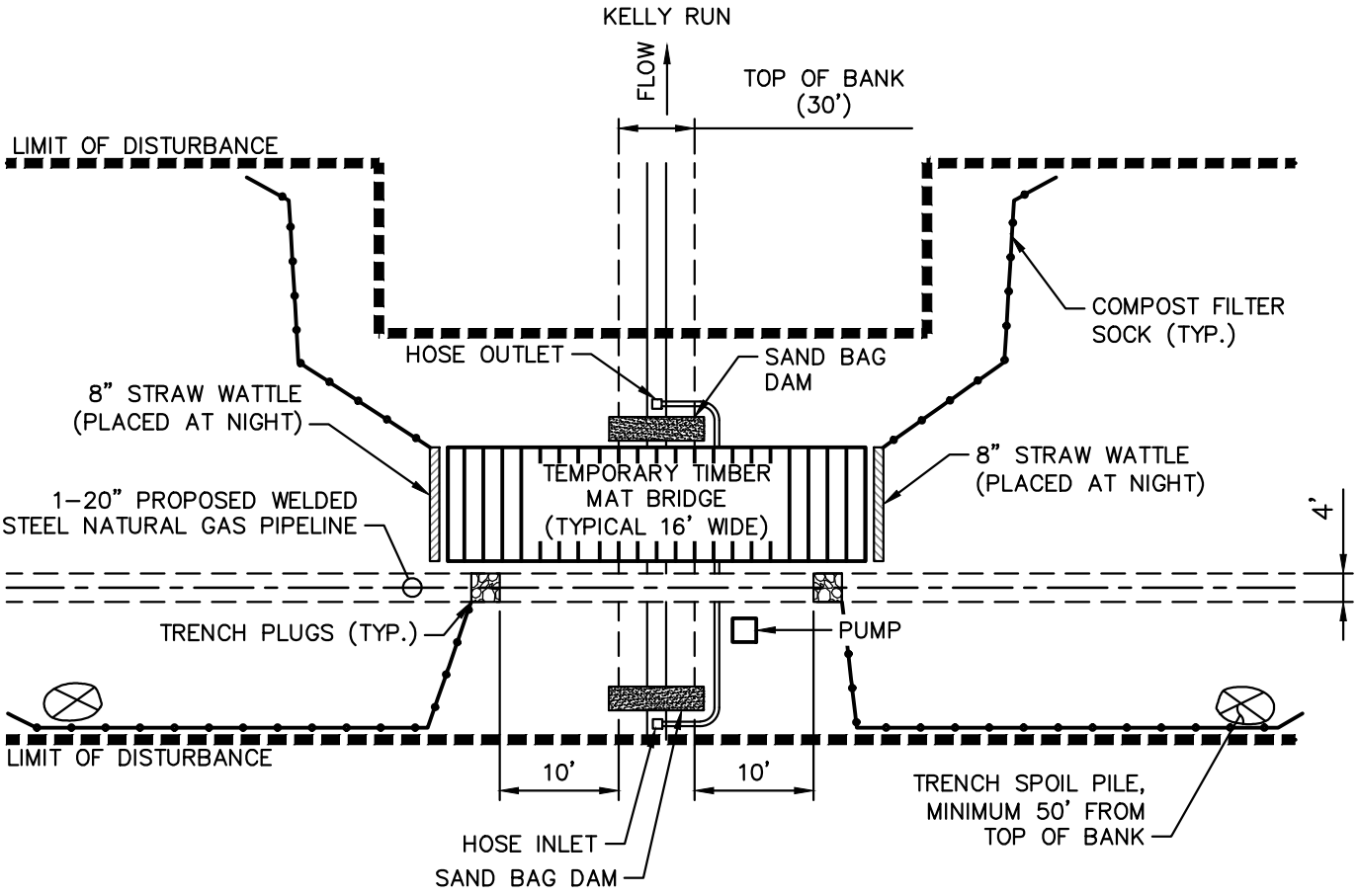

PLAN
NOT TO SCALE

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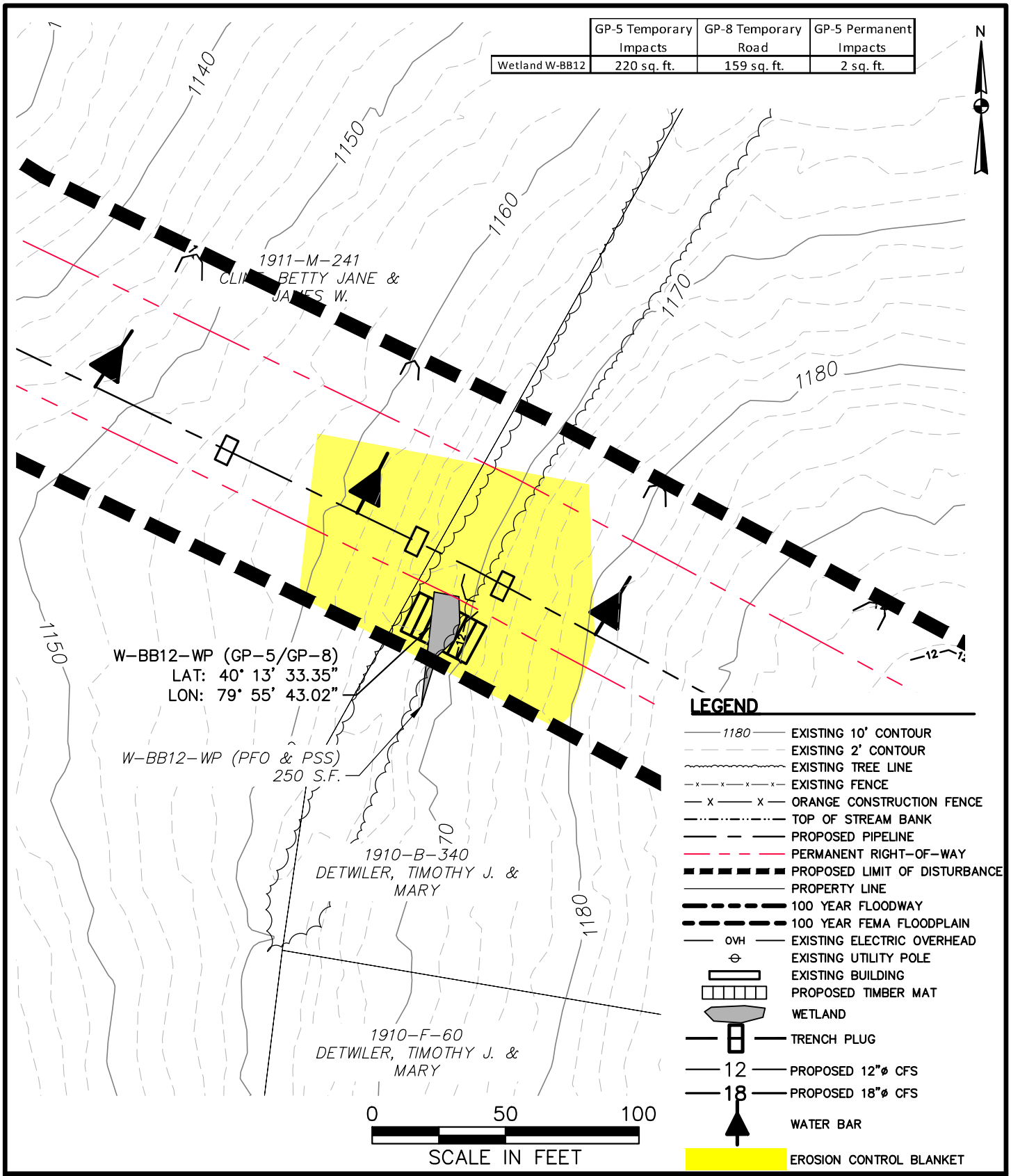
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHNEY COUNTY
GP-5/GP-8 FOR S-BB3
PLAN
SCALE: NOT TO SCALE

DATE:	03/14/16
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 4

FIGURE 2



R:_212 - OGA\O&G\EQT\00176 - EEP\GPs\H318\CCD Comment Responses\H318 - 00176GP041.dwg PIT JOE.HERBSTRITT 3/9/2016 5:56:06 PM

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EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE - ALLEGHENY COUNTY
GP-5/GP-8 FOR W-BB12-WP
PLAN

SCALE: 1" = 50'

DATE:	03/14/16
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

FIGURE 1

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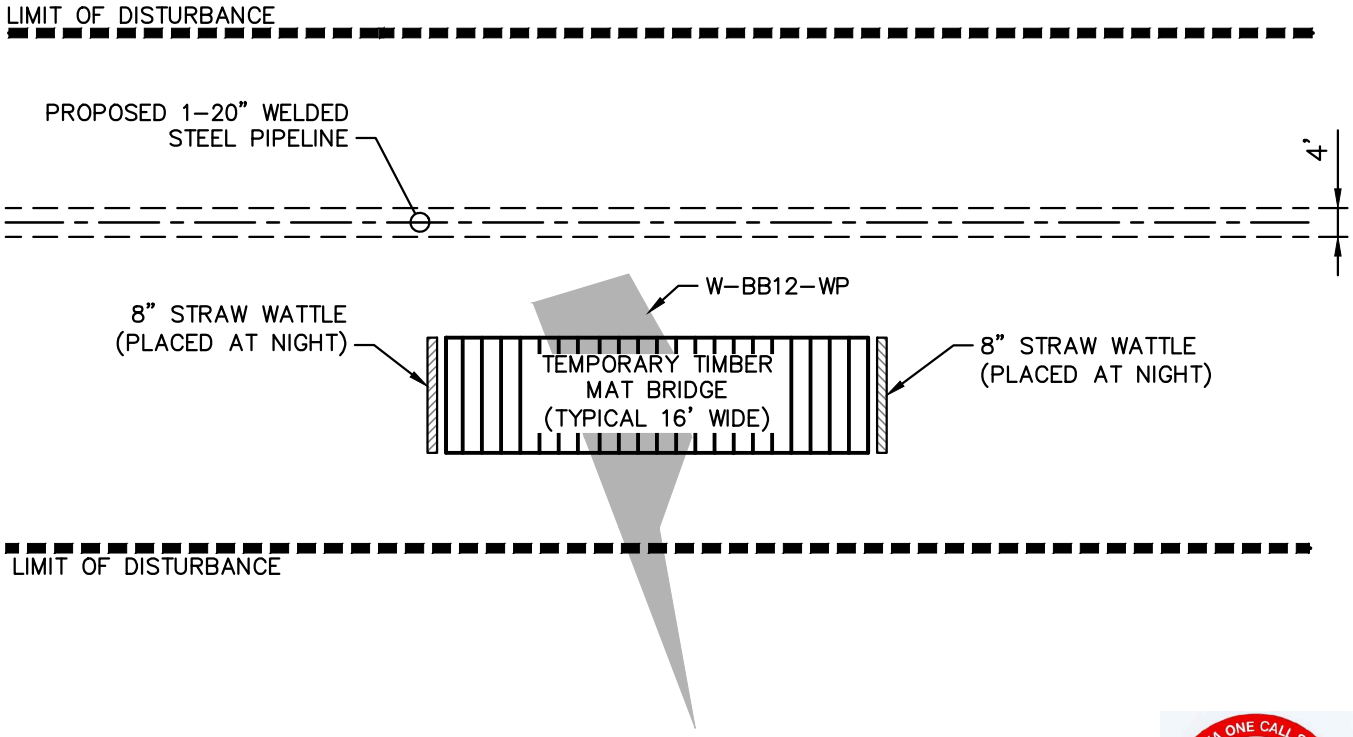

PLAN
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H318 PIPELINE – ALLEGHNEY COUNTY
GP-5/GP-8 FOR W-BB12-WP
PLAN

SCALE: NOT TO SCALE

DATE:	03/14/16
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 4

FIGURE 2

Psi 639

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
110 Radnor Road, Suite 101
State College, Pennsylvania 16801-4850

February 18, 2016

Dale Sparks
Environmental Solutions & Innovations, Inc.
4525 Este Avenue
Cincinnati, OH 45232

RE: USFWS Project #2015-0578

Dear Mr. Sparks:

Thank you for your letter of December 17, 2015, which requested our review of mist-net survey results for the Pennsylvania portion of the proposed Equitrans Expansion project. This project is located in Allegheny, Greene, and Washington Counties, Pennsylvania. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of endangered and threatened species.

Indiana bat

The proposed project is located within the range of the Indiana bat (*Myotis sodalis*), a species that is federally listed as endangered. Due to proposed forest clearing associated with construction of the pipeline, summer surveys were recommended to determine whether Indiana bats are present. According to the December 2015 survey report, surveys were conducted at10 sites within the project area between July 26 and August 9, 2015, in accordance with the Fish and Wildlife Service's Indiana bat summer survey guidelines. During these surveys, 94 bats of three species were captured, but this did not include any federally listed bat species. Based on these survey results, we have concluded that Indiana bats are either not present in the project area, or are present in such low densities that they were not detected. In addition, the project is not within an area that is known to be occupied by a maternity colony, or within the fall swarming habitat associated with any known Indiana bat hibernacula. Consequently, we have determined that tree-clearing related to installation of the proposed natural gas pipeline construction project is not likely to adversely affect the Indiana bat.

Pennsylvania Fish & Boat Commission
established 1866

Division of Environmental Services
Natural Gas Section
450 Robinson Lane
Bellefonte, PA 16823

January 5, 2016

IN REPLY REFER TO
SIR# 44257

Environmental Solutions & Innovations, Inc.
John Spaeth
4525 Este Avenue
Cincinnati, Ohio 45232

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
PNDI Search No.
Equitrans Expansion Project.
GREENE County: - WASHINGTON County:

Dear John Spaeth:

This responds to your inquiry about a Pennsylvania Natural Diversity Inventory (PNDI) Internet Database search "potential conflict" or a threatened and endangered species impact review. These projects are screened for potential conflicts with rare, candidate, threatened or endangered species under Pennsylvania Fish & Boat Commission jurisdiction (fish, reptiles, amphibians, aquatic invertebrates only) using the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files. These species of special concern are listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, and the Pennsylvania Fish & Boat Code (Chapter 75), or the Wildlife Code.

On October 11, 2015, you conducted a mussel presence/absence survey at the proposed pipeline crossing of South Fork Tenmile Creek (39.90999 -80.09235). According to the resulting report, timed searches yielded four live individuals of three species: two Fragile Papershell (Leptodea fragilis) in the downstream indirect effects area, one Giant Floater (*Pyganodon grandis*) in the upstream indirect effects area, and one Fluted-shell (*Lasmigona costata*) in the direct effects area. I concur with the results of this evaluation. The project proposes to traverse South Fork Tenmile Creek via HDD techniques; therefore, I do not foresee the proposed project resulting in adverse impacts to the mussel species of special concern. If proposed crossing method on the South Fork Tenmile Creek changes, you will need to contact this office for further consultation and we will recommend moving mussels out of the affected areas.

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated

with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Gary Smith at 814-279-3080 and refer to the SIR # 44257. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,

Heather A. Smiles, Chief
Natural Gas Section

HAS/GAS/dn

Northern long-eared bat

The proposed project is located within the range of the federally threatened northern long-eared bat (*Myotis septentrionalis*). No northern long-eared bats were captured during the summer 2015 surveys.

On January 14, 2016, the Service published a final rule that tailors protections for this species under the Endangered Species Act (81 FR 1900; see: https://www.gpo.gov/fdsys/pkg/FR-2016-01-14/pdf/2016-00617.pdf). Because your project is not located within 0.25 mile of a known northern long-eared bat hibernaculum or within 150 feet from a known, occupied maternity roost tree, any incidental take that might result from tree removal is not prohibited and no further consultation regarding this species is necessary. More information on the northern long-eared bat and the 4(d) rule can be found here:
http://www.fws.gov/midwest/endangered/mammals/nleb/

This response relates only to endangered or threatened species under our jurisdiction, based on an office review of the proposed project's location. No field inspection of the project area has been conducted by this office. Consequently, this letter is not to be construed as addressing potential Service concerns under the Fish and Wildlife Coordination Act or other authorities.

To avoid potential delays in reviewing your project, please use the above-referenced USFWS project tracking number in any future correspondence regarding this project.

If you have any questions regarding this matter, please contact Pamela Shellenberger of my staff at 814-234-4090.

Sincerely,

Lora L. Zimmerman
Field Office Supervisor

TETRA TECH

February 17, 2016

Andrea MacDonald, Deputy SHPO
Attention: Kira M. Heinrich, Archaeological Project Reviewer (Western Region)
Pennsylvania State Historic Preservation Office
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

Subject: Equitrans Expansion Project (FERC Docket No. CP16-13-000)
Phase I Archaeological Survey Report, Greene, Allegheny, and Washington Counties, Pennsylvania
ER No. 2015-1446-042
Request for Comment Pursuant to Section 106 of the National Historic Preservation Act

Dear Ms. MacDonald:

On behalf of Equitrans, LP of Pittsburgh, Pennsylvania, Tetra Tech, Inc., hereby submits one copy of a report, *Equitrans Expansion Project (FERC Docket No. CP16-13-000)—Phase I Archaeological Survey: Jefferson, Morgan, & Franklin Townships, Greene County; Forward Township, Allegheny County; and Union Township, Washington County, Pennsylvania*. The report describes the results of a Phase I archaeological survey for the Pennsylvania elements of the proposed project. An updated Project Review Form is also included with this submittal. Tetra Tech also previously submitted an architectural survey report on this project for your agency's review, which was sent on January 28, 2016.

Equitrans has applied to the Federal Energy Regulatory Commission (FERC) for a Certificate of Public Convenience and Necessity pursuant to Section 7(c) of the Natural Gas Act authorizing it to construct and operate the proposed project (FERC Docket No. CP16-13-000). Please review the report in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended. We would also specifically like to request comment on the Unanticipated Discoveries Plan for this project, found in Appendix I of the report.

To ensure accurate filing of your review, note that your agency may also have correspondence concerning this project under ER Nos. 2015-2081-042 and 2015-1694-042. The ER number employed here, 2015-1446-042, was provided on July 27, 2015, in response to our initial technical data submittal of July 8, 2015, and is the one we will be using to reference this project moving forward.

Should you require additional information to complete this review, contact me at (973)-630-8358 or by e-mail at chris.borstel@tetratech.com.

Thank you for your assistance in this matter.

Sincerely yours,

Christopher L. Borstel, Ph.D., RPA
Cultural Resources Specialist

Cc: S. Haugh, Tetra Tech
T. Pellerin, Tetra Tech
S. Frazier, Equitrans

Encl.

Tetra Tech, Inc.
1000 The American Road, Morris Plains, NJ 07950
Tel 973.630.8000 Fax 973.630.8025 www.tetratech.com

Pennsylvania Historical & Museum Commission

PROJECT REVIEW FORM

Request to Initiate SHPO Consultation on State and Federal Undertakings

SHPO USE ONLY
DATE RECEIVED:
ER NUMBER:

REV: 5/2012

SECTION A: GENERAL PROJECT INFORMATION

Is this a new submittal? ○ YES ○ NO **OR** ◉ **This is additional information for ER Number:** 2015-1446-042

Project Name	Equitrans Expansion Project	County	Multiple
Project Address	Jefferson, Morgan, and Franklin Twps, Greene Co.; Forward Twp., Allegheny		
City/State/ Zip	See "Project Address"	Municipality	See "Project Address"

SECTION B: PRIMARY CONTACT INFORMATION

Name	Christopher L. Borstel, Ph.D., RPA	Phone	(973) 630-8358
Company	Tetra Tech, Inc.	Fax	(973) 630-8025
Street/P.O. Box	1000 The American Road	Email	chris.borstel@tetratech.com
City/State/Zip	Morris Plains NJ 07950		

SECTION C: PROJECT DESCRIPTION

This project is located on: (check all that apply) ☐ Federal property ☐ State property ☐ Municipal property ☑ Private property

List all Federal and State agencies and programs (funding, permits, licenses) involved in this project

Agency Type	Agency/Program/Permit Name	Project/Permit/Tracking Number (if applicable)
Federal	Federal Regulatory Energy Commission	Docket No. CP16-13-000

Proposed Work – Attach project description, scope of work, site plans, and/or drawings

Project includes (check all that apply): ☑ Construction ☑ Demolition ☐ Rehabilitation ☐ Disposition

Total acres of project area: 315 Total acres of earth disturbance: 186

Are there any buildings or structures within the project area? ◉ Yes ○ No Approximate age: ca. 1839-2015

This project involves properties listed in or eligible for listing in the National Register of Historic Places, or designated as historic by a local government	Yes	No	Unsure	Name of historic property or historic districts	Monongahela River Navigation System (NRE); P&LE RR Corridor (NRE)
	◉	○	○		

Please print and mail completed form and all attachments to:

PHMC
State Historic Preservation Office
400 North St.
Commonwealth Keystone Building, 2nd Floor
Harrisburg, PA 17120-0093

Attachments – Please include the following information with this form

- ☑ **Map** – 7.5' USGS quad showing project boundary and Area of Potential Effect
- ☑ **Description/Scope** – Describe the project, including any ground disturbance and previous land use
- ☑ **Site Plans/Drawings** – Indicate the location and age, if known, of all buildings in the project area
- ☑ **Photographs** – Attach prints or digital photographs showing the project site, including images of all buildings and structures keyed to a site plan

SHPO DETERMINATION (SHPO USE ONLY) SHPO REVIEWER:

- ☐ There are **NO HISTORIC PROPERTIES** in the Area of Potential Effect
- ☐ The project will have **NO EFFECT** on historic properties
- ☐ The project will have **NO ADVERSE EFFECTS** on historic properties:
- ☐ The project will have **NO ADVERSE EFFECTS WITH CONDITIONS** (see attached)
- ☐ **SHPO REQUESTS ADDITIONAL INFORMATION** (see attached)

Attachment General-1a, Part 1

Chapter 105 Water Obstruction and Encroachment Joint Permit Application, H-318
Wetland W-BB7 Crossing Project, Allegheny County Pennsylvania

Chapter105 Water Obstruction and Encroachment Joint Permit Application

H-318 Wetland W-BB7 Crossing Project

Allegheny County, Pennsylvania

Prepared By:

Tetra Tech, Inc.

For
Equitrans, LP
625 Liberty Ave
Pittsburgh, PA

June 2016

TABLE OF CONTENTS

Tab 1

General Information Form

1300-PM-BIT0001 5/2012
Form

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the Department.

Related ID#s (If Known)		DEP USE ONLY
Client ID#	**APS ID#**	Date Received & General Notes
Site ID#	**Auth ID#**	
Facility ID#		

CLIENT INFORMATION

DEP Client ID#	**Client Type / Code**
163329	LLP

Organization Name or Registered Fictitious Name	**Employer ID#** (EIN)	**Dun & Bradstreet ID#**
Equitrans, LP	251776875	

Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**

Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**

Mailing Address Line 1	**Mailing Address Line 2**
625 Liberty Avenue	Suite 1700

Address Last Line – City	**State**	**ZIP+4**	**Country**
Pittsburgh	PA	15222	USA

Client Contact Last Name	**First Name**	**MI**	**Suffix**
Frazier	Stephanie		

Client Contact Title	**Phone**	**Ext**
Supervisor Permitting - Environmental	(412) 553-5798	

Email Address	**FAX**
SFrazier@eqt.com	(412) 395-2156

SITE INFORMATION

DEP Site ID#	**Site Name**
	H-318 Wetland W-BB7

EPA ID# N/A **Estimated Number of Employees to be Present at Site** N/A

Description of Site
Wetland W-BB7

County Name	**Municipality**	**City**	**Boro**	**Twp**	**State**
Allegheny	Forward Township	☐	☐	☒	
County Name	**Municipality**	**City**	**Boro**	**Twp**	**State**
		☐	☐	☐	

Site Location Line 1	**Site Location Line 2**
614 McVicker Lane	

Site Location Last Line – City	**State**	**ZIP+4**
Monongahela	PA	15063

Detailed Written Directions to Site
Directions to Site from PA DEP Southwest Regional Office (400 Waterfront Dr., Pittsburgh, PA 15222):Head south on PA-28S to I-579S (1.2 miles). Take I-579S through the Liberty Tunnel (2.5 miles). Turn right to exit on the PA-51S ramp towards Uniontown. Head south on PA-51S for 13.5 miles and cross the Monongahela River. Exit on Market St. (600 feet). Left onto S 2nd Ave (0.3 miles). Left onto Center Ave and continue as Center Ave. becomes Bunola River Rd. (4 miles). Left onto Church Hollow Rd. (0.9 miles). Left onto McVicker Lane. The site is northeast of the house at 614 McVicker Lane

Site Contact Last Name	**First Name**	**MI**	**Suffix**
Frazier	Stephanie		

Site Contact Title	**Site Contact Firm**
Supervisor Permitting - Environmental	Equitrans, LP

Mailing Address Line 1	Mailing Address Line 2
625 Liberty Avenue	Suite 1700
Mailing Address Last Line – City	**State** **ZIP+4**
Pittsburgh	**PA** **15222**

Phone	Ext	FAX	Email Address
(412) 553-5798		(412) 395-2156	SFrazier@eqt.com

NAICS Codes (Two- & Three-Digit Codes – List All That Apply): 23

6-Digit Code (Optional): 237120

Client to Site Relationship
LESOP

FACILITY INFORMATION

Modification of Existing Facility

		Yes	No
1.	**Will this project modify an existing facility, system, or activity?**	☐	☒
2.	**Will this project involve an addition to an existing facility, system, or activity?**	☐	☒

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

	Facility Type	DEP Fac ID#		Facility Type	DEP Fac ID#
☐	Air Emission Plant		☐	Industrial Minerals Mining Operation	
☐	Beneficial Use (water)		☐	Laboratory Location	
☐	Blasting Operation		☐	Land Recycling Cleanup Location	
☐	Captive Hazardous Waste Operation		☐	MineDrainageTrmt/LandRecyProjLocation	
☐	Coal Ash Beneficial Use Operation		☐	Municipal Waste Operation	
☐	Coal Mining Operation		☐	Oil & Gas Encroachment Location	
☐	Coal Pillar Location		☐	Oil & Gas Location	
☐	Commercial Hazardous Waste Operation		☐	Oil & Gas Water Poll Control Facility	
☐	Dam Location		☐	Public Water Supply System	
☐	Deep Mine Safety Operation -Anthracite		☐	Radiation Facility	
☐	Deep Mine Safety Operation -Bituminous		☐	Residual Waste Operation	
☐	Deep Mine Safety Operation -Ind Minerals		☐	Storage Tank Location	
☐	Encroachment Location (water, wetland)		☐	Water Pollution Control Facility	
☐	Erosion & Sediment Control Facility		☐	Water Resource	
☐	Explosive Storage Location		☐	Other:	

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	**Minutes**	**Seconds**	**Degrees**	**Minutes**	**Seconds**
Wetland W-BB7	40	13	**51**	79	56	**11**

Horizontal Accuracy Measure: Feet <3ft *--or--* Meters

Horizontal Reference Datum Code
- ☐ North American Datum of 1927
- ☒ North American Datum of 1983
- ☐ World Geodetic System of 1984

Horizontal Collection Method Code: WAAS

Reference Point Code: CNTAR

Altitude: Feet 962 *--or--* Meters

Altitude Datum Name
- ☐ The National Geodetic Vertical Datum of 1929
- ☒ The North American Vertical Datum of 1988 (NAVD88)

Altitude (Vertical) Location Datum Collection Method Code: TOPO

Geometric Type Code: POINT

Data Collection Date: 7/11/2015

Source Map Scale Number: 1 Inch(es) = 50 Feet
--or-- Centimeter(s) = Meters

PROJECT INFORMATION

Project Name
Equitrans Expansion Project H-318 Wetland W-BB7 Crossing

Project Description
See attached Project Description

Project Consultant Last Name	First Name	MI	Suffix
Smith	Preston	R	

Project Consultant Title	Consulting Firm
Manager, Wetlands and Ecological Services Department	Tetra Tech, Inc.

Mailing Address Line 1	Mailing Address Line 2	
661 Andersen Drive	Foster Plaza 7	
Address Last Line – City	**State**	**ZIP+4**
Pittsburgh	PA	15220-2700

Phone	Ext	FAX	Email Address
(412) 921-8167		(412) 921-4040	Preston.Smith@tetratech.com

Time Schedules	Project Milestone (Optional)
January 2017	Proposed Construction Start Date
December 2017	**Proposed Construction Completion Date**

1.	**Have you informed the surrounding community and addressed any concerns prior to submitting the application to the Department?**	☒	Yes	☐	No
2.	**Is your project funded by state or federal grants?**	☐	Yes	☒	No

Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.
Aspect of Project Related to Grant
Grant Source: _____
Grant Contact Person: _____
Grant Expiration Date: _____

3.	**Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions)**	☒	Yes	☐	No

Note: If "No" to Question 3, the application is not subject to the Land Use Policy.
If "Yes" to Question 3, the application is subject to this policy and the Applicant should answer the additional questions in the **Land Use Information** section.

LAND USE INFORMATION

Note: Applicants are encouraged to submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

1.	**Is there an adopted county or multi-county comprehensive plan?**	☐	Yes	☒	No
2.	**Is there an adopted municipal or multi-municipal comprehensive plan?**	☐	Yes	☒	No
3.	**Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance?**	☒	Yes	☐	No

Note: If the Applicant answers "No" to either Questions 1, 2 or 3, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 4 and 5 below.
If the Applicant answers "Yes" to questions 1, 2 and 3, the Applicant should respond to questions 4 and 5 below.

4.	**Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval?** If zoning approval has been received, attach documentation.	☒	Yes	☐	No
5.	**Have you attached Municipal and County Land Use Letters for the project?**	☒	Yes	☐	No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 and the accompanying Cultural Resource Notice Form.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	**Is this a coal mining project?** If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	☐	Yes	☒	No
1.1	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?**	☐	Yes	☐	No
1.2	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?**	☐	Yes	☐	No
1.3	**Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?**	☐	Yes	☐	No
1.4	**For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No
1.5	**Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐	Yes	☐	No
1.6	**Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?**	☐	Yes	☐	No
2.0	**Is this a non-coal (industrial minerals) mining project?** If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	☐	Yes	☒	No
2.1	**Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?**	☐	Yes	☐	No
2.2	**Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?**	☐	Yes	☐	No
2.3	**Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?**	☐	Yes	☐	No
2.4	**For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No
2.5	**Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐	Yes	☐	No

3.0	**Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well?** If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	☐	Yes	☒	No
3.1	**Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?**	☐	Yes	☐	No
3.2	**Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system?** If "Yes", discuss in *Project Description*.	☐	Yes	☐	No
3.3	**Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?**	☐	Yes	☐	No
4.0	**Will the project involve a construction activity that results in earth disturbance?** If "Yes", specify the total disturbed acreage. **4.0.1 Total Disturbed Acreage** 0.55 acres	☒	Yes	☐	No
5.0	**Does the project involve any of the following?** If "Yes", respond to 5.1-5.3. If "No", skip to Question 6.0.	☒	Yes	☐	No
5.1	**Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?**	☐	Yes	☒	No
5.2	**Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?**	☒	Yes	☐	No
5.3	**Floodplain Projects by the commonwealth, a Political Subdivision of the commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?**	☐	Yes	☒	No
6.0	**Will the project involve discharge of stormwater or wastewater from an industrial activity to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?**	☐	Yes	☒	No
7.0	**Will the project involve the construction and operation of industrial waste treatment facilities?**	☐	Yes	☒	No
8.0	**Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations?** If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the *Project Description*, where applicable. **8.0.1 Estimated Proposed Flow (gal/day)**	☐	Yes	☒	No
9.0	**Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system?**	☐	Yes	☒	No
	9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	☐	Yes	☐	No
10.0	**Is this project for the beneficial use of biosolids for land application within Pennsylvania?** If "Yes" indicate how much (i.e. gallons or dry tons per year). **10.0.1 Gallons Per Year (residential septage)** _____ **10.0.2 Dry Tons Per Year (biosolids)**	☐	Yes	☒	No
11.0	**Does the project involve construction, modification or removal of a dam?** If "Yes", identify the dam. **11.0.1 Dam Name**	☐	Yes	☒	No

12.0	**Will the project interfere with the flow from, or otherwise impact, a dam?** If "Yes", identify the dam. **12.0.1 Dam Name**	☐	Yes	☒	No
13.0	**Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)?** If "Yes", identify each type of emission followed by the amount of that emission. **13.0.1 Enter all types & amounts of emissions; separate each set with semicolons.**	☐	Yes	☒	No
14.0	**Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year?** If "Yes", check all proposed sub-facilities. **14.0.1 Number of Persons Served** _____ **14.0.2 Number of Employee/Guests** _____ **14.0.3 Number of Connections** _____	☐	Yes	☒	No
	14.0.4 Sub-Fac: Distribution System	☐	Yes	☐	No
	14.0.5 Sub-Fac: Water Treatment Plant	☐	Yes	☐	No
	14.0.6 Sub-Fac: Source	☐	Yes	☐	No
	14.0.7 Sub-Fac: Pump Station	☐	Yes	☐	No
	14.0.8 Sub Fac: Transmission Main	☐	Yes	☐	No
	14.0.9 Sub-Fac: Storage Facility	☐	Yes	☐	No
15.0	**Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?**	☐	Yes	☒	No
16.0	**Is your project to be served by an existing public water supply?** If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project. **16.0.1 Supplier's Name** _____	☐	Yes	☒	No
	16.0.2 Letter of Approval from Supplier is Attached	☐	Yes	☐	No
17.0	**Will this project involve a new or increased drinking water withdrawal from a stream or other water body?** If "Yes", should reference both Water Supply and Watershed Management. **17.0.1 Stream Name**	☐	Yes	☒	No
18.0	**Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste?** If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed. **18.0.1 Type & Amount**	☐	Yes	☒	No
19.0	**Will your project involve the removal of coal, minerals, etc. as part of any earth disturbance activities?**	☐	Yes	☒	No
20.0	**Does your project involve installation of a field constructed underground storage tank?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **20.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No
21.0	**Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **21.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No

22.0	**Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **22.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No
23.0	**Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **23.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No
24.0	**Will the intended activity involve the use of a radiation source?**	☐	Yes	☒	No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

Type or Print Name Preston Smith

Signature	**Title**	**Date**
	Manager, Wetlands and Ecological Services Department	6-28-12

GIF PROJECT DESCRIPTION

The portion of the Equitrans Expansion Project (EEP) in Allegheny and Washington Counties (the H-318 Pipeline) will include the installation of one, 20-inch natural gas transmission pipeline, approximately 3 miles long, within a 100-ft-wide construction right-of-way (ROW) and a 50-ft-wide permanent ROW. The H-318 Pipeline will move gas from the EQT gathering, LLC Applegate Gathering System, in Forward Township, Allegheny County, to the existing Equitrans, LP H-148 Pipeline in Union Township, Washington County, for delivery south. The EEP Wetland W-BB7 Crossing Project is a part of the H-318 Pipeline portion of the EEP. The temporary construction ROW will be reduced to 75-ft in width through Wetland W-BB7 to minimize impacts.

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERWAYS ENGINEERING AND WETLANDS

CHAPTER 105 FEE(S) CALCULATION WORKSHEET

Additional information can be found at 25 PA Code §105.13 (relating to regulated activities – information and fees), the General Permit Registration (3150-PM-BWEW0500), the Joint Permit Application (3150-PM-BWEW0036) and the Dam Permit Application (3140-PM-BWEW0001)

Federal, State, county or municipal agencies or municipal authorities: ☐ **EXEMPT from fees**

These entities are exempt from these fees. If the applicant falls into one of these categories, please check the box above and provide only the first page of this worksheet with the project application or registration.

ALL OTHERS:

1. Please place an "X" in the box next to all authorizations that apply to the project and complete the fee information below those authorization(s). Projects may require multiple authorizations and fees, further clarification and examples are included below and at the end of this document.
2. Total each authorization, Section, and Part. Part One is for Water Obstructions and Encroachment authorizations, Part Two is for Dam Safety authorizations.
3. Please provide this completed worksheet (page 1 and page 2 and/or page 3, as is appropriate to the project) and a check for the applicable fee(s) with the project application or registration. The check should be made payable to the "**Commonwealth of Pennsylvania Clean Water Fund**" OR "**Allegheny County Conservation District Clean Water Fund**", whichever is the reviewing entity.

NOTES:

Per *25 PA Code §105.13(c)(2)(iii)* Disturbance review fees are calculated by individually adding all of the permanent and temporary impacts to waterways, floodways, floodplains and bodies of water including wetlands to the next highest tenth acre and multiplying the permanent and temporary impacts by the respective fees and then these amounts are added to the other applicable fees.

Entities proposing structures or activities to occupy a Submerged Lands of the Commonwealth must obtain a Submerged Lands License Agreement (SLLA) and pay the appropriate annual charge. The applicant will be contacted if this charge applies to the project.

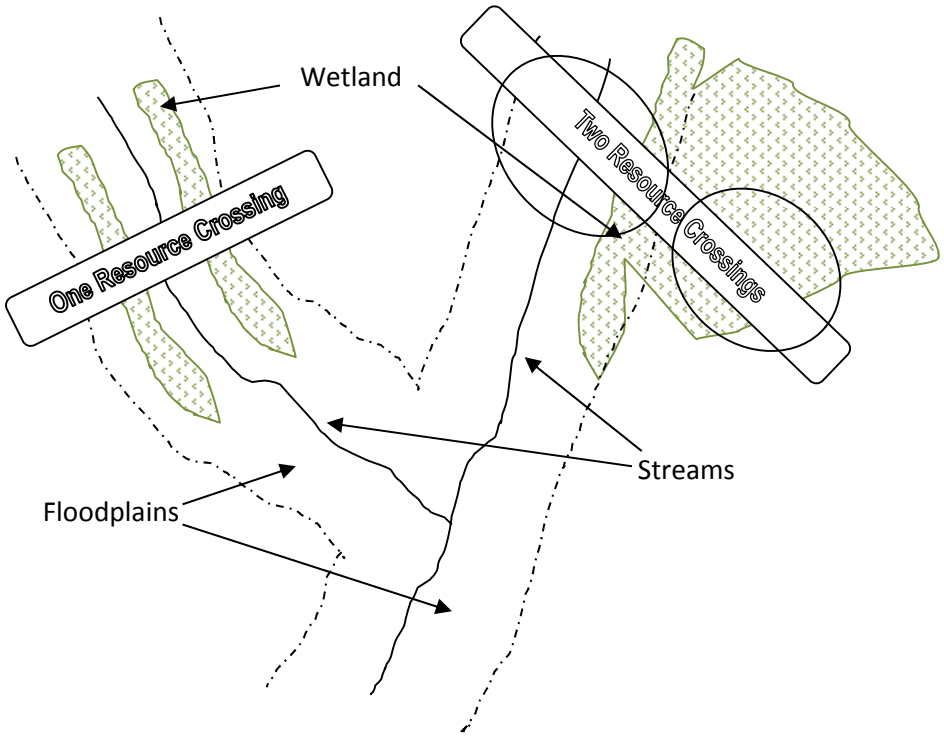
Floodway – The channel of the watercourse and portions of the adjoining floodplains which are reasonably required to carry and discharge the 100-year frequency flood. Unless otherwise specified, the boundary of the floodway is as indicated on maps and flood insurance studies provided by FEMA. In an area where no FEMA maps or studies have defined the boundary of the 100-year frequency floodway, it is assumed, absent evidence to the contrary, that the floodway extends from the stream to 50 feet from the top of the bank of the stream.

Wetland and Stream Clarification:

[1] In many instances, wetlands are located within the floodplain of a stream. These resources for the purposes of calculating disturbance fees are considered co-located or overlapping and the area of disturbance would only be used once.

[2] In the case of GP-5, GP-7 and GP-8 fees are charged per structure per resource crossing and the following also applies to the disturbance fees:

- A crossing of the stream and the floodplain with wetlands present within the floodplain is considered one resource crossing.
- When the crossing traverses a stream and the floodplain and a wetland that is located outside of the floodplain or a wetland that extends out beyond the floodplain, it is considered two resource crossings.



PART ONE: WATER OBSTRUCTIONS AND ENCROACHMENTS

SECTION A. APPLICATION FEES

☒ **WATER OBSTRUCTION AND ENCROACHMENT PERMIT** (Joint Permit Application)

Some activities or structures within a project may also qualify for an accumulation of General Permit fees, please mark the box above indicating an Individual Water Obstruction and Encroachment Permit AND the corresponding fee(s) in the General Permit section below those. Activities or structures not qualifying for a General Permit fee must include a disturbance fee.

☒ Administrative Filing Fee[1]		$ 1,750	+	
☒ Temporary Disturbance ($400/0.1ac)	0.60 acres x $4,000 =	$ 2,400	+	
☐ Permanent Disturbance ($800/0.1ac)	0. acres x $8,000 =	$ 0		= $ 4,150
		WO&E FEE subtotal (a)		$ 4,150

☐ **GENERAL PERMIT(S)** (select activity/structure(s) below, see page 4 for "#" explanation)

Some activities or structures within a project requiring an Individual Water Obstruction and Encroachment Permit may qualify for an accumulation of General Permit fees, please mark the corresponding fee(s) below but not the box above indicating a General Permit.

☐ GP-1 Fish Habitat Enhancement Structures		$ 50		= $ _____
☐ GP-2 Small Docks and Boat Launching Ramps	_____ (#) x	$ 175		= $ _____
☐ GP-3 Bank Rehabilitation, Bank Protection and Gravel Bar Removal	_____ (#) x	$ 250		= $ _____
☐ GP-4 Intake and Outfall Structures	_____ (#) x	$ 200		= $ _____
☐ GP-5 Utility Line Stream Crossings[2]	_____ (#) x _____ (#) x	$ 250		= $ _____
☐ GP-6 Agricultural Crossings and Ramps	_____ (#) x	$ 50		= $ _____
☐ GP-7 Minor Road Crossings[2]	_____ (#) x	$ 350		= $ _____
☐ GP-8 Temporary Road Crossings[2]	_____ (#) x	$ 175		= $ _____
☐ GP-9 Agricultural Activities		$ 50		= $ _____
☐ GP-10 Abandoned Mine Reclamation		$ 500		= $ _____
☐ GP-11 Maintenance, Testing, Repair, Rehabilitation, or Replacement of Water Obstructions and Encroachments[1]		$ 750	+	
☐ Temporary Disturbance ($400/0.1ac)	_____ acres x $4,000 =	$ _____	+	
☐ Permanent Disturbance ($800/0.1ac)	_____ acres x $8,000 =	$ _____		= $ _____
☐ GP-15 Private Residential Construction in Wetlands[1]		$ 750	+	
☐ Temporary Disturbance ($400/0.1ac)	_____ acres x $4,000 =	$ _____	+	
☐ Permanent Disturbance ($800/0.1ac)	_____ acres x $8,000 =	$ _____		= $ _____
		GP(s) FEE subtotal (b)		$ 0

PART ONE: SECTION A. APPLICATION FEE(S) subtotal (a+b=c) $ 4,150

SECTION B. OTHER FEES

☐ Environmental Assessment for Waived Activities (§105.13(c)(2)(iv))		$ 500		$ _____
☐ Amendment to Water Obstruction and Encroachment Permit				
☐ Major Amendment[1]		$ 500	+	
☐ Temporary Disturbance	_____ acres x $4,000 =	$ _____	+	$ _____
☐ Permanent Disturbance	_____ acres x $8,000 =	$ _____		= $ _____
☐ Minor Amendment		$ 250		$ _____
☐ Transfer of Water Obstruction and Encroachment Permit				
☐ WITH Submerged Lands License Agreement		$ 200		$ _____
☐ WITHOUT Submerged Lands License Agreement		$ 100		$ _____

PART ONE: SECTION B. OTHER FEE(S) subtotal (d) $ 0

PART ONE: FEE(S) TOTAL (c+d=e) $ 4,150

DEP USE ONLY			
FEE TOTAL:		Permit / Authorization Number (s):	
Correct Amount:		Check #:	

Check Amount: _____ Payable to: _____ _____

PART TWO: DAM SAFETY (USE ONE FEE SHEET PER DAM)

SECTION A. APPLICATION FEES

☐ **DAM PERMIT APPLICATION – NEW DAM**

☐ Size A	☐ Hazard 1 $26,500	☐ Hazard 2 $26,500	☐ Hazard 3 $25,500	☐ Hazard 4 $23,500	$ ____
☐ Size B	☐ Hazard 1 $19,000	☐ Hazard 2 $19,000	☐ Hazard 3 $18,500	☐ Hazard 4 $17,000	$ ____
☐ Size C	☐ Hazard 1 $10,500	☐ Hazard 2 $10,500	☐ Hazard 3 $10,000	☐ Hazard 4 $ 8,000	$ ____

☐ **STAGED CONSTRUCTION**

NO. OF STAGES BEYOND INITIAL STAGE _____ X APPLICATION FEE _____ X 0.90 (90%) $ ____

☐ **DAM PERMIT APPLICATION – MODIFICATION OF DAM**

☐ Size A	☐ Hazard 1 $18,500	☐ Hazard 2 $18,500	☐ Hazard 3 $18,500	☐ Hazard 4 $18,000	$ ____
☐ Size B	☐ Hazard 1 $12,000	☐ Hazard 2 $12,000	☐ Hazard 3 $12,000	☐ Hazard 4 $11,500	$ ____
☐ Size C	☐ Hazard 1 $ 7,500	☐ Hazard 2 $ 7,500	☐ Hazard 3 $ 7,500	☐ Hazard 4 $ 7,500	$ ____

☐ **STAGED CONSTRUCTION**

NO. OF STAGES BEYOND INITIAL STAGE _____ X APPLICATION FEE _____ X 0.85 (85%) $ ____

☐ **DAM PERMIT APPLICATION – OPERATION & MAINTANANCE OF EXISTING DAM**

☐ Size A	☐ Hazard 1 $12,500	☐ Hazard 2 $12,500	☐ Hazard 3 $12,000	☐ Hazard 4 $10,000	$ ____
☐ Size B	☐ Hazard 1 $10,000	☐ Hazard 2 $10,000	☐ Hazard 3 $ 9,500	☐ Hazard 4 $ 8,500	$ ____
☐ Size C	☐ Hazard 1 $ 7,000	☐ Hazard 2 $ 7,000	☐ Hazard 3 $ 6,500	☐ Hazard 4 $ 6,000	$ ____

PART TWO: SECTION A. APPLICATION FEE(S) subtotal (a) $ ____

SECTION B. OTHER FEES

☐ Letter of Amendment or Authorization

☐ Major (≥$250,000)

☐ Size A $14,700 ☐ Size B $ 8,700 ☐ Size C $ 4,400 $ ____

☐ Minor (<$250,000)

☐ Size A $ 1,300 ☐ Size B $ 1,000 ☐ Size C $ 650 $ ____

☐ Major Dam Design Revision

☐ Size A $ 4,700 ☐ Size B $ 3,200 ☐ Size C $ 1,700 $ ____

☐ Environmental Assessment

☐ Environmental Assessment for Dam Removal (§105.12(a)(16)) $ 500 $ ____

☐ Non-Jurisdictional Dams $ 900 $ ____

☐ Letter of Amendment or Authorization

☐ Size A $ 1,400 ☐ Size B $ 1,000 ☐ Size C $ 900 $ ____

☐ Transfer of Dam Permit

☐ No Proof of Financial Responsibility $ 550 ☐ Proof of Financial Responsibility $300 $ ____

☐ Annual Registration

☐ Hazard 1 $ 1,500 ☐ Hazard 2 $ 1,500 ☐ Hazard 3 $ 800 $ ____

PART TWO: SECTION B. OTHER FEE(S) subtotal (b) $ ____

PART TWO: FEE(S) TOTAL (a+b=c) $ ____

DEP USE ONLY			
FEE TOTAL:	_____	Permit / Authorization Number (s):	_____
Correct Amount:	_____	Check #:	_____
Check amount:	_____	Payable to:	_____

Tab 2

Joint 105 Permit Application Form

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

and

DEPARTMENT OF ARMY CORPS OF ENGINEERS
(Baltimore, Philadelphia, and Pittsburgh Districts)

JOINT APPLICATION FOR PENNSYLVANIA WATER OBSTRUCTION AND ENCROACHMENT PERMIT AND U.S. ARMY CORPS OF ENGINEERS SECTION 404 PERMIT

Before completing this form, please read the step-by-step instructions and Section F Application Completeness Checklist provided with this Joint Permit package.

	AGENCY USE ONLY	
Application ID# (Assigned by DEP) _____	RECEIVED DATE _____	CHECK NO. _____
Program Application No. _____	REQUIRED APP. FEE _____	AMOUNT $_____

SECTION A. APPLICATION TYPE:

STANDARD ☒ SMALL PROJECTS ☐

SECTION B. APPLICANT IDENTIFIER

Applicant Name	Employer ID# (EIN)
Equitrans, LP	251776875
Consulting Firm	**Employer ID# (EIN)**
Tetra Tech, Inc.	954148514

SECTION C. PROJECT LOCATION DATA

Name of stream and/or body of water and Chapter 93 designation.

Tetra Tech delineated Wetland W-BB7 (PEM)

Corps District where project will occur.

☒ Pittsburgh (Ohio River Basin) ☐ Baltimore (Susquehanna River Basin) ☐ Philadelphia (Delaware River Basin)

Name of the U.S.G.S. 7 1/2 Minute Quadrangle Map where project is located: Monongahela, PA

Indicate location of project: Latitude 40.230838; Longitude -79.936386

Project type, purpose and need: The Equitrans Expansion Project (EEP) is designed to transport natural gas from the northern portion of the Equitrans system south to the interconnection with Mountain Valley Pipeline, LLC's proposed Mountain Valley Pipeline. The portion of the Project in Allegheny County (H-318 Pipeline) will move gas from new modifications at the existing EQT Gathering, LLC Applegate Gathering System, to a new Hartson tie-in at the existing Equitrans H-148 Pipeline for delivery south. The EEP Wetland W-BB7 Crossing is a part of the H-318 portion of the EEP.

SECTION D. PROJECT STATUS

HAS ANY PORTION OF PROPOSED PROJECT BEEN AUTHORIZED? ☐ yes ☒ no _____ date authorized

If yes, attach description of those portions of the project that have been authorized and identify dates of authorization. Also attach a completed PASPGP-4 Cumulative Impact Project Screening Form.

SECTION E. COMPLIANCE REVIEW

Yes	No	
☐	☒	Is the applicant (owner and/or operator) currently in violation of any permits issued by the Department? If yes, please provide:

1. Permit Number: _____
2. Nature of the violation (if any): _____

3. Status of violation (i.e., schedule for compliance, etc.): _____

SECTION F. APPLICATION COMPLETENESS CHECKLIST

Applicant must place an entry - Y = Yes, N = No, N/A = Not Applicable - in each left side column space. See Section 105.13 for additional details. If you are applying under the Small Projects Application format, place an entry in only those comments prefixed by an asterisk (*).

REQUIREMENT	Applicant Entry	DEP Use Only
a. GIF and permit application properly signed, sealed and witnessed	*Y	
b. Application Fee & Worksheet enclosed (see Section G.)	*Y	
c. Copies and proof of receipt - Act 14 notification - Acts 67/68/127	*Y	
d. Cultural Resource Notice (Notice, return receipt and PHMC review letter, as appropriate)	*Y	
e. PASPGP-4 Cumulative Impact Project Screening Form	*Y	
f. Bog Turtle Habitat Screening (copy of "No Effect" determination from the Army Corps of Engineers OR copy of documented clearance from the US Fish and Wildlife Service)	*N/A	
g. Pennsylvania Natural Diversity Inventory (PNDI Project Environmental Review Search Receipt including Avoidance Measures and documentation of agency coordination, as appropriate)	*Y	
h. Plans (site plan including cross sections and profiles for Subsections 151, 191, 231, 261)	*Y	
i. Location map	Y	
j. Project description narrative	*Y	
k. Color photographs with map showing location taken	*Y	
l. Environmental Assessment form	*Y	
m. Erosion and Sediment Control Plan and approval letter	Y	
n. Hydrologic and hydraulic analysis	Y	
o. Stormwater Management Analysis with consistency letter	Y	
p. Floodplain Management Analysis with consistency letter	Y	
q. Risk Assessment	Y	
r. Professional engineer's seal and certification	Y	
s. Alternative analysis	Y	
t. Mitigation plan	Y	

SECTION G. DETERMINATION OF APPLICATION FEES (DEP FEES ONLY)

The fee required for a project authorized under this permit shall be consistent with 25 PA Code §105.13 (relating to regulated activities – information and fees). To determine the application fee, please complete the Chapter 105 Fee(s) Calculation Worksheet (3150-PM-BWEW0553). Please provide the completed worksheet and a check for the applicable fee(s) made payable to the "Commonwealth of Pennsylvania Clean Water Fund."

SECTION H. ADJOINING PROPERTY OWNERS

Please list the name and address of all property owners whose land adjoins the project property.

NAME	ADDRESS
Riverview Golf Course	97 Golf Course Dr, Monongahela, PA 15063
Christine Smith	500 Smith Lane, Monongahela, PA 15063
William & Gail Ann McCall	615 McVicker Lane, Monongahela, PA 15063
Ginger Geary	2031 Church Hollow Rd, Monongahela, PA 15063
Louis & Linda Fine	621 McVicker Lane, Monongahela, PA 15063

SECTION I. CERTIFICATION AND SIGNATURE

If Privately Owned, all owners (such as husband and wife) must sign. One or more members authorized to sign on behalf of an entire partnership must sign. For a Corporation, the president, vice president or other responsible official is required to sign. For Political Subdivision, signatures of the chief officer or other responsible official empowered to sign is required with the seal affixed and attested by the clerk. For Commonwealth departments, boards, commissions, receivers, trustees and authorities, a department head, bureau director, executive director, chairman, commissioner or other responsible official is required to sign. Signatures other than above must be accompanied by a power of attorney or other notarized legal documentation indicating authorization to sign on behalf of the applicant.

Application is hereby made for a permit to authorize the activities described herein. I certify I am familiar with the information contained in this application, and to the best of my knowledge and belief, such information is true, complete and accurate. I further certify I possess the authority to undertake the proposed activities.

I certify that the project proposed in this application complies with and will be conducted in a manner that is consistent with the approved Coastal Zone Management program of the Commonwealth of Pennsylvania. (Only portions of Erie, Bucks, Philadelphia and Delaware Counties are in the Coastal Zone).

I grant permission to the agencies responsible for authorization of this work, or their duly authorized representative, to enter the project site for inspection purposes during working hours. I will abide by the conditions of the permit or license if issued and will not begin work without the appropriate authorization.

By: Brinton Goettel
(PRINT NAME)

(SIGNATURE) 5-9-16 (DATE)

VP Construction
(TITLE)

SEAL

WITNESS: Noelle M. Nuckels

COUNTY OF ALLEGHENY
STATE OF PENNSYLVANIA

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Noelle M. Nuckels, Notary Public
City of Pittsburgh, Allegheny County
My Commission Expires Sept. 7, 2016
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

Tab 2a

Prior Project Authorizations

PROJECT BACKGROUND AND PRIOR AUTHORIZATIONS

Project Background

The proposed Equitrans, LP (Equitrans) Expansion Project (EEP) is located in Allegheny, Washington, and Greene Counties, Pennsylvania, and Wetzel County, West Virginia. The EEP is designed to transport natural gas from the northern portion of the Equitrans system south to the interconnection with Mountain Valley Pipeline, LLC's proposed Mountain Valley Pipeline, as well as to existing interconnects with Texas Eastern Transmission, LP and Dominion Transmission, Inc. The EEP will also increase system reliability, efficiency, and operational flexibility for the benefit of Equitrans customers.

The portion of the EEP within Allegheny County proposes to install one 20" natural gas pipeline (H-318 Pipeline) approximately 3 miles long within a 100' construction right-of-way (ROW) and 50' permanent ROW. The proposed H-318 Pipeline will generally run east-west and will be located in Forward Township, Allegheny County, and Union Township, Washington County, Pennsylvania. A Pennsylvania Chapter 105 General Permit Application and a 401 Water Quality Certification Application were submitted to the Allegheny County Conservation District (ACCD) for the proposed H-318 Pipeline on October 27, 2015 and are currently under review. The ACCD subsequently requested a Chapter 105 Joint Permit Application for the portion of the proposed H-318 Pipeline that crosses Wetland W-BB7 (W-BB7), located at 614 McVicker Lane in Forward Township, Allegheny County, Pennsylvania. An Erosion and Sediment Control General Permit (ESCGP-2) was submitted to ACCD on March 28, 2016 (ESG 00003160001). A Project E & S Plan has been included in this tab for review (Tab 12).

In addition, a Submerged Land License Agreement request was submitted to the Pennsylvania Department of Environmental Protection on November 11, 2015 for the H-318 Pipeline Monongahela River crossing.

Equitrans submitted an application on October 27, 2015 seeking a Certificate of Public Convenience and Necessity from the Federal Energy Regulatory Commission (FERC) Docket No. CP16-13-000 pursuant to Section 7(c) of the Natural Gas Act authorizing it to construct and operate the proposed EEP.

Proposed Project Activities

The W-BB7 Crossing Project (Project) is the portion of the proposed H-318 Pipeline that crosses W-BB7 at 614 McVicker Lane (Tax Parcel 1740-P-00172-0000-00). The Project will have temporary impacts to approximately 0.55 acres of W-BB7 during pipeline construction and installation activities. The temporary construction ROW will be reduced to 75-ft in width for the crossing of Wetland BB-7. Once the project is complete the wetland will be restored and no permanent Project impacts of filling are anticipated to W-BB7.

Proposed Project Authorizations

Equitrans is seeking a Chapter 105 Water Obstruction and Encroachment Joint Permit approval for the proposed Project, authorizing Equitrans to temporarily impact 0.55 acres of W-BB7, a 2.0 acre palustrine

emergent (PEM) wetland for the installation of the H-318 pipeline. Past and present land use of the Project area is agriculture. Future land use will remain agriculture upon completion of the pipeline installation and restoration activities. Relevant topographic features including streams, wetlands, roads, pipelines, structures, utility lines, fences, and other significant items within the Project limit of disturbance (LOD) have been illustrated on the Plan Sheets (Tab 7), where applicable.

Tab 3

Municipality and County Notifications and Receipts

TETRA TECH

PITT-06-16-034

June 23, 2016

Project Number 212IC-PB-00176

Allegheny County Commissioners
Allegheny County Courthouse
436 Grant Street
Room 119
Pittsburgh, Pennsylvania 15219

Reference: Equitrans, LP (Equitrans)
Equitrans Expansion Project Wetland W-BB7 Crossing Project

To Whom It May Concern:

This municipal notice, under the requirements of Acts 14, 67, 68, and 127, is to inform you that our client, Equitrans, LP (Equitrans), is applying for Chapter 105 Water Obstruction and Encroachment Joint Permit approval to authorize temporary impacts to a 0.55 acre wetland associated with Oil and Gas Exploration, Production, Processing or Treatment Operations or Transmission Facilities.

Project Name: Equitrans Expansion Project Wetland W-BB7 Crossing Project

Applicant Name: Equitrans, LP
625 Liberty Avenue
Suite 1700
Pittsburgh, PA 15222

Project Description: The proposed H-318 Pipeline is a 20" natural gas pipeline approximately 3 miles long within a 100' construction right-of-way and 50' permanent right-of-way. The H-318 Pipeline is part of the Equitrans Expansion Project, which is designed to transport natural gas from the northern portion of the Equitrans system south to the interconnection with Mountain Valley Pipeline, LLC's proposed Mountain Valley Pipeline, as well as to existing interconnects with Texas Eastern Transmission, LP and Dominion Transmission, Inc. The Equitrans Expansion Project will also increase system reliability, efficiency, and operational flexibility for the benefit of Equitrans customers.

The Wetland W-BB7 (W-BB7) Crossing Project (Project) is the portion of the proposed H-318 Pipeline that crosses W-BB7 in Forward Township, Allegheny County, Pennsylvania. Equitrans is seeking a Chapter 105 Water Obstruction and Encroachment Joint Permit approval for the Project, authorizing Equitrans to temporarily impact 0.55 acres of W-BB7, a 2.0 acre palustrine emergent (PEM) wetland. The pipe will be installed under W-BB7 by excavating a trench. A temporary timber bridge will be used to move equipment across the wetland to install the pipeline. Once the pipeline is installed, the trench will be filled to preconstruction elevations.

Site Location: The Project is located at 614 McVicker Lane, off of Church Hollow Road (SR 2003), in Forward Township, Allegheny County.

Enclosed is a General Information Form (GIF) and Project Location Map we have completed for the proposed Project. DEP invites you to review the attached GIF and Project Location Map and comment on the land use aspects of this Project; please be specific to DEP when identifying any areas of conflict. Please submit any comments concerning this project within 30 days from date of receipt of this letter to the DEP Southwest Regional Office, Bureau of Oil and Gas Management Surfaces Permitting Section at:

Tetra Tech
661 Andersen Drive, Pittsburgh, PA 15220-2700
Tel 412.921.7090 Fax 412.921.4040 www.tetratech.com

Should you have questions regarding this correspondence, please do not hesitate to contact me at (412) 921-8167 or via e-mail at Preston.Smith@tetratech.com.

Sincerely,

Preston Smith
Manager, Wetland and Ecological Services Department

PS/stc

Enclosure: General Information Form; Project Location Map.

cc: File 212IC-PB-00176

June 27,2016

Dear Customer:

The following is the proof-of-delivery for tracking number 676115098392.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	M.CULLIVER	**Delivery location:**	ROOM 119 COUNTY COURTHOUSE PITTSBURGH, PA 15219
Service type:	FedEx Priority Overnight	**Delivery date:**	Jun 27, 2016 09:55
Special Handling:	Deliver Weekday Adult Signature Required		

Shipping Information:

Tracking number:	676115098392	**Ship date:**	Jun 24, 2016
		Weight:	0.5 lbs/0.2 kg

Recipient:
CHIEF CLERK
ALLEGHENY COUNTY COUNCIL
ROOM 119 COUNTY COURTHOUSE
436 GRANT STREET
PITTSBURGH, PA 15219 US

Shipper:
TETRA TECH -
TETRA TECH, INC.
661 ANDERSEN DRIVE
FOSTER PLAZA 7
PITTSBURGH, PA 15220 US

Reference Allegheny Crt/HTrexler
Purchase order number: 212C-PB-00176
Department number 212C-PB-00176

Thank you for choosing FedEx.

TETRA TECH

PITT-06-16-035

June 23, 2016

Project Number 212IC-PB-00176

Forward Township
Board of Supervisors
1000 Golden Circle Road
Elizabeth, Pennsylvania 15037

Reference: Equitrans, LP (Equitrans)
Equitrans Expansion Project Wetland W-BB7 Crossing Project

To Whom It May Concern:

This municipal notice, under the requirements of Acts 14, 67, 68, and 127, is to inform you that our client, Equitrans, LP (Equitrans), is applying for Chapter 105 Water Obstruction and Encroachment Joint Permit approval to authorize temporary impacts to a 0.55 acre wetland associated with Oil and Gas Exploration, Production, Processing or Treatment Operations or Transmission Facilities.

Project Name: Equitrans Expansion Project Wetland W-BB7 Crossing Project

Applicant Name: Equitrans, LP
625 Liberty Avenue
Suite 1700
Pittsburgh, PA 15222

Project Description: The proposed H-318 Pipeline is a 20" natural gas pipeline approximately 3 miles long within a 100' construction right-of-way and 50' permanent right-of-way. The H-318 Pipeline is part of the Equitrans Expansion Project, which is designed to transport natural gas from the northern portion of the Equitrans system south to the interconnection with Mountain Valley Pipeline, LLC's proposed Mountain Valley Pipeline, as well as to existing interconnects with Texas Eastern Transmission, LP and Dominion Transmission, Inc. The Equitrans Expansion Project will also increase system reliability, efficiency, and operational flexibility for the benefit of Equitrans customers.

The Wetland W-BB7 (W-BB7) Crossing Project (Project) is the portion of the proposed H-318 Pipeline that crosses W-BB7 in Forward Township, Allegheny County, Pennsylvania. Equitrans is seeking a Chapter 105 Water Obstruction and Encroachment Joint Permit approval for the Project, authorizing Equitrans to temporarily impact 0.55 acres of W-BB7, a 2.0 acre palustrine emergent (PEM) wetland. The pipe will be installed under W-BB7 by excavating a trench. A temporary timber bridge will be used to move equipment across the wetland to install the pipeline. Once the pipeline is installed, the trench will be filled to preconstruction elevations.

Site Location: The Project is located at 614 McVicker Lane, off of Church Hollow Road (SR 2003), in Forward Township, Allegheny County.

Enclosed is a General Information Form (GIF) and Project Location Map we have completed for the proposed Project. DEP invites you to review the attached GIF and Project Location Map and comment on the land use aspects of this Project; please be specific to DEP when identifying any areas of conflict. Please submit any comments concerning this project within 30 days from date of receipt of this letter to the DEP Southwest Regional Office, Bureau of Oil and Gas Management Surfaces Permitting Section at:

Tetra Tech
661 Andersen Drive, Pittsburgh, PA 15220-2700
Tel 412.921.7090 Fax 412.921.4040 www.tetratech.com

Should you have questions regarding this correspondence, please do not hesitate to contact me at (412) 921-8167 or via e-mail at Preston.Smith@tetratech.com.

Sincerely,

Preston Smith
Manager, Wetland and Ecological Services Department

PS/stc

Enclosure: General Information Form; Project Location Map.

cc: File 212IC-PB-00176

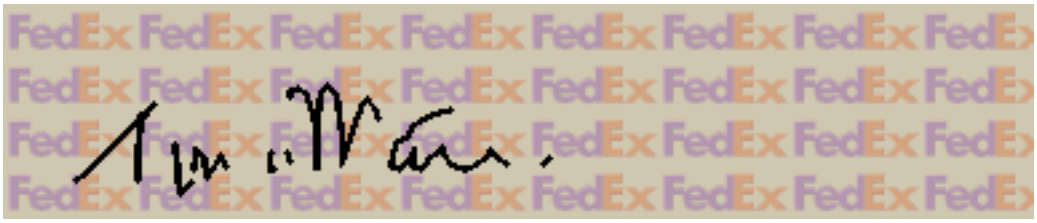
June 27,2016

Dear Customer:

The following is the proof-of-delivery for tracking number 676115098407.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	M.MARICINI	**Delivery location:**	BOARD OF SUPERVISORS ELIZABETH, PA 15037
Service type:	FedEx Priority Overnight	**Delivery date:**	Jun 27, 2016 09:21
Special Handling:	Deliver Weekday Adult Signature Required		



Shipping Information:

Tracking number:	676115098407	**Ship date:**	Jun 24, 2016
		Weight:	0.5 lbs/0.2 kg

Recipient:
FORWARD TOWNSHIP
BOARD OF SUPERVISORS
1000 GOLDEN CIRCLE
ELIZABETH, PA 15037 US

Shipper:
TETRA TECH -
TETRA TECH, INC.
661 ANDERSEN DRIVE
FOSTER PLAZA 7
PITTSBURGH, PA 15220 US

Reference
Forward TWP/H Trexler
Purchase order number:
212C-PB-00176
Department number
.212C-PB-00176

Thank you for choosing FedEx.

1300-PM-BIT0001 5/2012
Form

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the Department.

Related ID#s (If Known)		DEP USE ONLY
Client ID#	**APS ID#**	Date Received & General Notes
Site ID#	**Auth ID#**	
Facility ID#		

CLIENT INFORMATION

DEP Client ID#	**Client Type / Code**
163329	LLP

Organization Name or Registered Fictitious Name	**Employer ID#** (EIN)	**Dun & Bradstreet ID#**
Equitrans, LP	251776875	

Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**

Additional Individual Last Name	**First Name**	**MI**	**Suffix**	**SSN**

Mailing Address Line 1	**Mailing Address Line 2**
625 Liberty Avenue	Suite 1700

Address Last Line – City	**State**	**ZIP+4**	**Country**
Pittsburgh	PA	15222	USA

Client Contact Last Name	**First Name**	**MI**	**Suffix**
Frazier	Stephanie		

Client Contact Title	**Phone**	**Ext**
Supervisor Permitting - Environmental	(412) 553-5798	

Email Address	**FAX**
SFrazier@eqt.com	(412) 395-2156

SITE INFORMATION

DEP Site ID#	**Site Name**
	H-318 Wetland W-BB7

EPA ID# N/A **Estimated Number of Employees to be Present at Site** N/A

Description of Site
Wetland W-BB7

County Name	**Municipality**	**City**	**Boro**	**Twp**	**State**
Allegheny	Forward Township	☐	☐	☒	
County Name	**Municipality**	**City**	**Boro**	**Twp**	**State**
		☐	☐	☐	

Site Location Line 1	**Site Location Line 2**
614 McVicker Lane	

Site Location Last Line – City	**State**	**ZIP+4**
Monongahela	PA	15063

Detailed Written Directions to Site
Directions to Site from PA DEP Southwest Regional Office (400 Waterfront Dr., Pittsburgh, PA 15222):Head south on PA-28S to I-579S (1.2 miles). Take I-579S through the Liberty Tunnel (2.5 miles). Turn right to exit on the PA-51S ramp towards Uniontown. Head south on PA-51S for 13.5 miles and cross the Monongahela River. Exit on Market St. (600 feet). Left onto S 2nd Ave (0.3 miles). Left onto Center Ave and continue as Center Ave. becomes Bunola River Rd. (4 miles). Left onto Church Hollow Rd. (0.9 miles). Left onto McVicker Lane. The site is northeast of the house at 614 McVicker Lane

Site Contact Last Name	**First Name**	**MI**	**Suffix**
Frazier	Stephanie		

Site Contact Title	**Site Contact Firm**
Supervisor Permitting - Environmental	Equitrans, LP

Mailing Address Line 1	Mailing Address Line 2
625 Liberty Avenue	Suite 1700
Mailing Address Last Line – City	**State** **ZIP+4**
Pittsburgh	**PA** **15222**

Phone	Ext	FAX	Email Address
(412) 553-5798		(412) 395-2156	SFrazier@eqt.com

NAICS Codes (Two- & Three-Digit Codes – List All That Apply): 23

6-Digit Code (Optional): 237120

Client to Site Relationship: LESOP

FACILITY INFORMATION

Modification of Existing Facility

		Yes	No
1.	**Will this project modify an existing facility, system, or activity?**	☐	☒
2.	**Will this project involve an addition to an existing facility, system, or activity?**	☐	☒

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

	Facility Type	DEP Fac ID#		Facility Type	DEP Fac ID#
☐	Air Emission Plant		☐	Industrial Minerals Mining Operation	
☐	Beneficial Use (water)		☐	Laboratory Location	
☐	Blasting Operation		☐	Land Recycling Cleanup Location	
☐	Captive Hazardous Waste Operation		☐	MineDrainageTrmt/LandRecyProjLocation	
☐	Coal Ash Beneficial Use Operation		☐	Municipal Waste Operation	
☐	Coal Mining Operation		☐	Oil & Gas Encroachment Location	
☐	Coal Pillar Location		☐	Oil & Gas Location	
☐	Commercial Hazardous Waste Operation		☐	Oil & Gas Water Poll Control Facility	
☐	Dam Location		☐	Public Water Supply System	
☐	Deep Mine Safety Operation -Anthracite		☐	Radiation Facility	
☐	Deep Mine Safety Operation -Bituminous		☐	Residual Waste Operation	
☐	Deep Mine Safety Operation -Ind Minerals		☐	Storage Tank Location	
☐	Encroachment Location (water, wetland)		☐	Water Pollution Control Facility	
☐	Erosion & Sediment Control Facility		☐	Water Resource	
☐	Explosive Storage Location		☐	Other:	

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	**Minutes**	**Seconds**	**Degrees**	**Minutes**	**Seconds**
Wetland W-B7	40	13	**51**	79	56	**11**

Horizontal Accuracy Measure: Feet <3ft *--or--* Meters

Horizontal Reference Datum Code
- ☐ North American Datum of 1927
- ☒ North American Datum of 1983
- ☐ World Geodetic System of 1984

Horizontal Collection Method Code: WAAS

Reference Point Code: CNTAR

Altitude: Feet 962 *--or--* Meters

Altitude Datum Name
- ☐ The National Geodetic Vertical Datum of 1929
- ☒ The North American Vertical Datum of 1988 (NAVD88)

Altitude (Vertical) Location Datum Collection Method Code: TOPO

Geometric Type Code: POINT

Data Collection Date: 7/11/2015

Source Map Scale Number: 1 Inch(es) = 50 Feet

--or-- Centimeter(s) = Meters

PROJECT INFORMATION

Project Name
Equitrans Expansion Project H-318 Wetland W-BB7 Crossing

Project Description
See attached Project Description

Project Consultant Last Name	First Name	MI	Suffix
Smith	Preston	R	

Project Consultant Title	Consulting Firm
Manager, Wetlands and Ecological Services Department	Tetra Tech, Inc.

Mailing Address Line 1	Mailing Address Line 2	
661 Andersen Drive	Foster Plaza 7	
Address Last Line – City	**State**	**ZIP+4**
Pittsburgh	PA	15220-2700

Phone	Ext	FAX	Email Address
(412) 921-8167		(412) 921-4040	Preston.Smith@tetratech.com

Time Schedules	Project Milestone (Optional)
January 2017	Proposed Construction Start Date
December 2017	**Proposed Construction Completion Date**

1.	**Have you informed the surrounding community and addressed any concerns prior to submitting the application to the Department?**	☒	Yes	☐	No
2.	**Is your project funded by state or federal grants?**	☐	Yes	☒	No

Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.
Aspect of Project Related to Grant
Grant Source: _____
Grant Contact Person: _____
Grant Expiration Date: _____

3.	**Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions)**	☒	Yes	☐	No

Note: If "No" to Question 3, the application is not subject to the Land Use Policy.
If "Yes" to Question 3, the application is subject to this policy and the Applicant should answer the additional questions in the **Land Use Information** section.

LAND USE INFORMATION

Note: Applicants are encouraged to submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

1.	**Is there an adopted county or multi-county comprehensive plan?**	☐	Yes	☒	No
2.	**Is there an adopted municipal or multi-municipal comprehensive plan?**	☐	Yes	☒	No
3.	**Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance?**	☒	Yes	☐	No

Note: If the Applicant answers "No" to either Questions 1, 2 or 3, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 4 and 5 below.
If the Applicant answers "Yes" to questions 1, 2 and 3, the Applicant should respond to questions 4 and 5 below.

4.	**Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval?** If zoning approval has been received, attach documentation.	☒	Yes	☐	No
5.	**Have you attached Municipal and County Land Use Letters for the project?**	☒	Yes	☐	No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 and the accompanying Cultural Resource Notice Form.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	**Is this a coal mining project?** If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	☐	Yes	☒	No
1.1	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?**	☐	Yes	☐	No
1.2	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?**	☐	Yes	☐	No
1.3	**Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?**	☐	Yes	☐	No
1.4	**For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No
1.5	**Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐	Yes	☐	No
1.6	**Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?**	☐	Yes	☐	No
2.0	**Is this a non-coal (industrial minerals) mining project?** If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	☐	Yes	☒	No
2.1	**Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?**	☐	Yes	☐	No
2.2	**Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?**	☐	Yes	☐	No
2.3	**Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?**	☐	Yes	☐	No
2.4	**For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No
2.5	**Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐	Yes	☐	No

3.0	**Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well?** If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	☐	Yes	☒	No
3.1	**Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?**	☐	Yes	☐	No
3.2	**Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system?** If "Yes", discuss in *Project Description*.	☐	Yes	☐	No
3.3	**Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?**	☐	Yes	☐	No
4.0	**Will the project involve a construction activity that results in earth disturbance?** If "Yes", specify the total disturbed acreage. **4.0.1 Total Disturbed Acreage** 0.55 acres	☒	Yes	☐	No
5.0	**Does the project involve any of the following?** If "Yes", respond to 5.1-5.3. If "No", skip to Question 6.0.	☒	Yes	☐	No
5.1	**Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?**	☐	Yes	☒	No
5.2	**Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?**	☒	Yes	☐	No
5.3	**Floodplain Projects by the commonwealth, a Political Subdivision of the commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?**	☐	Yes	☒	No
6.0	**Will the project involve discharge of stormwater or wastewater from an industrial activity to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?**	☐	Yes	☒	No
7.0	**Will the project involve the construction and operation of industrial waste treatment facilities?**	☐	Yes	☒	No
8.0	**Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations?** If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the *Project Description*, where applicable. **8.0.1 Estimated Proposed Flow (gal/day)**	☐	Yes	☒	No
9.0	**Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system?**	☐	Yes	☒	No
	9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	☐	Yes	☐	No
10.0	**Is this project for the beneficial use of biosolids for land application within Pennsylvania?** If "Yes" indicate how much (i.e. gallons or dry tons per year). **10.0.1 Gallons Per Year (residential septage)** _____ **10.0.2 Dry Tons Per Year (biosolids)**	☐	Yes	☒	No
11.0	**Does the project involve construction, modification or removal of a dam?** If "Yes", identify the dam. **11.0.1 Dam Name**	☐	Yes	☒	No

12.0	**Will the project interfere with the flow from, or otherwise impact, a dam?** If "Yes", identify the dam. **12.0.1 Dam Name**	☐	Yes	☒	No
13.0	**Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)?** If "Yes", identify each type of emission followed by the amount of that emission. **13.0.1 Enter all types & amounts of emissions; separate each set with semicolons.**	☐	Yes	☒	No
14.0	**Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year?** If "Yes", check all proposed sub-facilities. **14.0.1 Number of Persons Served** _____ **14.0.2 Number of Employee/Guests** _____ **14.0.3 Number of Connections** _____	☐	Yes	☒	No
	14.0.4 Sub-Fac: Distribution System	☐	Yes	☐	No
	14.0.5 Sub-Fac: Water Treatment Plant	☐	Yes	☐	No
	14.0.6 Sub-Fac: Source	☐	Yes	☐	No
	14.0.7 Sub-Fac: Pump Station	☐	Yes	☐	No
	14.0.8 Sub Fac: Transmission Main	☐	Yes	☐	No
	14.0.9 Sub-Fac: Storage Facility	☐	Yes	☐	No
15.0	**Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?**	☐	Yes	☒	No
16.0	**Is your project to be served by an existing public water supply?** If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project. **16.0.1 Supplier's Name** _____	☐	Yes	☒	No
	16.0.2 Letter of Approval from Supplier is Attached	☐	Yes	☐	No
17.0	**Will this project involve a new or increased drinking water withdrawal from a stream or other water body?** If "Yes", should reference both Water Supply and Watershed Management. **17.0.1 Stream Name**	☐	Yes	☒	No
18.0	**Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste?** If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed. **18.0.1 Type & Amount**	☐	Yes	☒	No
19.0	**Will your project involve the removal of coal, minerals, etc. as part of any earth disturbance activities?**	☐	Yes	☒	No
20.0	**Does your project involve installation of a field constructed underground storage tank?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **20.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No
21.0	**Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **21.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No

22.0	**Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **22.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No
23.0	**Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **23.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No
24.0	**Will the intended activity involve the use of a radiation source?**	☐	Yes	☒	No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

Type or Print Name Stephanie Frazier

Supervisor Permitting - Environmental

Signature **Title** **Date**

End of Line
Lat: 40° 15' 15.276" N
Lon: 79° 57' 45.004" W

Start of Line
Lat: 40° 14' 27.145" N
Lon: 79° 55' 16.615" W

Wetland
W-BB7

Equitrans Expansion Project

N

1:24,000

0 2,000 4,000 Feet

EQUITRANS℠

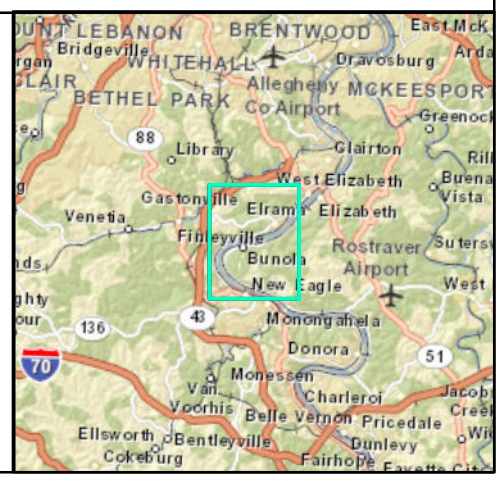
Attachment #: Tab 8
USGS Project Location Map
Washington & Allegheny County, PA

March 2016

Data Sources: Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Parcel Boundary



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Tab 4

Cultural Resource Notification and Receipt

0120-PM-PY0003 Rev. 5/2006
NOTICE

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CULTURAL RESOURCE NOTICE

DEP USE ONLY
Date Received

Read the instructions before completing this form.

SECTION A. APPLICANT IDENTIFIER

Applicant Name: Equitrans, LP

Street Address: 625 Liberty Avenue, Suite 1700

City: Pittsburgh State: PA Zip: 15220

Telephone Number: (412) 553-5798

Project Title: Equitrans Expansion Project Wetland W-BB7 Crossing

SECTION B. LOCATION OF PROJECT

Municipality: Forward Township County Name: Allegheny DEP County Code: 02

SECTION C. PERMITS OR APPROVALS

Name of Specific DEP Permit or Approval Requested: Chapter 105 Joint Permit

Anticipated federal permits:

- ☐ Surface Mining
- ☐ 404 Water Quality Permit
- ☒ Army Corps of Engineers
- ☒ Federal Energy Regulatory Commission
- ☒ 401 Water Quality Certification
- ☐ Other: _____

SECTION D. GOVERNMENT FUNDING SOURCES

- ☐ State: (Name) _____
- ☐ Local: (Name) _____
- ☐ Federal: (Name) _____
- ☐ Other: (Name) _____

SECTION E. RESPONSIBLE DEP REGIONAL, CENTRAL, DISTRICT MINING or OIL & GAS MGMT OFFICE

DEP Regional Office Responsible for Review of Permit Application

- ☐ Central Office (Harrisburg)
- ☐ Southeast Regional Office (Norristown)
- ☐ Northeast Regional Office (Wilkes-Barre)
- ☐ Southcentral Regional Office (Harrisburg)
- ☐ Northcentral Regional Office (Williamsport)
- ☐ Southwest Regional Office (Pittsburgh)
- ☐ Northwest Regional Office (Meadville)
- ☐ District Mining Office: _____
- ☒ Oil & Gas Office: Southwest Regional Office

SECTION F. RESPONSIBLE COUNTY CONSERVATION DISTRICT, if applicable.

County Conservation District: Allegheny County Conservation District

Telephone Number, if known: (412) 241-7645

SECTION G. CONSULTANT

Consultant, if applicable: Tetra Tech, Inc.

Street Address: 661 Andersen Dr., Foster Plaza No. 7

City: Pittsburgh State: PA Zip: 15220

Telephone Number: (412) 921-7090

SECTION H. PROJECT BOUNDARIES AND DESCRIPTION

REQUIRED

Indicate the total acres in the property under review. Of this acreage, indicate the total acres of earth disturbance for the proposed activity.

Attach a 7.5' U.S.G.S. Map indicating the defined boundary of the proposed activity.

Attach photographs of any building over 50 years old. Indicate what is to be done to all buildings in the project area.

Attach a narrative description of the proposed activity.

Attach the return receipt of delivery of this notice to the Pennsylvania Historical and Museum Commission.

REQUESTED

Attach photographs of any building over 40 years old.

Attach site map, if available.

SECTION I. SIGNATURE BLOCK

_____	_____
Applicant's Signature	Date of Submission of Notice to PHMC

SECTION H - PROJECT BOUNDARIES AND DESCRIPTION

Equitrans, L.P. (Equitrans) proposes the Equitrans Expansion Project (EEP) located in Allegheny, Washington, and Greene Counties, Pennsylvania, and Wetzel County, West Virginia. The EEP is designed to transport natural gas from the northern portion of the Equitrans system south to the interconnection with Mountain Valley Pipeline, LLC's proposed Mountain Valley Pipeline, as well as to existing interconnects with Texas Eastern Transmission, LP and Dominion Transmission, Inc. The EEP will also increase system reliability, efficiency, and operational flexibility for the benefit of Equitrans customers.

The portion of the EEP within Allegheny County proposes to install one 20" natural gas pipeline (H-318 Pipeline) approximately 3 miles long within a 100' construction right-of-way (ROW) and 50' permanent ROW. The proposed H-318 Pipeline will generally run east-west and will be located in Forward Township, Allegheny County, and Union Township, Washington County, Pennsylvania. A Pennsylvania Chapter 105 General Permit Application and a 401 Water Quality Certification Application were submitted to the Allegheny County Conservation District (ACCD) for the proposed H-318 Pipeline in October, 2015 and are currently under review. The ACCD subsequently requested a Chapter 105 Joint Permit Application for the portion of the proposed H-318 Pipeline that crosses Wetland W-BB7 (W-BB7), located at 614 McVicker Lane in Forward Township, Allegheny County, Pennsylvania.

The proposed H-318 Pipeline crosses 614 McVicker Lane (Tax Parcel 1740-P-00172-0000-00), which is approximately 59 acres in size. The H-318 Pipeline will have temporary impacts on approximately 15.8 acres on the property at 614 McVicker Lane. W-BB7 Crossing Project (Project) is the portion of the proposed H-318 Pipeline that crosses W-BB7 at 614 McVicker Lane. The Project will have temporary impacts on approximately 0.55 acres of W-BB7 during pipeline construction and installation activities. No permanent Project impacts are anticipated to W-BB7.

Past and present land use of the Project area is agriculture. Based on available aerial imagery the Project area has been agriculture since before 1993; USGS topographic mapping from 1954 indicates that the Project area has been agriculture since prior to 1954. Based on available aerial imagery of the Project area, there are no structures within the Project limit-of-disturbance (LOD) on imagery dating back to 1993. USGS topographic mapping from the 1950's does not show any structures within the Project LOD. USGS topographic mapping also indicates prior strip mining in the vicinity of the Project.

A Phase I survey to identify archeological cultural resources and an architectural reconnaissance survey to identify historic properties was conducted for the EEP in August and September, 2015. The results of the Phase I archeological survey were submitted to the Pennsylvania State Historic Preservation Office (SHPO) on February 17, 2016. The results of the architectural survey were submitted to the Pennsylvania SHPO on January 28, 2016. These surveys did not identify any field sites eligible for state listing through the Pennsylvania Historical and Museum Commission, or any resources with sufficient significance or integrity

to be eligible for the National Register of Historic Places in the Project LOD. Copies of the coordination letters accompanying these reports are attached as proof of SHPO coordination. The SHPO is currently reviewing the results of the archeological and architectural report submissions.

Future land use of the Project area will remain agricultural upon completion of the pipeline installation. Relevant topographic features including streams, roads, pipelines, structures, utility lines, fences, and other significant items within the Project LOD are indicated on the Plan Sheets (Tab 7), where applicable.

End of Line
Lat: 40° 15' 15.276" N
Lon: 79° 57' 45.004" W

Start of Line
Lat: 40° 14' 27.145" N
Lon: 79° 55' 16.615" W

Wetland
W-BB7

Equitrans Expansion Project

N

1:24,000

0 2,000 4,000 Feet

EQUITRANS℠

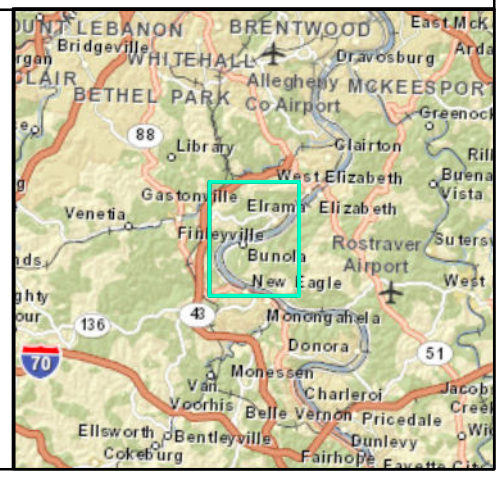
Attachment #: Tab 8
USGS Project Location Map
Washington & Allegheny County, PA

March 2016

Data Sources: Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Parcel Boundary



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UP W-BB7
TP W-BB7
1
W-BB7
Raccoon Run Rd
699
689
Church Hollow Rd
2086
Church Hollow Rd

EEP Wetland W-BB7 Crossing

N

1:3,000

0 200 400 Feet

EQUITRANS SM

Attachment #: Tab 10
Photo Location Map
Allegheny County, PA

March 2016

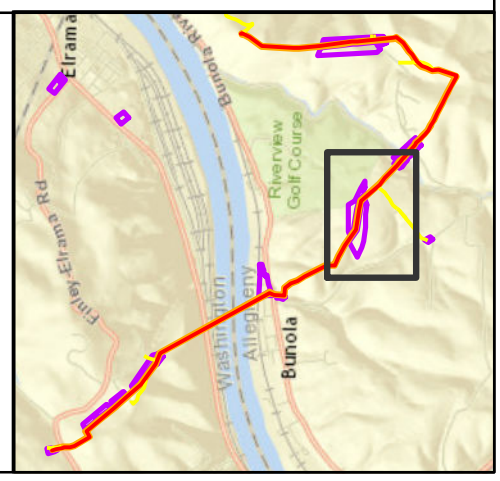
Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Parcel Boundary
- Test Pit
- Stream

Wetland

- PEM
- Photo Location



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TETRA TECH

February 17, 2016

Andrea MacDonald, Deputy SHPO
Attention: Kira M. Heinrich, Archaeological Project Reviewer (Western Region)
Pennsylvania State Historic Preservation Office
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

Subject: Equitrans Expansion Project (FERC Docket No. CP16-13-000)
Phase I Archaeological Survey Report, Greene, Allegheny, and Washington Counties, Pennsylvania
ER No. 2015-1446-042
Request for Comment Pursuant to Section 106 of the National Historic Preservation Act

Dear Ms. MacDonald:

On behalf of Equitrans, LP of Pittsburgh, Pennsylvania, Tetra Tech, Inc., hereby submits one copy of a report, *Equitrans Expansion Project (FERC Docket No. CP16-13-000)—Phase I Archaeological Survey: Jefferson, Morgan, & Franklin Townships, Greene County; Forward Township, Allegheny County; and Union Township, Washington County, Pennsylvania*. The report describes the results of a Phase I archaeological survey for the Pennsylvania elements of the proposed project. An updated Project Review Form is also included with this submittal. Tetra Tech also previously submitted an architectural survey report on this project for your agency's review, which was sent on January 28, 2016.

Equitrans has applied to the Federal Energy Regulatory Commission (FERC) for a Certificate of Public Convenience and Necessity pursuant to Section 7(c) of the Natural Gas Act authorizing it to construct and operate the proposed project (FERC Docket No. CP16-13-000). Please review the report in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended. We would also specifically like to request comment on the Unanticipated Discoveries Plan for this project, found in Appendix I of the report.

To ensure accurate filing of your review, note that your agency may also have correspondence concerning this project under ER Nos. 2015-2081-042 and 2015-1694-042. The ER number employed here, 2015-1446-042, was provided on July 27, 2015, in response to our initial technical data submittal of July 8, 2015, and is the one we will be using to reference this project moving forward.

Should you require additional information to complete this review, contact me at (973)-630-8358 or by e-mail at chris.borstel@tetratech.com.

Thank you for your assistance in this matter.

Sincerely yours,

Christopher L. Borstel, Ph.D., RPA
Cultural Resources Specialist

Cc: S. Haugh, Tetra Tech
T. Pellerin, Tetra Tech
S. Frazier, Equitrans

Encl.

Tetra Tech, Inc.
1000 The American Road, Morris Plains, NJ 07950
Tel 973.630.8000 Fax 973.630.8025 www.tetratech.com

Pennsylvania Historical & Museum Commission

PROJECT REVIEW FORM

Request to Initiate SHPO Consultation on State and Federal Undertakings

SHPO USE ONLY
DATE RECEIVED:
ER NUMBER:

REV: 5/2012

SECTION A: GENERAL PROJECT INFORMATION

Is this a new submittal? ○ YES ○ NO **OR** ◉ **This is additional information for ER Number:** 2015-1446-042

Project Name	Equitrans Expansion Project	County	Multiple
Project Address	Jefferson, Morgan, and Franklin Twps, Greene Co.; Forward Twp., Allegheny		
City/State/ Zip	See "Project Address"	Municipality	See "Project Address"

SECTION B: PRIMARY CONTACT INFORMATION

Name	Christopher L. Borstel, Ph.D., RPA	Phone	(973) 630-8358
Company	Tetra Tech, Inc.	Fax	(973) 630-8025
Street/P.O. Box	1000 The American Road	Email	chris.borstel@tetratech.com
City/State/Zip	Morris Plains NJ 07950		

SECTION C: PROJECT DESCRIPTION

This project is located on: (check all that apply) ☐ Federal property ☐ State property ☐ Municipal property ☑ Private property

List all Federal and State agencies and programs (funding, permits, licenses) involved in this project

Agency Type	Agency/Program/Permit Name	Project/Permit/Tracking Number (if applicable)
Federal	Federal Regulatory Energy Commission	Docket No. CP16-13-000

Proposed Work – Attach project description, scope of work, site plans, and/or drawings

Project includes (check all that apply): ☑ Construction ☑ Demolition ☐ Rehabilitation ☐ Disposition

Total acres of project area: 315 Total acres of earth disturbance: 186

Are there any buildings or structures within the project area? ◉ Yes ○ No Approximate age: ca. 1839-2015

This project involves properties listed in or eligible for listing in the National Register of Historic Places, or designated as historic by a local government	Yes	No	Unsure	Name of historic property or historic districts	Monongahela River Navigation System (NRE); P&LE RR Corridor (NRE)
	◉	○	○		

Please print and mail completed form and all attachments to:

PHMC
State Historic Preservation Office
400 North St.
Commonwealth Keystone Building, 2nd Floor
Harrisburg, PA 17120-0093

Attachments – Please include the following information with this form

- ☑ **Map** – 7.5' USGS quad showing project boundary and Area of Potential Effect
- ☑ **Description/Scope** – Describe the project, including any ground disturbance and previous land use
- ☑ **Site Plans/Drawings** – Indicate the location and age, if known, of all buildings in the project area
- ☑ **Photographs** – Attach prints or digital photographs showing the project site, including images of all buildings and structures keyed to a site plan

SHPO DETERMINATION (SHPO USE ONLY) SHPO REVIEWER:

- ☐ There are **NO HISTORIC PROPERTIES** in the Area of Potential Effect
- ☐ The project will have **NO EFFECT** on historic properties
- ☐ The project will have **NO ADVERSE EFFECTS** on historic properties:
- ☐ The project will have **NO ADVERSE EFFECTS WITH CONDITIONS** (see attached)
- ☐ **SHPO REQUESTS ADDITIONAL INFORMATION** (see attached)

TETRA TECH

January 28, 2016

Andrea MacDonald, Deputy SHPO
Attention: Barbara Frederick, Historic Building Project Reviewer (Western Region)
Pennsylvania State Historic Preservation Office
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

Subject: Equitrans Expansion Project (FERC Docket No. CP16-13-000)
Report on Aboveground Resources Survey and Assessment of Effects, Greene, Allegheny, and Washington Counties, Pennsylvania
ER No. 2015-1446-042
Request for Comment Pursuant to Section 106 of the National Historic Preservation Act

Dear Ms. MacDonald:

On behalf of Equitrans, LP of Pittsburgh, Pennsylvania, Tetra Tech, Inc., hereby submits one copy of a report, *Equitrans Expansion Project (FERC Docket No. CP16-13-000)—Historic Architectural Survey: Aboveground Resources Survey and Assessment of Effects, Jefferson, Morgan, and Franklin Townships, Greene County; Forward Township, Allegheny County; and Union Township, Washington County, Pennsylvania*. The report describes the results of historic architectural survey for the Pennsylvania elements of the proposed project. An updated Project Review Form is also included with this submittal.

Equitrans has applied to the Federal Energy Regulatory Commission (FERC) for a Certificate of Public Convenience and Necessity pursuant to Section 7(c) of the Natural Gas Act authorizing it to construct and operate the proposed project (FERC Docket No. CP16-13-000). Please review the report in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended.

To ensure accurate filing of your review, note that your agency may also have correspondence concerning this project under ER Nos. 2015-2081-042 and 2015-1694-042. The ER number employed here, 2015-1446-042, was provided on July 27, 2015, in response to our initial technical data submittal of July 8, 2015, and is the one we will be using to reference this project moving forward.

Should you require additional information to complete this review, contact me at (973)-630-8358 or by e-mail at chris.borstel@tetratech.com.

Thank you for your assistance in this matter.

Sincerely yours,

Christopher L. Borstel, Ph.D., RPA
Cultural Resources Specialist

Cc: J. Sexton, Tetra Tech
T. Pellerin, Tetra Tech
S. Frazier, Equitrans

Encl.

Tetra Tech, Inc.
1000 The American Road, Morris Plains, NJ 07950
Tel 973.630.8000 Fax 973.630.8025 www.tetratech.com

Tab 5

PASPGP-4 New Cumulative Impacts Project Screening Form

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERWAYS ENGINEERING AND WETLANDS

DEP USE ONLY
☐ Category I
☐ Category II
☐ Category III

Applicant / Project Name: Equitrans, LP/ Equitrans Expansion Project	County(s): Allegheny, Greene, Washington

PASPGP-4 CUMULATIVE IMPACTS PROJECT SCREENING FORM

The following questionnaire must be completed and submitted to determine the appropriate Pennsylvania State Programmatic General Permit-4 (PASPGP-4) review procedure. Incomplete submissions will be returned. An "Overall Project," as defined for this form, includes all regulated activities that are reasonably related and necessary to accomplish the "Overall Project" purpose. An "Overall Project" must have a clear purpose, be able to function, and have independent utility. All regulated activities, including the direct and indirect impacts occurring as a result of the regulated activities, which are associated with the "Overall Project", should be considered cumulatively when completing this form. For linear projects, all impacts to waters and wetlands associated with the "Overall Project" should be added together and cumulatively viewed as impacts associated with the "Overall Project", which must have a defined beginning and end point. For linear projects, the application shall include a plan that depicts the location of the beginning and end points of the overall project, and all proposed crossings. See the PASPGP-4 permit document at: www.nab.usace.army.mil/Wetlands%20Permits and Part II, for the definition of Independent Utility and Single and Complete Project (discussion of "Overall Project").

The PASPGP-4authorizes the discharge of dredged or fill materials and/or the placement of structures, for a single and complete project, including all attendant features, both temporary and/or permanent, which individually or cumulatively results in impacts to 1.0 acre or less of waters of the United States including jurisdictional wetlands. These discharges and placement of structures must comply with all the terms, conditions, and processing procedures identified in this PASPGP-4. Refer to the definitions and sketches in PASPGP-4, Part II for calculating the 1.0-acre eligibility threshold for linear projects.

Determination of PASPGP-4 eligibility – For Category I and II Activities, PADEP/County Conservation Districts will review the applications, if applicable, and verify if work is authorized by PASPGP-4. For Category III Activities, the Corps reviews applications and makes a case by case determination that work is eligible for authorization under PASPGP-4.

Applications for activities that individually or cumulatively impact more than 1.0 acre of waters of the United States, including jurisdictional wetlands, including all attendant features, both temporary and permanent, for a single and complete project; or that impact greater than 250 linear feet of streams, rivers, or other watercourses, except fish habitat enhancement structures authorized under PADEP GP-1 and bank rehabilitation and protection, authorized under PADEP GP-3 that affect 500 linear feet or less, are sent to the Corps as a Category III Activity, under PASPGP-4, Part IV, C, 2. The 1.0 acre area measurement includes the sum total of all waters of the United States including both jurisdictional wetlands and streams, rivers, other watercourses.

- For linear projects, the 250 linear foot Category III Activity threshold for stream impacts is applied to the total cumulative impacts of all crossings associated with the overall linear project, regardless of the type of PADEP authorization or combination of authorizations used to approve the overall project.
- Overall linear projects that have cumulative permanent and temporary impacts to waters of the United States, including jurisdictional wetlands, which exceed 1.0 acre, may still be eligible for PASPGP-4 authorization through a Category III review, provided no single and complete project exceeds the 1 acre threshold (see PASPGP-4, Part II for definition of single and complete project and acreage calculations). This verification of eligibility will be made by the Corps of Engineers.
- For phased projects, including phased linear projects, an overall project plan depicting all previously authorized or proposed impacts to waters and/or wetland is required as part of the application. A plan depicting phase I of the overall project would be submitted with any applications associated with phase I. At a later date, when applications associated with phase II are submitted, an overall plan that depicts the impacts for phase I and phase II is required. For example, if a utility line was previously authorized to run from point A to point B, and the permittee now wants to expand the utility line to point C, the plan will depict from point A to point C. In such a case, the overall project has been expanded to extend from point A to point C; the portion from point A to point B is needed for the section from point B to point C to function and meet the overall project purpose. If plan is not submitted as part of application, the application for the purposes of PASPG-4 will be considered incomplete and the application may be sent to the Corps as a Category III Activity.

SECTION A: PROPOSED IMPACTS

Provide the size of impacts to waters and/or wetlands associated with your application, including temporary and/or permanent impacts, and direct and indirect impacts.

Included in this calculation are the areas directly and indirectly affected by the regulated activities, including the area of waters and/or wetlands filled, drained and/or flooded as a result of the regulated activities. See PASPGP-4, Part II, Definitions, for calculation of linear footage of stream impact, and Part IV, C, 2 for thresholds which require a Corps review of application (Category III Activity).

PADEP GP–11 allows for the registration of multiple overall projects at one time through submission of a project/work site table that identifies each of the separate overall projects. For work associated with PADEP GP-11 registrations, impacts associated with each project/work site should be list separately. This can be done through a separate PASPGP-4 Project Screening Form for each project/work site, or submission of a separate document/table that identifies each separate project/work site, the proposed work and impact information, as required by this section.

		square feet	linear feet
Permanent Impacts	**to waters:**	0	0
	to wetlands:	2,935	
Temporary Impacts	**to waters:**	14,982	644
	to wetlands:	10,219	

SECTION B: OTHER CHAPTER 105/SECTION 10/404 AUTHORIZATIONS

YES NO

☐ ☒ 1. If known, has any work associated with the Overall Project been previously authorized by the Corps or DEP? If YES, please complete the table below. If additional space is needed, please attach the applicable information. Include the type of authorization or permit, permit or authorization number(s), date(s) of issuance, and permitted impacts (including square feet and/or linear footage), if applicable, with your application/registration form(s).Types of authorizations or permits may be abbreviated and include: Corps Nationwide Permit, Corps Individual Permit, Corps PASPGP, DEP General Permit, DEP Individual Permit (Dam and/or Encroachment) or DEP Environmental Assessment. See PASPGP-4, Part IV, C, 3 for applications which require a Corps review (Category III Activity).

EXAMPLES:

a. If application is associated with the expansion of a residential development, i.e., construction of phase II, the authorizations and impacts, if applicable, associated with construction of phase I are to be identified and listed.

b. If application is associated with a linear project, i.e., sewer line, waterline, utility line, etc., and the proposed work is an extension or additional phase being added to a previous segment, the authorizations, and impacts, if applicable, associated with construction of the previous segment(s) are to be identified and listed. For example, if a utility line is constructed from point A to point B, and a year later an extension of the line to point C is proposed, the authorizations and impacts associated with construction of point A to point B should be listed/identified. In this case, the overall project is from point A to point C, as the portion from point A to point B is needed for the section from point B to point C to function and meet the overall project purpose.

Authorization Type	Authorization Number	Date (mm/dd/yyyy)	Permitted Impacts	
			wetlands	waters

YES NO

☐ ☒ 2. Are additional Corps and/or DEP authorizations required for your proposed work to function and have independent utility? If YES, please complete the table below. If additional space is needed, please attach the applicable information.

EXAMPLES:

a. Development of a residential subdivision may require the filling of waters and/or wetlands for the construction of access roads, utility line crossings, and/or lot development. In such a case, if application is only for the utility lines, the work and impacts associated with the road crossings and lot development need to be identified. For the overall development to function, the road crossings and lot development are needed, not just utilities.

b. If widening of a road for construction of a turn lane is needed to facilitate an industrial development, applications associated for the industrial development to construct utility lines and lot development need to include the work and impacts associated with the construction of the turn lane. The construction of the turn lane is needed for the industrial development to function; the two projects are not separate independent projects.

c. If the application is associated with a linear project, such as an underground electric line or waterline, and additional permits are needed for the utility lines to function, i.e., convey electricity or water from source to user, the additional work and impacts need to be identified. For the overall utility line to function the entire line needs to be constructed; a segment that will not function does not have independent utility.

Authorization Type	Date (if known)	Anticipated Impacts	
		wetlands	waters

SECTION C: ACTIVITIES RELATED TO RESIDENTIAL, COMMERCIAL AND INSTITUTIONAL DEVELOPMENTS

The term "Subdivision", for the purposes of this form, is defined as the division or redivision of a lot, tract or parcel of land into two or more lots, tracts, parcels or other divisions of land including changes to existing lot lines.

YES NO

☐ ☒ 1. Does the Overall Project involve the construction or expansion of a residential, commercial or institutional subdivision or development? If YES, proceed to question 2. If NO, leave questions 2 and 3 blank.

☐ ☐ 2. Does greater than 0.25 acres of wetlands exist within the property boundary (not including those being directly impacted as part of this application)? If YES, provide wetland acreage: _____ acres. If NO, leave question 3 blank.

☐ ☐ 3. Are you proposing to protect the wetland area(s) through a deed restriction or conservation easement that follows the Corps' Model Conservation Instruments? If YES, attach a copy of the proposed deed restriction or conservation easement to this form and submit with your application/registration form. Model Conservation Instruments are available at www.nab.usace.army.mil/Wetlands%20Permits/. Failure to submit a proposed deed restriction or conservation easement with permit application/registration form requires a Category III review under PASPGP-4, Part IV, C, 24.

SECTION D: CERTIFICATION

I certify that the information provided on this form is true and correct to the best of my knowledge and information. If any of the information and/or plans is found to be in error, falsified, and/or incomplete, your Chapter 105/PASPGP-4 authorization/verification may be subject to modification, suspension, or revocation in accordance with applicable regulations.

Signature of Applicant

3/17/2016
Date

Stephanie Frazier – Supervisor Permitting - Environmental
Name Typed or Printed

Tab 6

PNDI Project Environmental Review Search Receipt

1. PROJECT INFORMATION

Project Name: **EEP Wetland W-BB7 Crossing**
Date of review: **3/11/2016 11:10:17 AM**
Project Category: **Energy Storage, Production, and Transfer,Energy Transfer,Pipeline (e.g., gas, oil) -- NEW (construction of new line in a new location)**
Project Area: **32.4** acres
County: **Allegheny** Township/Municipality: **Forward**
Quadrangle Name: **MONONGAHELA** ~ ZIP Code: **15063**
Decimal Degrees: **40.229398 N, -79.938364 W**
Degrees Minutes Seconds: **40° 13' 45.8" N, -79° 56' 18.1" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE: No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.* is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at http://www.naturalheritage.state.pa.us.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a **preliminary** screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552, Harrisburg, PA. 17105-8552
Fax:(717) 772-0271

U.S. Fish and Wildlife Service
Pennsylvania Field Office
110 Radnor Rd; Suite 101, State College, PA 16801
NO Faxes Please.

PA Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane, Bellefonte, PA. 16823-7437
NO Faxes Please

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797
Fax:(717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: Preston R. Smith
Company/Business Name: Tetra Tech Inc
Address: 661 Anderson Dr., Foster Plaza 7
City, State, Zip: Pittsburgh, PA 15220
Phone:(412) 921-8167 Fax:(412) 921-4040
Email: preston.smith@tetratech.com

8. CERTIFICATION

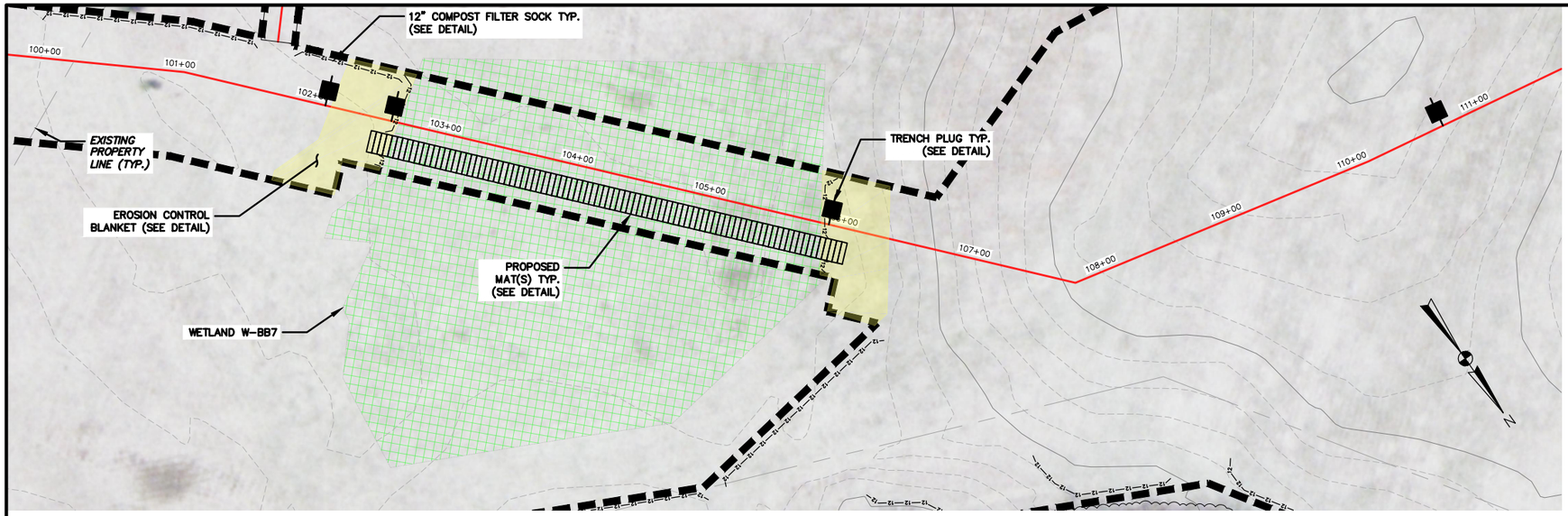
I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

applicant/project proponent signature

6-28-16
date

Tab 7

Project Plan Sheets



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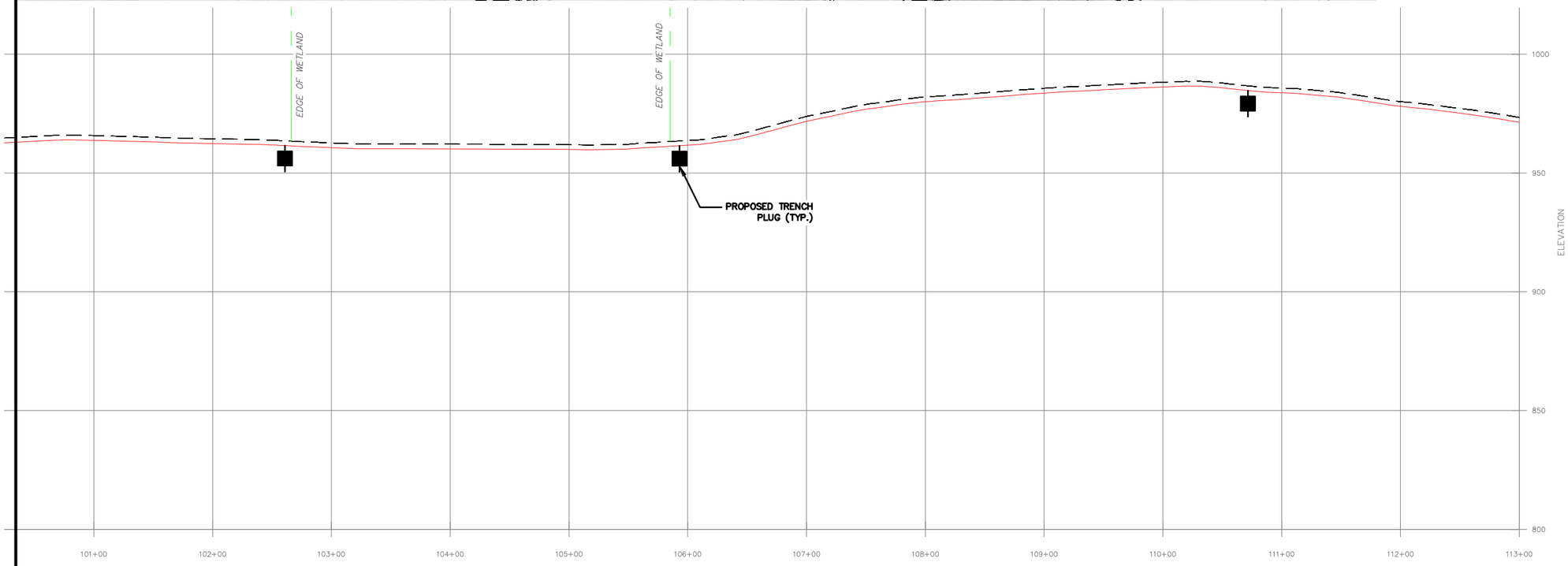

H-318 PROFILE

PROFILE

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SCALE IN FEET

HORIZONTAL SCALE IN FEET

0 50 100

SCALE IN FEET

VERTICAL SCALE IN FEET

LEGEND

- EXISTING CONTOUR (INDEX)
- EXISTING CONTOUR (INTERMEDIATE)
- PROPOSED CONTOUR (INDEX)
- PROPOSED CONTOUR (INTERMEDIATE)
- PROPOSED ACCESS ROAD CENTERLINE
- EXISTING PROPERTY LINE
- MUNICIPAL BOUNDARY
- EXISTING GAS LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING STREAM
- ASSUMED LIMITS OF FLOOD WAY
- FEMA 100-YEAR FLOODAY
- EXISTING WETLAND
- SOIL TYPE BOUNDARY AND SOIL TYPE LABLE
- EROSION CONTROL BLANKET
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED COMPOST FILTER SOCK (REFER TO SPECIFIC SIZE ON PLAN SHEET)
- ORANGE CONSTRUCTION SAFETY FENCE
- PROPOSED WATERBAR
- PROPOSED TRENCH PLUG
- PROPOSED CULVERT WITH OUTLET PROTECTION
- PROPOSED ROCK CONSTRUCTION ENTRANCE

REVISIONS:

NO.:	DATE:	DWN.:	CHKD.:	APPD.:	DESCRIPTION:

EQUITRANS EXPANSION PROJECT

WETLAND W-BB7 CROSSING

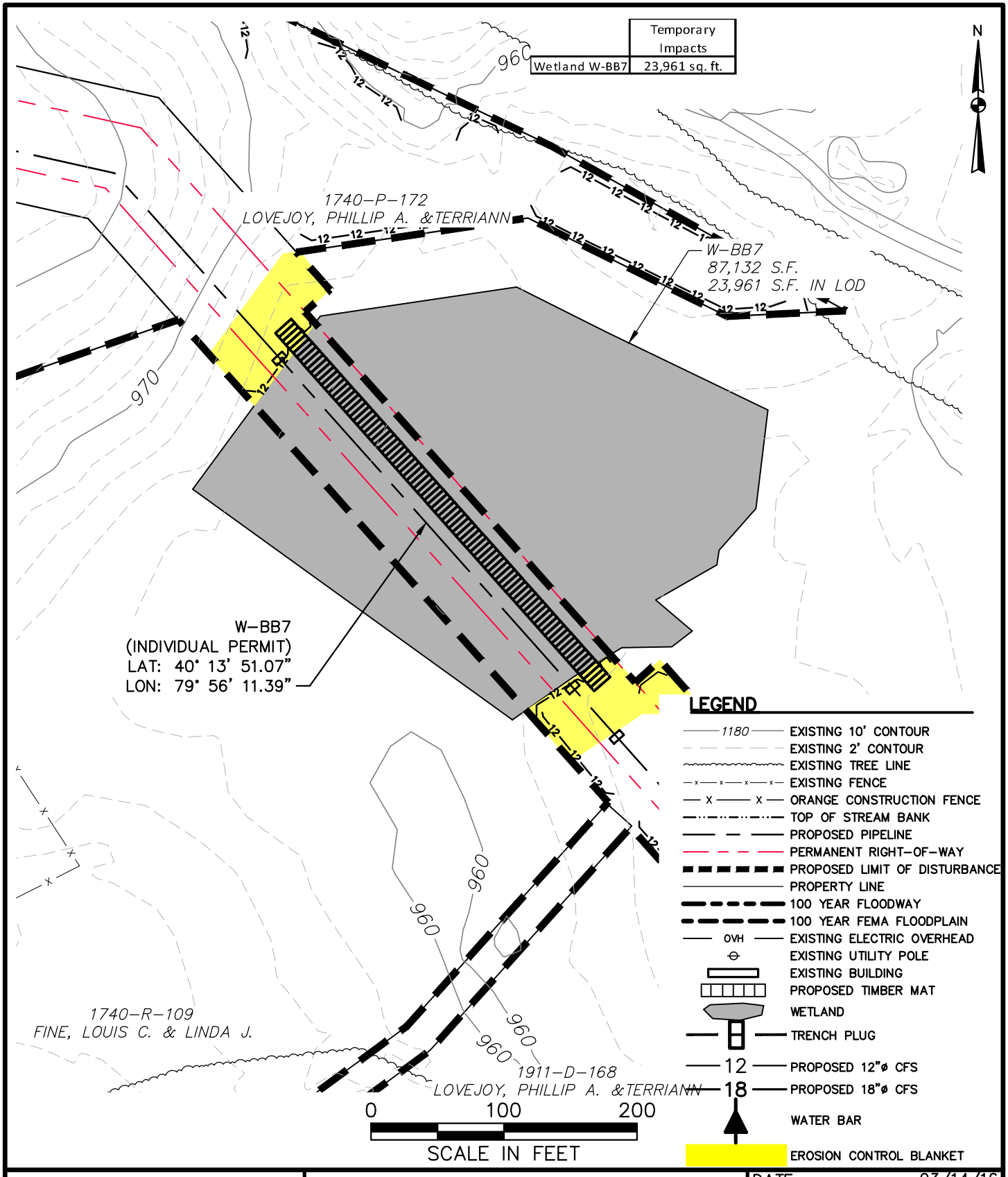
EQUITRANS, L.P.
625 LIBERTY AVE, SUITE 1700,
PITTSBURGH, PENNSYLVANIA 15222

I DO HEREBY CERTIFY TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THE EROSION AND SEDIMENT CONTROL AND PCSM/SITE RESTORATION PLAN AND POST CONSTRUCTION BMPS ARE TRUE AND CORRECT, REPRESENT ACTUAL FIELD CONDITIONS AND ARE IN ACCORDANCE WITH THE 25 PA. CODE CHAPTERS 78 AND 102 OF THE DEPARTMENT'S RULES AND REGULATIONS. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT.

DRAWN BY:	JH
CHECKED BY:	HS
APPROVED BY:	HT
DATE:	3/16/16
SCALE:	AS NOTED

REVISION

SHT. NO. 1 OF 1



R:_212 - OGA\O&G\EQT\00176 - EEP\GPs\H318\CCD Comment Responses\H318 - 00176GP029.dwg PIT JOE.HERBSTRITT 3/17/2016 2:27:58 PM

TETRA TECH
WWW.TETRATECH.COM
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
JOINT PERMIT APPLICATION FOR W-BB7
PLAN

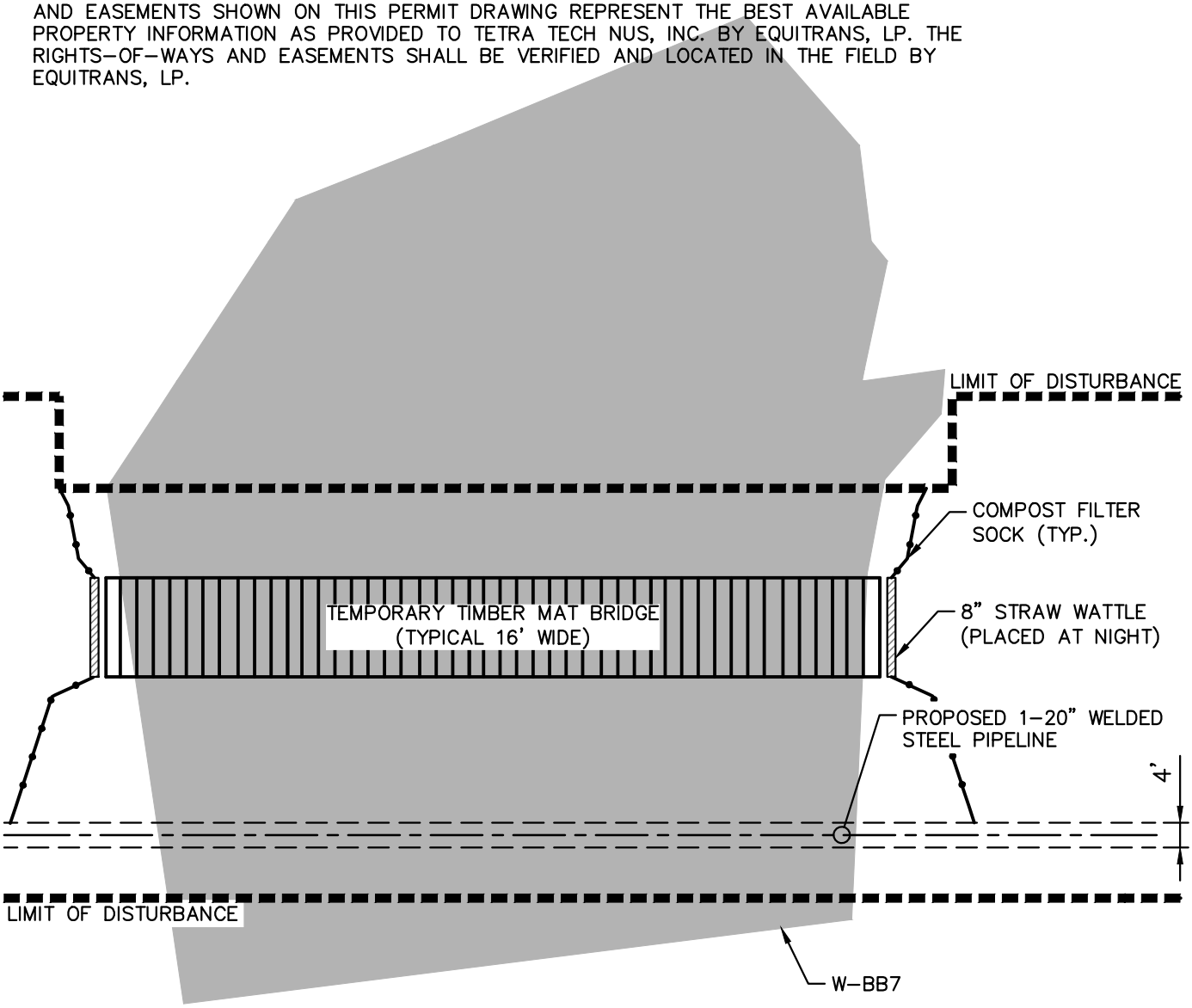
SCALE: 1" = 100'

DATE:	03/14/16
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

FIGURE 1

NOTES:

1. TOPO AND SITE FEATURE CREATED USING http:\\www.pasda.psu.edu.
2. TOPSOIL STOCKPILES SHALL BE LOCATED A MINIMUM OF 50' AWAY FROM THE EDGE OF THE WETLAND.
3. THE RIGHTS-OF-WAY AND EASEMENTS SHOWN ON THIS PLAN ARE THE RESPONSIBILITY OF EQUITRANS, LP TO SECURE WITH THE INDIVIDUAL PROPERTY OWNER. THE RIGHTS-OF-WAYS AND EASEMENTS SHOWN ON THIS PERMIT DRAWING REPRESENT THE BEST AVAILABLE PROPERTY INFORMATION AS PROVIDED TO TETRA TECH NUS, INC. BY EQUITRANS, LP. THE RIGHTS-OF-WAYS AND EASEMENTS SHALL BE VERIFIED AND LOCATED IN THE FIELD BY EQUITRANS, LP.



..\..\Images\PA One Call.jpg

PLAN

NOT TO SCALE

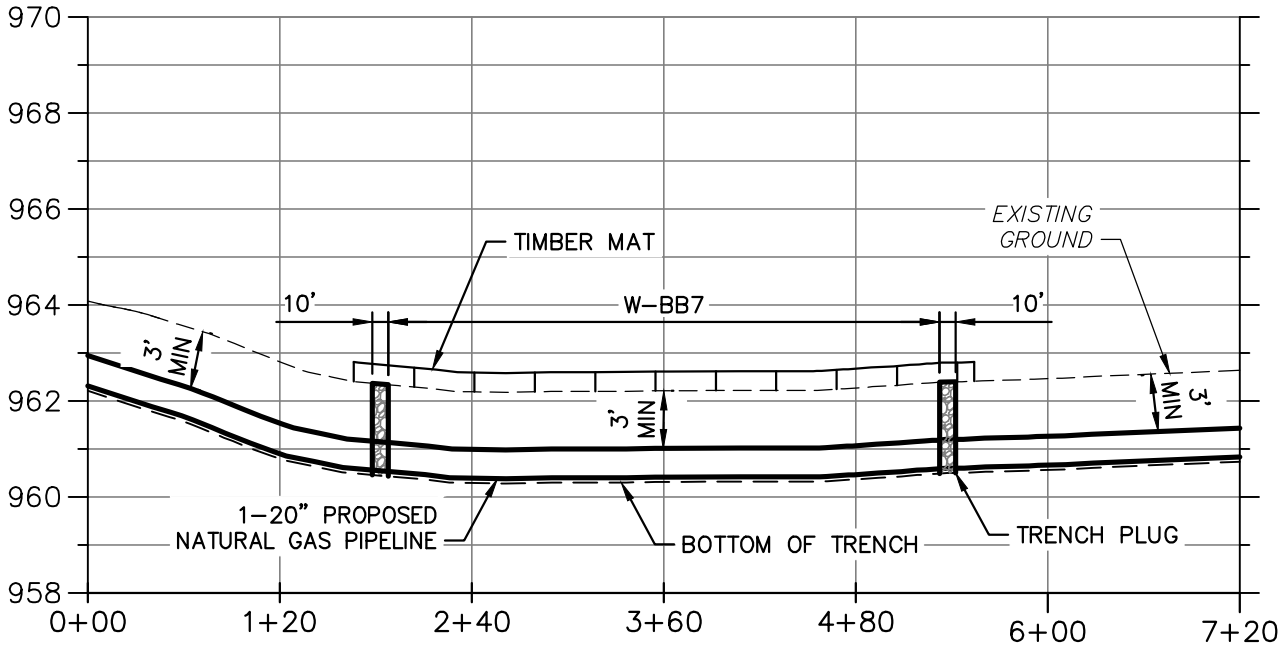
TETRA TECH
WWW.TETRATECH.COM
661 ANDERSEN DRIVE - FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE - ALLEGHNEY COUNTY
JOINT PERMIT APPLICATION FOR W-BB7
PLAN

SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 4

FIGURE 2



PROFILE FOR W-BB7 OPEN-CUT TRENCH PROFILE

SCALE: HORIZ: 1" = 120'
VERT: 1" = 4'

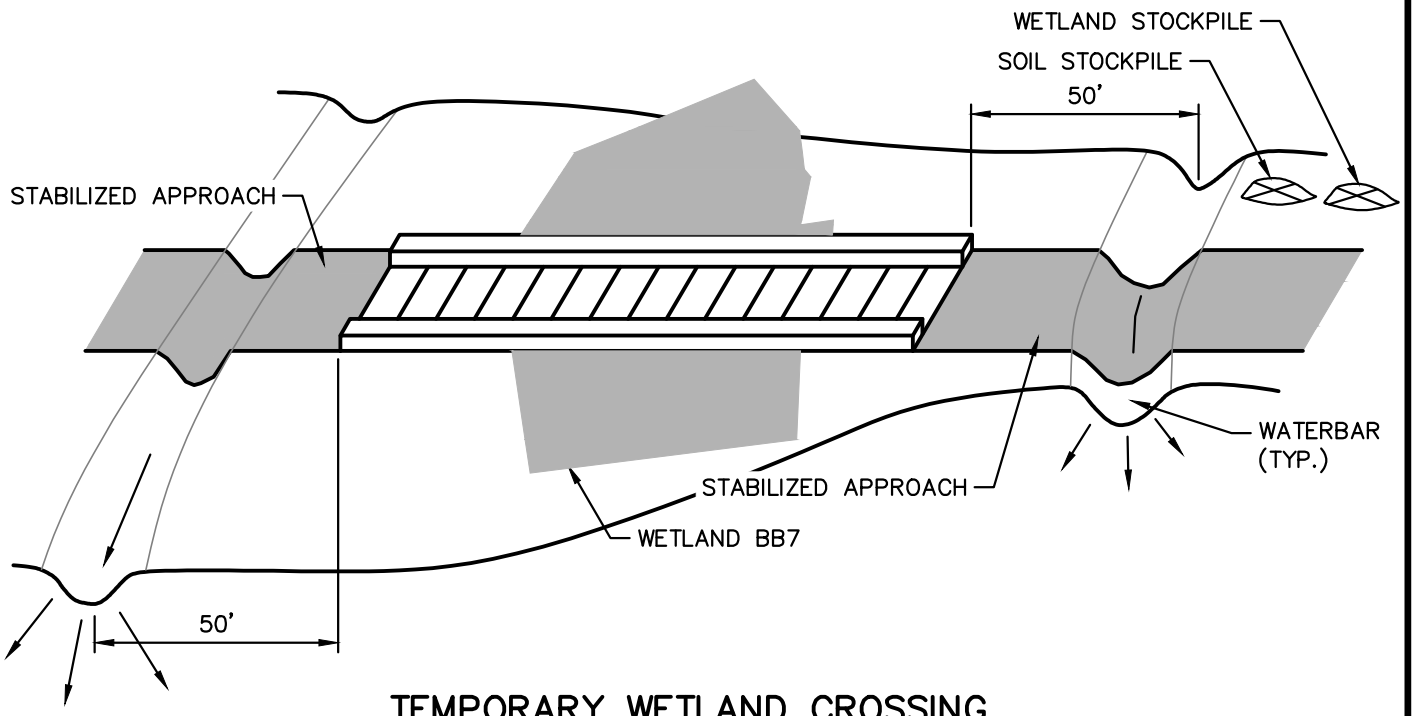
..\..\images\PA One Call.jpg

TETRA TECH
WWW.TETRATECH.COM
661 ANDERSEN DRIVE - FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

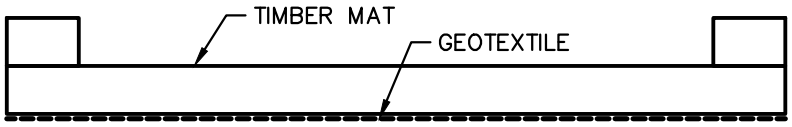
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE - ALLEGHENY COUNTY
JOINT PERMIT APPLICATION FOR W-BB7 PROFILE
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 4

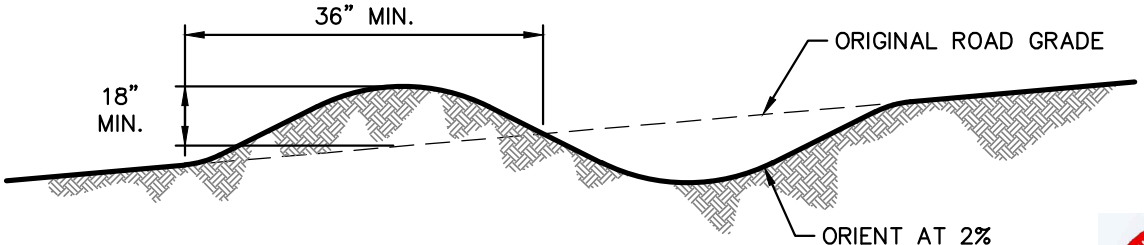
FIGURE 3



TEMPORARY WETLAND CROSSING
NOT TO SCALE



TYPICAL WETLAND CROSSING
NOT TO SCALE



WATERBAR DETAIL
NOT TO SCALE

NOTE:
APPROACH TO CROSSING NOT TO EXCEED A DEPTH OF 6" ABOVE ORIGINAL GRADE

PENNSYLVANIA ONE CALL SYSTEM, INC. 1-800-242-1776 STOP-CALL BEFORE YOU DIG!

TETRA TECH
WWW.TETRATECH.COM
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H318 PIPELINE – ALLEGHENY COUNTY
JOINT PERMIT APPLICATION FOR W-BB7

SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	4 OF 4

FIGURE 4

Tab 8

Project Location Map

End of Line
Lat: 40° 15' 15.276" N
Lon: 79° 57' 45.004" W

Start of Line
Lat: 40° 14' 27.145" N
Lon: 79° 55' 16.615" W

Wetland
W-BB7

Equitrans Expansion Project

N

1:24,000

0 2,000 4,000 Feet

EQUITRANS℠

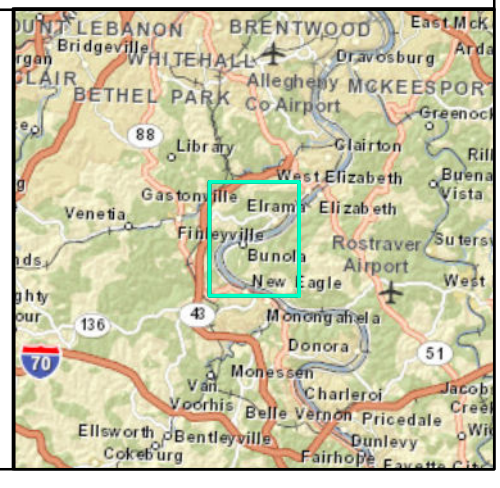
Attachment #: Tab 8
USGS Project Location Map
Washington & Allegheny County, PA

March 2016

Data Sources: Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Parcel Boundary



Document Path: P:\GIS\EQT\MapDocs\eep_pa_washallegCo_usgs.mxd

Tab 9

Project Description

PROJECT BACKGROUND AND ESCP CONCURRENT REVIEW REQUEST

Project Background

The proposed Equitrans, LP (Equitrans) Expansion Project (EEP) is located in Allegheny, Washington, and Greene Counties, Pennsylvania, and Wetzel County, West Virginia. The EEP is designed to transport natural gas from the northern portion of the Equitrans system south to the interconnection with Mountain Valley Pipeline, LLC's proposed Mountain Valley Pipeline, as well as to existing interconnects with Texas Eastern Transmission, LP and Dominion Transmission, Inc. The EEP will also increase system reliability, efficiency, and operational flexibility for the benefit of Equitrans customers.

The portion of the EEP within Allegheny County proposes to install one 20" natural gas pipeline (H-318 Pipeline) approximately 3 miles long within a 100' construction right-of-way (ROW) and 50' permanent ROW. The proposed H-318 Pipeline will generally run east-west and will be located in Forward Township, Allegheny County, and Union Township, Washington County, Pennsylvania. A Pennsylvania Chapter 105 General Permit Application and a 401 Water Quality Certification Application were submitted to the Allegheny County Conservation District (ACCD) for the proposed H-318 Pipeline on October 27, 2015 and are currently under review. The ACCD subsequently requested a Chapter 105 Joint Permit Application for the portion of the proposed H-318 Pipeline that crosses Wetland W-BB7 (W-BB7), located at 614 McVicker Lane in Forward Township, Allegheny County, Pennsylvania. An Erosion and Sediment Control General Permit (ESCGP-2) was submitted to ACCD on March 28, 2016 (ESG 00003160001). A Project E & S Plan has been included in this tab for review (Tab 12).

In addition, a Submerged Land License Agreement request was submitted to the Pennsylvania Department of Environmental Protection on November 11, 2015 for the H-318 Pipeline Monongahela River crossing.

Equitrans submitted an application on October 27, 2015 seeking a Certificate of Public Convenience and Necessity from the Federal Energy Regulatory Commission (FERC) Docket No. CP16-13-000 pursuant to Section 7(c) of the Natural Gas Act authorizing it to construct and operate the proposed EEP.

Proposed Project Activities

The W-BB7 Crossing Project (Project) is the portion of the proposed H-318 Pipeline that crosses W-BB7 at 614 McVicker Lane (Tax Parcel 1740-P-00172-0000-00). The Project will have temporary impacts to approximately 0.55 acres of W-BB7 during pipeline construction and installation activities. The temporary construction ROW will be reduced to 75-ft in width for the crossing of Wetland BB-7. Following construction, Equitrans proposes to restore disturbed areas as close as reasonably practicable to their original contours and to reseed those areas. The disturbed PEM wetland will be allowed to revert back to its original PEM wetland functions once pipeline construction is complete. Refer to Tab 18 for additional information of the restoration of Wetland W-BB7.

Equitrans is seeking a Chapter 105 Water Obstruction and Encroachment Joint Permit approval for the proposed Project, authorizing Equitrans to temporarily impact 0.55 acres of W-BB7, a 2.0 acre palustrine emergent (PEM) wetland.

Tab 10

Color Photographs and Photo Location Map

Photograph Number:	1	**Feature Name:**	W-BB7	**Date:**	07/11/2015
Direction:	SE	**Plant Community:**	PEM	**Remarks:**	N/A

UP W-BB7
TP W-BB7
1
W-BB7
Raccoon Run Rd
699
689
Church Hollow Rd
2086
Church Hollow Rd

EEP Wetland W-BB7 Crossing

N

1:3,000

0 200 400 Feet

EQUITRANS SM

Attachment #: Tab 10
Photo Location Map
Allegheny County, PA

March 2016

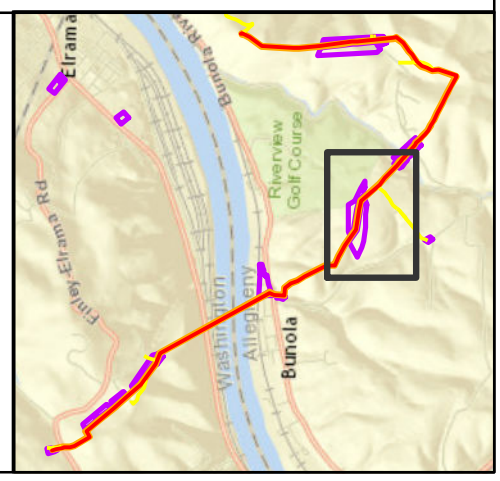
Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Parcel Boundary
- Test Pit
- Stream

Wetland

- PEM
- Photo Location



Document Path: P:\GIS\EQT\MapDocs\eep_pa_wb77_detail.mxd

Tab 11

Environmental Assessment

ENVIRONMENTAL ASSESSMENT FORM

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
and
U.S. ARMY CORPS OF ENGINEERS

ENVIRONMENTAL ASSESSMENT FORM (E.A. Form)

PART 1 - RESOURCE IDENTIFICATION

1. Indicate water resources which exist on the project site.

Name of streams(s) and/or body of water (including wetlands) Wetland W-BB7

Size of body of water (in acres) 0.55

Provide a table detailing all proposed aquatic resource impacts including type of structure or activity, length and width of streams or floodways, and acreage of wetlands or other bodies of water. All structures or activities must also include latitude and longitude for each proposed location.

Wetland - If wetlands are present at the project site, provide the following information relative to the person(s) or organization performing the wetland identification, delineation and related work (attach additional sheets if needed):

Last Name	First Name	MI	Telephone
Smith	Preston	R	(412) 921-8167
Mailing Address	**City**	**State**	**Zip + 4**
Tetra Tech, Inc. 661 Andersen Drive, Foster Plaza 7	Pittsburgh	PA	15220-2700
Email Address Preston.Smith@tetratech.com			

QUALIFICATIONS

Tetra Tech, Inc. (Environmental Consultants). Environmental Assessment Preparation Lead, Preston Smith, Manager, Wetland and Ecological Services. M.S. Biology, Wright State University. 14+ yrs exp. Wetland delineation performed by Angela Lands, Environmental Scientist

If wetlands are present, attach a copy of the wetland delineation report identified and labeled as **Enclosure A**. Include all field data sheets, denote the size (in acres) of the wetland. If this information details any physical information or features not shown in the "site plan" please attach additional plans which illustrate these features.

Enclosure A

PART 1 - RESOURCE IDENTIFICATION (continued)	**YES**	**NO**
2. **Is the site located within or adjacent to any of the following? Please mark either the "yes" or "no" column for each question.**		
A. National, state or local park, forest or recreation area	☐	☒
B. Natural, wild, or wilderness area	☐	☒
C. National natural landmark	☐	☒
D. National wildlife refuge, or Federal, state, local or private wildlife or plant sanctuaries	☐	☒
E. State Game Lands	☐	☒
F. Areas identified as prime farmland	☒	☐
If not included in the permit application package, please attach a map (e.g. 1:2400 scale or greater) indicating the location of the project, all water resources and the features identified above. Label the map as Enclosure B.	**ENCLOSURE B**	
3. Is the water resource listed as trout stocked waters by the Pennsylvania Fish and Boat Commission?	☐	☒
4. Is the water resource designated as a wild trout stream by the Pennsylvania Fish and Boat Commission?	☐	☒
5. Is the water resource listed as High Quality or Exceptional Value in Title 25 Pa. Code Chapter 93?	☐	☒
Indicate the stream classification found in Chapter 93. Classification N/A		
6. Is the water resource designated as a National Wild or Scenic River or as part of the Commonwealth's Scenic Rivers System or classified as priority 1-A for inclusion in the system?	☐	☒
7. Is the water resource part of or located along a private or public water supply?	☐	☒
(IF COMPLETING A SMALL PROJECT APPLICATION ADVANCE TO PART 3)	**ENCLOSURE C**	
8. Provide a written narrative, identified and labeled as "Enclosure C - Description of Aquatic Habitat," discussing the following ecological functions:		
A. Aquatic habitats including:		
(1) Food chain production		
(2) General habitat a. Nesting e. Migration b. Spawning f. Feeding c. Rearing g. Escape Cover d. Resting h. Other		
(3) Habitat for threatened and endangered plant and animal species (Discuss results of the Pennsylvania Natural Diversity Inventory (PNDI) form and Bog Turtle Habitat Screening)		
(4) Environmental Study Areas a. Sanctuaries b. Refuges		
(5) If project proposes a stream relocation, a stream enclosure, or dredging, provide a description of the instream macroinvertebrate community.		

PART 1 - RESOURCE IDENTIFICATION (continued)	**ENCLOSURE C** **Description of Aquatic Habitat**
B. Water Quantity and Streamflow	
(1) Natural drainage patterns	
(2) Flushing characteristics	
(3) Current patterns	
(4) Groundwater discharge for baseflow	
(5) Natural recharge area for ground and surface waters	
(6) Storm and floodwater storage and control	
C. Water Quality	
(1) Preventing Pollution	
(2) Sedimentation control and patterns	
(3) Salinity distribution	
(4) Natural water filtration	
D. Recreation	
(1) Game Species	
(2) Non Game Species	
(3) Fishing	
(4) Hiking	
(5) Observation (plant/wildlife)	
(6) Other	
E. Upstream and Downstream Property	
F. Other Environmental Factors Determined by Site Investigation	
PART 2 - PROJECT DESCRIPTION	
9. **Project Impacts** For impacts to regulated waters of the Commonwealth, answer fully, completely and in detail the following questions; attach and label as **Enclosure D**.	**ENCLOSURE D**
A. Discuss the impacts on:	
(1) National, state or local park, forest or recreation area	
(2) Natural, wild, or wilderness area	
(3) National, state, or local historic site	
(4) National natural landmark	
(5) National wildlife refuge	
(6) Cultural or archaeological landmarks	
(7) State Game Lands	

PART 2 - PROJECT DESCRIPTION (continued)	**ENCLOSURE D** **Project Impacts**
(8) Federal, state, local or private plant or wildlife sanctuaries	
(9) Areas identified as prime farmland	
B. Discuss the environmental impacts on:	
(1) Aquatic habitats including:	
a. Food Chain production	
b. General habitat (1) Nesting (5) Migration (2) Spawning (6) Feeding (3) Rearing (7) Escape Cover (4) Resting (8) Other	
c. Habitat for threatened and endangered plant and animal species	
d. Environmental Study Areas (1) Sanctuaries (2) Refuges	
(2) Water Quantity and Streamflow	
a. Natural drainage patterns	
b. Flushing characteristics	
c. Current patterns	
d. Groundwater discharge for baseflow	
e. Natural recharge area for ground and surface waters	
f. Storm and floodwater storage and control	
(3) Water Quality	
a. Preventing Pollution	
b. Sedimentation control and patterns	
c. Salinity distribution	
d. Natural water filtration	
(4) Recreation	
a. Game Species	
b. Non Game Species	
c. Fishing	
d. Hiking	
e. Observation (wildlife)	
f. Other	
(5) Upstream and downstream property	
(6) Other Environmental Factors	

PART 2 - PROJECT DESCRIPTION (continued)

C. Identify all environmental impacts on other adjacent land and water resources associated with the construction, modification or operation of the dam, reservoir, water obstruction, or encroachment in the area of the project.

D. Identify and evaluate the potential cumulative environmental impacts of this project and other potential or existing projects like it, and the impacts that may result through numerous piecemeal changes to the resource.

E. Identify and describe all other dams, water obstructions or encroachments which may or will be needed, in addition to those described in this Application, to fulfill the purpose of the current project.

ENCLOSURED

PART 3 – CERTIFICATION AND FEE

I certify that the above statements, attachments including those labeled and identified as Enclosures, and all conclusions are true, correct, and based upon current environmental principles and science, to the best of my knowledge and belief.

☒ Application Fee & Chapter 105 Fee(s) Calculation Worksheet enclosed

Signature of Person Completing the Environmental Assessment Form

6-29-16
Date

The Department may waive a specific information requirement in writing, at the request of the Applicant, during the pre-application review process if the Department determines that specific information is not necessary to review the application.

APPLICATION FEE & CHAPTER 105 FEE(S) CALCULATION WORKSHEET

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERWAYS ENGINEERING AND WETLANDS

CHAPTER 105 FEE(S) CALCULATION WORKSHEET

Additional information can be found at 25 PA Code §105.13 (relating to regulated activities – information and fees), the General Permit Registration (3150-PM-BWEW0500), the Joint Permit Application (3150-PM-BWEW0036) and the Dam Permit Application (3140-PM-BWEW0001)

Federal, State, county or municipal agencies or municipal authorities: ☐ **EXEMPT from fees**

These entities are exempt from these fees. If the applicant falls into one of these categories, please check the box above and provide only the first page of this worksheet with the project application or registration.

ALL OTHERS:

1. Please place an "X" in the box next to all authorizations that apply to the project and complete the fee information below those authorization(s). Projects may require multiple authorizations and fees, further clarification and examples are included below and at the end of this document.
2. Total each authorization, Section, and Part. Part One is for Water Obstructions and Encroachment authorizations, Part Two is for Dam Safety authorizations.
3. Please provide this completed worksheet (page 1 and page 2 and/or page 3, as is appropriate to the project) and a check for the applicable fee(s) with the project application or registration. The check should be made payable to the "**Commonwealth of Pennsylvania Clean Water Fund**" OR "**Allegheny County Conservation District Clean Water Fund**", whichever is the reviewing entity.

NOTES:

Per *25 PA Code §105.13(c)(2)(iii)* Disturbance review fees are calculated by individually adding all of the permanent and temporary impacts to waterways, floodways, floodplains and bodies of water including wetlands to the next highest tenth acre and multiplying the permanent and temporary impacts by the respective fees and then these amounts are added to the other applicable fees.

Entities proposing structures or activities to occupy a Submerged Lands of the Commonwealth must obtain a Submerged Lands License Agreement (SLLA) and pay the appropriate annual charge. The applicant will be contacted if this charge applies to the project.

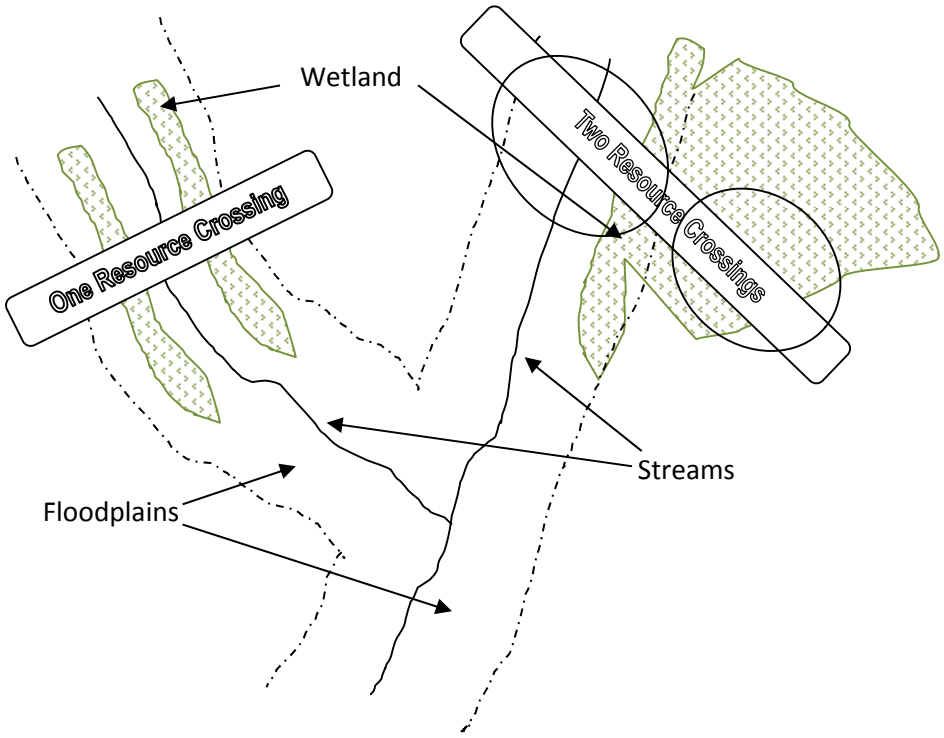
Floodway – The channel of the watercourse and portions of the adjoining floodplains which are reasonably required to carry and discharge the 100-year frequency flood. Unless otherwise specified, the boundary of the floodway is as indicated on maps and flood insurance studies provided by FEMA. In an area where no FEMA maps or studies have defined the boundary of the 100-year frequency floodway, it is assumed, absent evidence to the contrary, that the floodway extends from the stream to 50 feet from the top of the bank of the stream.

Wetland and Stream Clarification:

[1] In many instances, wetlands are located within the floodplain of a stream. These resources for the purposes of calculating disturbance fees are considered co-located or overlapping and the area of disturbance would only be used once.

[2] In the case of GP-5, GP-7 and GP-8 fees are charged per structure per resource crossing and the following also applies to the disturbance fees:

- A crossing of the stream and the floodplain with wetlands present within the floodplain is considered one resource crossing.
- When the crossing traverses a stream and the floodplain and a wetland that is located outside of the floodplain or a wetland that extends out beyond the floodplain, it is considered two resource crossings.



PART ONE: WATER OBSTRUCTIONS AND ENCROACHMENTS

SECTION A. APPLICATION FEES

☒ **WATER OBSTRUCTION AND ENCROACHMENT PERMIT** (Joint Permit Application)

Some activities or structures within a project may also qualify for an accumulation of General Permit fees, please mark the box above indicating an Individual Water Obstruction and Encroachment Permit AND the corresponding fee(s) in the General Permit section below those. Activities or structures not qualifying for a General Permit fee must include a disturbance fee.

☒ Administrative Filing Fee[1]		$ 1,750	+	
☒ Temporary Disturbance ($400/0.1ac)	0.60 acres x $4,000 =	$ 2,400	+	
☐ Permanent Disturbance ($800/0.1ac)	0. acres x $8,000 =	$ 0		= $ 4,150
		WO&E FEE subtotal (a)		$ 4,150

☐ **GENERAL PERMIT(S)** (select activity/structure(s) below, see page 4 for "#" explanation)

Some activities or structures within a project requiring an Individual Water Obstruction and Encroachment Permit may qualify for an accumulation of General Permit fees, please mark the corresponding fee(s) below but not the box above indicating a General Permit.

☐ GP-1 Fish Habitat Enhancement Structures		$ 50		= $ _____
☐ GP-2 Small Docks and Boat Launching Ramps	_____ (#) x	$ 175		= $ _____
☐ GP-3 Bank Rehabilitation, Bank Protection and Gravel Bar Removal	_____ (#) x	$ 250		= $ _____
☐ GP-4 Intake and Outfall Structures	_____ (#) x	$ 200		= $ _____
☐ GP-5 Utility Line Stream Crossings[2]	_____ (#) x _____ (#) x	$ 250		= $ _____
☐ GP-6 Agricultural Crossings and Ramps	_____ (#) x	$ 50		= $ _____
☐ GP-7 Minor Road Crossings[2]	_____ (#) x	$ 350		= $ _____
☐ GP-8 Temporary Road Crossings[2]	_____ (#) x	$ 175		= $ _____
☐ GP-9 Agricultural Activities		$ 50		= $ _____
☐ GP-10 Abandoned Mine Reclamation		$ 500		= $ _____
☐ GP-11 Maintenance, Testing, Repair, Rehabilitation, or Replacement of Water Obstructions and Encroachments[1]		$ 750	+	
☐ Temporary Disturbance ($400/0.1ac)	_____ acres x $4,000 =	$ _____	+	
☐ Permanent Disturbance ($800/0.1ac)	_____ acres x $8,000 =	$ _____		= $ _____
☐ GP-15 Private Residential Construction in Wetlands[1]		$ 750	+	
☐ Temporary Disturbance ($400/0.1ac)	_____ acres x $4,000 =	$ _____	+	
☐ Permanent Disturbance ($800/0.1ac)	_____ acres x $8,000 =	$ _____		= $ _____
		GP(s) FEE subtotal (b)		$ 0

PART ONE: SECTION A. APPLICATION FEE(S) subtotal (a+b=c) $ 4,150

SECTION B. OTHER FEES

☐ Environmental Assessment for Waived Activities (§105.13(c)(2)(iv))		$ 500		$ _____
☐ Amendment to Water Obstruction and Encroachment Permit				
☐ Major Amendment[1]		$ 500	+	
☐ Temporary Disturbance	_____ acres x $4,000 =	$ _____	+	$ _____
☐ Permanent Disturbance	_____ acres x $8,000 =	$ _____		= $ _____
☐ Minor Amendment		$ 250		$ _____
☐ Transfer of Water Obstruction and Encroachment Permit				
☐ WITH Submerged Lands License Agreement		$ 200		$ _____
☐ WITHOUT Submerged Lands License Agreement		$ 100		$ _____

PART ONE: SECTION B. OTHER FEE(S) subtotal (d) $ 0

PART ONE: FEE(S) TOTAL (c+d=e) $ 4,150

DEP USE ONLY			
FEE TOTAL:		Permit / Authorization Number (s):	
Correct Amount:		Check #:	

Check Amount: _____ Payable to: _____ _____

PART TWO: DAM SAFETY (USE ONE FEE SHEET PER DAM)

SECTION A. APPLICATION FEES

☐ **DAM PERMIT APPLICATION – NEW DAM**

☐ Size A	☐ Hazard 1 $26,500	☐ Hazard 2 $26,500	☐ Hazard 3 $25,500	☐ Hazard 4 $23,500	$ ____
☐ Size B	☐ Hazard 1 $19,000	☐ Hazard 2 $19,000	☐ Hazard 3 $18,500	☐ Hazard 4 $17,000	$ ____
☐ Size C	☐ Hazard 1 $10,500	☐ Hazard 2 $10,500	☐ Hazard 3 $10,000	☐ Hazard 4 $ 8,000	$ ____

☐ **STAGED CONSTRUCTION**

NO. OF STAGES BEYOND INITIAL STAGE _____ X APPLICATION FEE _____ X 0.90 (90%) $ ____

☐ **DAM PERMIT APPLICATION – MODIFICATION OF DAM**

☐ Size A	☐ Hazard 1 $18,500	☐ Hazard 2 $18,500	☐ Hazard 3 $18,500	☐ Hazard 4 $18,000	$ ____
☐ Size B	☐ Hazard 1 $12,000	☐ Hazard 2 $12,000	☐ Hazard 3 $12,000	☐ Hazard 4 $11,500	$ ____
☐ Size C	☐ Hazard 1 $ 7,500	☐ Hazard 2 $ 7,500	☐ Hazard 3 $ 7,500	☐ Hazard 4 $ 7,500	$ ____

☐ **STAGED CONSTRUCTION**

NO. OF STAGES BEYOND INITIAL STAGE _____ X APPLICATION FEE _____ X 0.85 (85%) $ ____

☐ **DAM PERMIT APPLICATION – OPERATION & MAINTANANCE OF EXISTING DAM**

☐ Size A	☐ Hazard 1 $12,500	☐ Hazard 2 $12,500	☐ Hazard 3 $12,000	☐ Hazard 4 $10,000	$ ____
☐ Size B	☐ Hazard 1 $10,000	☐ Hazard 2 $10,000	☐ Hazard 3 $ 9,500	☐ Hazard 4 $ 8,500	$ ____
☐ Size C	☐ Hazard 1 $ 7,000	☐ Hazard 2 $ 7,000	☐ Hazard 3 $ 6,500	☐ Hazard 4 $ 6,000	$ ____

PART TWO: SECTION A. APPLICATION FEE(S) subtotal (a) $ ____

SECTION B. OTHER FEES

☐ Letter of Amendment or Authorization

☐ Major (≥$250,000)

☐ Size A $14,700 ☐ Size B $ 8,700 ☐ Size C $ 4,400 $ ____

☐ Minor (<$250,000)

☐ Size A $ 1,300 ☐ Size B $ 1,000 ☐ Size C $ 650 $ ____

☐ Major Dam Design Revision

☐ Size A $ 4,700 ☐ Size B $ 3,200 ☐ Size C $ 1,700 $ ____

☐ Environmental Assessment

☐ Environmental Assessment for Dam Removal (§105.12(a)(16)) $ 500 $ ____

☐ Non-Jurisdictional Dams $ 900 $ ____

☐ Letter of Amendment or Authorization

☐ Size A $ 1,400 ☐ Size B $ 1,000 ☐ Size C $ 900 $ ____

☐ Transfer of Dam Permit

☐ No Proof of Financial Responsibility $ 550 ☐ Proof of Financial Responsibility $300 $ ____

☐ Annual Registration

☐ Hazard 1 $ 1,500 ☐ Hazard 2 $ 1,500 ☐ Hazard 3 $ 800 $ ____

PART TWO: SECTION B. OTHER FEE(S) subtotal (b) $ ____

PART TWO: FEE(S) TOTAL (a+b=c) $ ____

DEP USE ONLY			
FEE TOTAL:	_____	Permit / Authorization Number (s):	_____
Correct Amount:	_____	Check #:	_____
Check amount:	_____	Payable to:	_____

INTRODUCTION

INTRODUCTION

Project Background

The proposed Equitrans, LP (Equitrans) Expansion Project (EEP) is located in Allegheny, Washington, and Greene Counties, Pennsylvania, and Wetzel County, West Virginia. The EEP is designed to transport natural gas from the northern portion of the Equitrans system south to the interconnection with Mountain Valley Pipeline, LLC's proposed Mountain Valley Pipeline, as well as to existing interconnects with Texas Eastern Transmission, LP and Dominion Transmission, Inc. The EEP will also increase system reliability, efficiency, and operational flexibility for the benefit of Equitrans customers.

The portion of the EEP within Allegheny County proposes to install one 20" natural gas pipeline (H-318 Pipeline) approximately 3 miles long within a 100' construction right-of-way (ROW) and 50' permanent ROW. The proposed H-318 Pipeline will generally run east-west and will be located in Forward Township, Allegheny County, and Union Township, Washington County, Pennsylvania. A Pennsylvania Chapter 105 General Permit Application and a 401 Water Quality Certification Application were submitted to the Allegheny County Conservation District (ACCD) for the proposed H-318 Pipeline on October 27, 2015 and are currently under review. The ACCD subsequently requested a Chapter 105 Joint Permit Application for the portion of the proposed H-318 Pipeline that crosses Wetland W-BB7 (W-BB7), located at 614 McVicker Lane in Forward Township, Allegheny County, Pennsylvania.

Proposed Activities

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The Project has been designed to satisfy Pennsylvania's stormwater management requirements and has incorporated best management practices identified in the Pennsylvania Stormwater Best Management Practices (BMP) Manual. Stormwater will be managed during construction activities in accordance with the Erosion and Sediment (E & S) Plan set forth for the EEP. The wetland W-BB7 is not within Federal Emergency Management Agency (FEMA) mapped floodways nor will the wetland crossing result in any change in the storage capacity of the floodways.

Proposed Authorizations

Equitrans is seeking a Chapter 105 Water Obstruction and Encroachment Joint Permit approval for the proposed Project, authorizing Equitrans to temporarily impact 0.55 acres of W-BB7, a 2.0 acre palustrine emergent (PEM) wetland. Past and present land use of the Project is agriculture. Future land use will remain

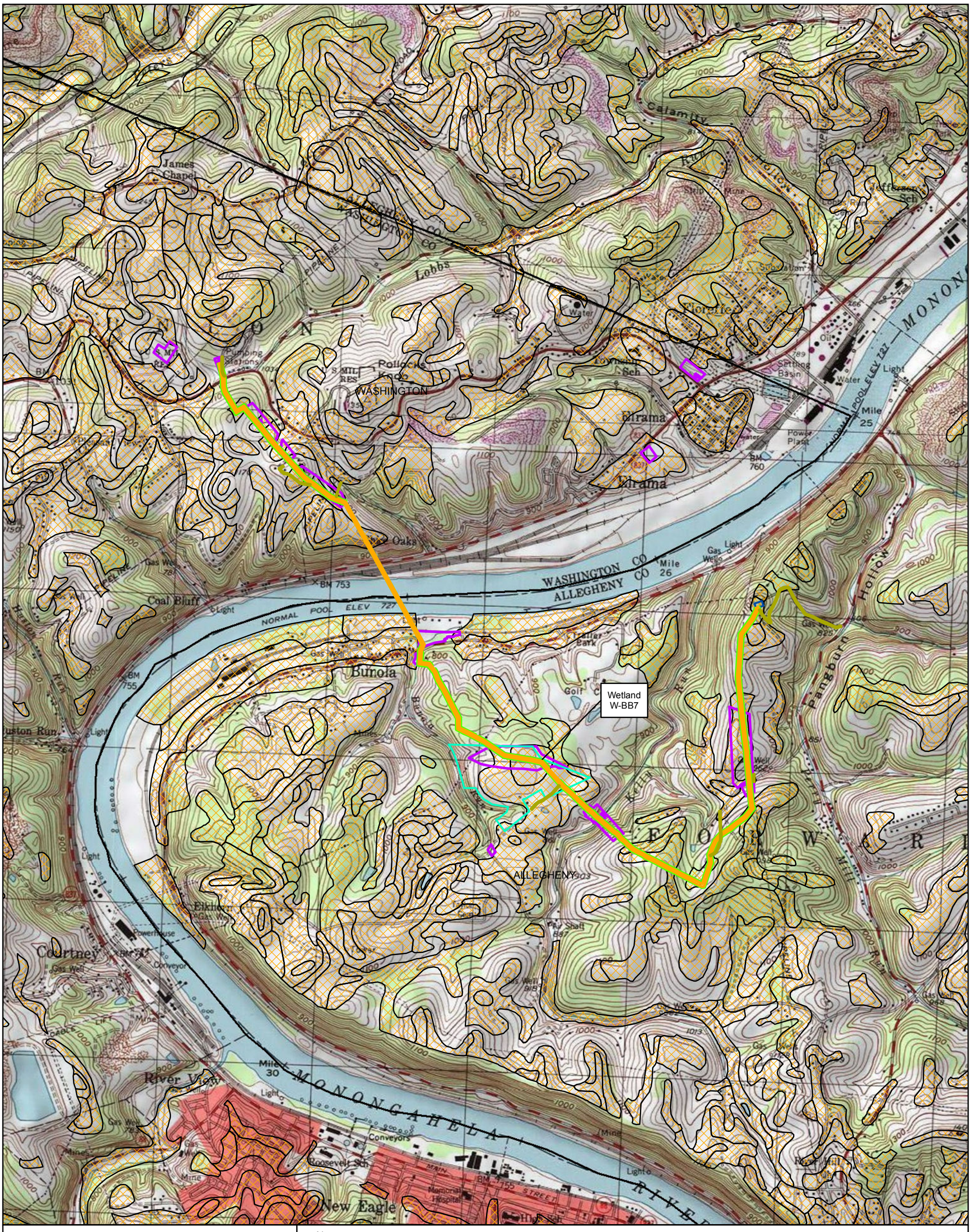
agriculture upon completion of the pipeline installation and restoration activities. Relevant topographic features including streams, wetlands, roads, pipelines, structures, utility lines, fences, and other significant items within the Project limit of disturbance (LOD) have been illustrated on the Plan Sheets (Tab 7), where applicable.

ENCLOSURE A

WETLAND DELINEATION AND STREAM IDENTIFICATION REPORTS

ENCLOSURE B

ENVIRONMENTAL ASSESSMENT MAP



Equitrans Expansion Project

N

1:24,000

0 2,000 4,000 Feet

EQUITRANS℠

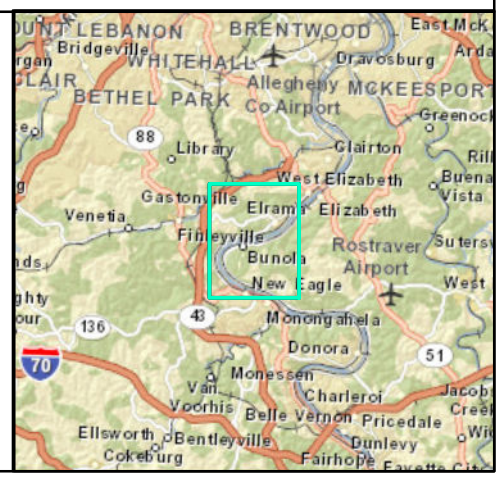
Enclosure B-1
Environmental Assessment
Washington & Allegheny County, PA

March 2016

Data Sources: Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).

Legend

- Right-of-Way (Access Road)
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- County Boundary
- National Park
- PA State Park
- PA State Forest
- PA State Gameland
- PA Conservation Stewardship
- Wild Natural Areas
- USDA Soils - Farmland
- Appalachian National Scenic Trail
- Parcel Boundary



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ENCLOSURE C
DESCRIPTION OF AQUATIC HABITAT

ENCLOSURE C – DESCRIPTION OF AQUATIC HABITAT

A. AQUATIC HABITAT

The proposed Equitrans, LP (Equitrans) Expansion Project (EEP) is located in Allegheny, Washington, and Greene Counties, Pennsylvania, and Wetzel County, West Virginia. The EEP is designed to transport natural gas from the northern portion of the Equitrans system south to the interconnection with Mountain Valley Pipeline, LLC's proposed Mountain Valley Pipeline, as well as to existing interconnects with Texas Eastern Transmission, LP and Dominion Transmission, Inc. The EEP will also increase system reliability, efficiency, and operational flexibility for the benefit of Equitrans customers.

The portion of the EEP within Allegheny County proposes to install one 20" natural gas pipeline (H-318 Pipeline) approximately 3 miles long within a 100' construction right-of-way (ROW) and 50' permanent ROW. The proposed H-318 Pipeline will generally run east-west and will be located in Forward Township, Allegheny County, and Union Township, Washington County, Pennsylvania. A Pennsylvania Chapter 105 General Permit Application and a 401 Water Quality Certification Application were submitted to the Allegheny County Conservation District (ACCD) for the proposed H-318 Pipeline on October 27, 2015 and are currently under review. The ACCD subsequently requested a Chapter 105 Joint Permit Application for the portion of the proposed H-318 Pipeline that crosses Wetland W-BB7 (W-BB7), located at 614 McVicker Lane in Forward Township, Allegheny County, Pennsylvania.

The W-BB7 Crossing Project (Project) is the portion of the proposed H-318 Pipeline that crosses W-BB7 at 614 McVicker Lane (Tax Parcel 1740-P-00172-0000-00). The Project will have temporary impacts on approximately 0.55 acres of W-BB7 during pipeline construction and installation activities. No permanent Project impacts are anticipated to W-BB7. W-BB7 is a palustrine emergent wetland adjacent to a non-relatively permanent waterbody. No jurisdictional waterbodies were identified in the Project survey corridor in the vicinity of W-BB7; however, W-BB7 likely has an indirect hydrologic connection to Kelly Run, located approximately 1,200 feet southeast and downslope of W-BB7. No impacts to other waterbodies are anticipated as part of the W-BB7 crossing. Upon completion of the pipeline construction, all disturbed areas within the limit of disturbance will be restored to a meadow in good condition. The restored wetland will be allowed to revert back to its original PEM wetland functions once pipeline construction is complete.

The Tetra Tech Aquatic Resource Report for the Equitrans Expansion Pipeline Project in Allegheny, Washington, and Greene Counties, Pennsylvania, and Wetzel County, West Virginia is included as part of Enclosure A of the Environmental Assessment (Tab11, Enclosure A).

A.1 Food Chain Production

Growth of herbaceous plants within the emergent wetland constitutes the food chain base that supports primary consumers such as invertebrates and small mammal herbivores.

A.2 General Habitat

a. Nesting

Emergent wetlands and the existing pipeline ROW, which is primarily open grassland, may provide suitable nesting habitat for various bird species that nest on, or near, the ground; however the property the Project is located on is currently utilized for agriculture. There was no direct evidence of bird or mammal populations using W-BB7 for nesting.

b. Spawning

No spawning grounds were present within the Project area as there were no streams identified adjacent to the wetland.

c. Rearing

No streams were identified within the Project area.

d. Resting

W-BB7 provides habitat that has the potential to be used for resting cover and/or perches by a variety of birds, mammals, amphibians, and insects.

e. Migration

W-BB7 is not believed to be utilized during the migration of wildlife or birds due to its relatively small size.

f. Feeding

W-BB7 may serve as a food source, or production export, for invertebrates, birds, reptiles, amphibians, and mammals.

g. Escape Cover

W-BB7 may provide enough vegetative and/or detritus cover for insects, amphibians, and small mammal species.

h. Other

No other general habitat considerations were identified during the aquatic resource survey.

A.3 Habitat for Threatened and Endangered Plant and Animal Species

Equitrans conducted a Pennsylvania Natural Diversity Index (PNDI) Environmental Project Review screening for the Project. The PNDI screening did not indicate that any Pennsylvania listed species of special concern (SOSC) occur within the Project area. No identified unique, sensitive, or protected vegetation areas or animal species would be impacted by the Project.

A.4 Environmental Study Areas

a. Sanctuaries

The Project will not affect areas dedicated for use as sanctuaries by state or federal agencies, or nonprofit organizations.

b. Refuges

No National Wildlife Refuges or management areas, designated critical habitat, or significant habitats were identified within the proposed Project area.

A.5 Stream Relocation, Enclosure, or Dredging

There are no stream relocations, enclosures, or waterway dredging/deepening activities proposed in conjunction with the proposed Project. Therefore, a description of the instream macroinvertebrate communities is not required as part of this Environmental Assessment Form (EAF).

B WATER QUANTITY AND STREAMFLOW

B.1 Natural Drainage Patterns

The Project area indirectly drains to Kelly Run, which then drains into the Monongahela River. Kelly Run and the Monongahela River are listed as Warm Water Fishes (WWF), as designated in Chapter 93 of Title 25 of the PA Code. The proposed Project is located within the Pittsburgh Low Plateau physiographic province. Though no streams were identified within the Project area, the general drainage pattern of the streams located in the Pittsburgh Low Plateau is dendritic, which is similar to the branching of tree roots. Dendritic drainage patterns develop in regions underlain by homogeneous material that is subject to a similar resistance to weathering.

B.2 Flushing Characteristics

No streams were identified within the Project area. W-BB7 does not contain surface water that supports continuous flow due to its relatively isolated hydrologic nature on an upper hillslope approximately 1,200 feet upslope of Kelly Run; therefore, W-BB7 is considered to have no flushing ability.

B.3 Current Patterns

No streams were identified within the Project area. There are no sustained currents present in the Project area.

B.4 Groundwater Discharge for Baseflow

No streams were identified within the Project area; however, W-BB7 likely has an indirect hydrologic connection to Kelly Run, located approximately 1,200 feet southeast and downslope of W-BB7. Based on the local topography and distance from down gradient watercourses, there is no potential for downgradient streams to be substantially augmented by groundwater discharge from this wetland. However, no studies have been conducted to quantify the contribution of groundwater discharge to the baseflow of the streams located adjacent to the Project property.

B.5 Natural Recharge Area for Ground and Surface Waters

The hydrology for W-BB7 is likely supported by precipitation, localized microtopographic run-off, and groundwater input. Although no streams were identified within the Project area, W-BB7 likely has an indirect hydrologic connection to Kelly Run, located approximately 1,200 feet southeast and downslope. Given the likely influence of groundwater input to W-BB7, this wetland may be considered a natural recharge area for surface waters; however, the topographic position of W-BB7 on the upper slope of a hill and approximately 1,200-feet distance between W-BB7 and Kelly Run indicate that this wetland may not represent a significant direct source of natural recharge for Kelly Run.

B.6 Storm and Floodwater Storage and Control

W-BB7 provides no capacity to store flood waters and does not serve to reduce the severity of flood peaks. W-BB7 is located approximately 1,200 feet northeast of Kelly Run at a topographic high point within its drainage basin; therefore, it will not have any function or value associated with storm or flood water retention or velocity suppression.

C. WATER QUALITY

C.1 Preventing Pollution

Most of the land surrounding the Project is rural, primarily mixed agriculture and woodland, in addition to a golf course to the north of the crossing location. Potential sources of pollution are minor and mainly limited to possible storm water and fertilizer runoff from adjacent agricultural areas and the adjacent Riverview Golf Course. W-BB7 has some limited capacity to mitigate pollution due to its proximity to possible contaminants.

C.2 Sedimentation Control and Patterns

The Project is located in an agricultural field surrounded by woodlands. In addition to the erosion and sediment controls that will be utilized during pipeline construction, the woodland habitat adjacent to the proposed Project can act as a buffer in preventing the sedimentation of downgradient streams. During periods of high precipitation and runoff, W-BB7 can be expected to supply limited function in preventing the transport of sediments to downslope areas and streams.

C.3 Salinity Distribution

W-BB7 is a freshwater wetland; there is no evidence of any naturally occurring or man-induced salinity associated with W-BB7.

C.4 Natural Water Filtration

There were no streams identified within the Project area. Streams present outside of the Project area may aid in natural water filtration by retaining particles and other contaminants within sediments and the stream channel. W-BB7 may also aid in the collection and natural filtration of water and may supply Kelly Run with groundwater.

D. RECREATION

D.1 Game Species

The level of hunting activities and specific game species hunted in the Project area are unknown; however, hunting is a common and popular recreational activity in the vicinity of the proposed Project area. Typical game species commonly hunted in the area include white-tailed deer, eastern gray squirrel, eastern cottontail rabbit, and wild turkey. The Project is not located within or adjacent to any Pennsylvania State Game Land (SGL) or privately-owned hunting club properties.

D.2 Non-Game Species

The level of recreational activities involving non-game species, such as bird watching, wildlife photography, and amateur naturalist study, occurring in the Project area is likely minimal. W-BB7 is located on private property in an agricultural field. W-BB7 may provide habitat and potential breeding areas for various other non-game species including amphibians.

D.3 Fishing

There are no streams in the Project area. No streams in the vicinity of the proposed Project have been designated as Naturally Reproducing Trout Streams, Approved Trout Stocked Waters, Cold Water Fisheries (CWF), Exceptional Value (EV), High Quality Trout Stocked Fisheries (HQ-TSF), or Trout Stocked Fisheries (TSF). The two nearest streams, Bunola Run and Kelly Run are considered WWF.

D.4 Hiking

No named or identified trails are present on the Project area. The Project area does not contain any water trails.

D.5 Observation

No identified unique, sensitive, or protected vegetation areas would be impacted by the Project. The PNDI Environmental Project Review Search Receipt does not indicate that any Pennsylvania listed SOSC occur within the Project area.

D.6 Other

No other functions, values, and/or uses have been identified for W-BB7 that will be affected by the Project.

E. UPSTREAM AND DOWNSTREAM PROPERTY

The proposed Project is located within an agricultural field. W-BB7 is located on the upper hillslope of the drainage area and therefore receives no hydrologic contributions from up-gradient streams on adjoining properties. While investigating the Project, no direct hydrological connection to downslope streams was observed. W-BB7 likely has an indirect hydrologic connection to Kelly Run, located approximately 1,200 feet southeast and downslope. The proposed Project will not cause long-term degradation of water quality, alter flow volumes, or change the direction of flow. In addition, the proposed Project is not expected to interfere with the normal riparian rights of upstream or downstream landowners.

F. OTHER ENVIRONMENTAL FACTORS

There were no other environmental factors of concern identified during the field surveys conducted for the proposed Project.

G. REFERENCES

PFBC (Pennsylvania Fish and Boat Commission). 2005. Pennsylvania Wild Trout Waters (Natural Reproduction) - May 2015. http://fishandboat.com/trout_repro.pdf; accessed March, 2016.

PFBC. 2015a. County Guide. Interactive Maps: PA Lakes–Ww/Cw Fisheries–Biologist Reports–Best Waters–Fishing Special Regs–Water Trails–more. http://fishandboat.com/county.htm; accessed March, 2016.

PFBC. 2015b. Warmwater / Coolwater Fisheries. http://fishandboat.com/wwcw.htm; accessed March, 2016.

Tetra Tech, Inc. 2015. *Aquatic Resource Report, Equitrans, LP, Equitrans Expansion Pipeline Project, Allegheny, Washington, and Green Counties, Pennsylvania and Wetzel County, West Virginia*. October 2015.

The Pennsylvania Code. Title 25 Environmental Protection, Chapter 93. Water Quality Standards.

ENCLOSURE D
PROJECT IMPACTS

ENCLOSURE D – PROJECT IMPACTS

A. PROJECT IMPACTS ON SENSITIVE RESOURCES

A.1 National, State or Local Park, Forest, or Recreation Areas

The Project does not lie within any national, state, and local parks and recreation areas. The only recreation resource identified within 0.25 mile of the Project is the Riverview Golf Course.

A.2 Natural, Wild, or Wilderness Areas

No specially designated Natural, Wild, or Wilderness Areas are present at the proposed Project.

A.3 National, State, or Local Historic Sites

Past and present land use of the Project area is agriculture. Based on available aerial imagery, the Project area has been agriculture since before 1993; USGS topographic mapping from 1954 indicates that the Project area has been agriculture since prior to 1954. Based on available aerial imagery of the Project, there are no structures within the Project LOD on imagery dating back to 1993. USGS topographic mapping from the 1950's does not show any structures within the Project LOD. USGS topographic mapping also indicates prior strip mining in the vicinity of the Project LOD.

A Phase I survey to identify archeological cultural resources and an architectural reconnaissance survey to identify historic properties was conducted for the Equitrans Expansion Project (EEP) in August and September, 2015. These surveys did not identify any field sites eligible for state listing through the Pennsylvania Historical and Museum Commission, or any resources with sufficient significance or integrity to be eligible for the National Register of Historic Places in the Project area.

A.4 National Natural Landmarks

No designated national natural landmarks are located in the Project area.

A.5 National Wildlife Refuges

No national wildlife refuges are located at the Project area.

A.6 Cultural or Archaeological Landmarks

(See the response for A.3.)

A.7 State Game Lands

The Project is not located within any State Gamelands.

A.8 Federal, State, Local or Private Plant or Wildlife Sanctuaries

No federal, state, local or private plant or wildlife sanctuaries are located in the Project area.

A.9 Prime Farmland

The Project includes a total of 0.55 acres of soil designated as Prime Farmland or Farmland of Statewide Importance within Pennsylvania. Approximately 0.50 acres of the Project area is designated as Farmland of Statewide Importance and 0.05 acres of the Project area is designated as Prime Farmland. The designated farmland is located along the proposed pipeline route, which will be restored and available for agricultural use once the pipeline trench is backfilled; therefore, no significant or permanent impacts on these farmland soils are anticipated.

B. ENVIRONMENTAL IMPACTS

B.1 Aquatic Habitats

Equitrans, LP (Equitrans) is committed to reducing and minimizing impacts to waterbodies in general, to the extent practicable. However, because this is a linear project, total avoidance of all wetlands and streams is not possible or practicable. The Project will impact W-BB7 during construction activities. Equitrans proposes to cross W-BB7 via open-cut ditch with timber mat crossing. During open-cut of the wetland, the Project will impact approximately 0.55 acres of PEM wetland during construction. Impacts from construction include temporary disturbance to soils and hydrology. Topsoil will be separated during construction and then replaced to original horizon and elevation in the wetland area. This will allow the direct, volume, and rate of flow to be restored to pre-construction conditions and will promote the re-establishment of hydrophytic vegetation. The disturbed PEM wetland will be allowed to revert back to its original PEM wetland functions once H-318 Pipeline construction is complete. No permanent fill in the wetland is proposed; consequently, no loss of wetland area would result from construction or operation of the proposed pipeline.

Equitrans will adhere to permit conditions contained within applicable federal and state permits. Prior to construction, associated BMPs shall be installed and functional. BMPs will be installed at the edge of the work area, as necessary, to prevent siltation into the wetland areas outside of the proposed crossing location. BMPs will be maintained for the duration of construction activities. Wetland boundaries will be clearly marked prior to construction activities.

No streams are located within the Project area. Therefore, no impacts to streams during the wetland crossing are anticipated.

a. Food chain production

W-BB7 has been assessed to have some potential for food chain production. Growth of herbaceous plants within the emergent wetland constitutes the food chain base that supports primary consumers such as invertebrates and small mammal herbivores. Secondary and tertiary consumers, including both omnivores and carnivores, are supported by the diversity and abundance of prey items in the wetland ecosystem.

During construction, vegetation will be removed and the animals displaced. In the case of less mobile species, mortality of some individuals could result from encountering construction equipment. Until restoration of the wetland crossing area is completed, the food chain production in the Project area will be altered. This area is expected to be restored to original food chain production with the restoration of vegetation, which will occur gradually within the next one or two growing seasons.

b. General habitat

1. Nesting

During construction, the timing of the work will determine the extent of disturbance on nesting. In particular, vegetation clearing during the nesting season could result in destruction of nests, if any are located in the area of the proposed earthwork and grading. There was no direct evidence of bird or mammal populations using W-BB7 for nesting. The potential for nesting, and nest loss, is considered to be greatest in wooded (forested and shrub) areas, and lowest within the grass lands and open fields.

W-BB7 is located in an agricultural field; therefore, the potential for nest loss is considered low in this area.

2. Spawning

No spawning grounds were present within the Project area as there were no streams identified in this area.

The Project would not have adverse impacts to spawning.

3. Rearing

Because W-BB7 is not considered to have a high potential for wildlife rearing, the impact to wildlife rearing are expected to be negligible. Wildlife rearing in adjacent areas may be temporarily affected or displaced to other areas during active construction as a result of human activity and noise at the location of earthwork and grading activities; however, sufficient areas are available for wildlife to temporarily relocate.

The Project would not have adverse impacts on rearing.

4. Resting

Resting areas may be temporarily impacted by the Project earth disturbances. The Project is not anticipated to have a significant impact on resting as there is sufficient suitable habitat adjacent to the Project area.

The Project would not have significant adverse impacts on resting.

5. Migration

W-BB7 is a small, relatively isolated wetland within an agricultural field and is not considered to be a key resting location for birds on route to breeding or wintering grounds. The Project is not anticipated to significantly fragment habitat or have impacts on migration patterns.

The Project would not have adverse impacts on migration.

6. Feeding

Construction activities would, in the short-term, limit the capacity of W-BB7 to serve as a feeding area. Excavation of the wetland habitat would temporarily remove primary production, causing wildlife species to seek other areas to feed. However, adjacent areas should supply temporary feeding areas for displaced wildlife.

The Project would have a minimal impact on feeding.

7. Escape Cover

The Project would have a negligible effect on escape cover. Wetland impacts may eliminate minor amounts of insect, amphibian, and small mammal cover.

With suitable escape cover available in the adjacent woodlands and fields, the Project would not have an adverse impacts on escape cover.

8. Other

The Project would not affect any other observed habitat type.

c. Habitat for Threatened and Endangered Plant and Animal Species

Equitrans conducted a Pennsylvania Natural Diversity Index (PNDI) Environmental Project Review screening for the Project. The PNDI screening did not indicate that any Pennsylvania listed species of special concern (SOSC) occur within the Project area. No identified unique, sensitive, or protected vegetation areas or animal species would be impacted by the Project.

The Project would not have adverse impacts on Threatened and Endangered Plant and Animal Species.

d. Environmental study areas

1. Sanctuaries

   There are no designated sanctuaries known to occur within or near the Project, and none are expected to be impacted by the proposed Project.

2. Refuges

   There are no designated wildlife refuges known to occur within or near the proposed Project, and none are expected to be impacted by the proposed Project.

B.2 Water Quantity and Streamflow

a. Natural drainage patterns

Construction of the Project is not expected to affect natural drainage patterns. There are no stream relocations, enclosures, or channel deepening/dredging activities proposed in conjunction with the proposed earthwork and grading. Upon completion of pipeline construction, all topsoil disturbed during construction will be replaced to original horizons and elevations. This will restore the direction, volume, and rate of flow to pre-construction conditions and will promote re-establishment of hydrophytic vegetation. Equitrans will implement the wetland construction and restoration procedures outlined in the Project Erosion and Sedimentation (E & S) Plan, which will prevent changes to the natural drainage patterns of W-BB7.

b. Flushing characteristics

No streams were identified within the Project area. W-BB7 does not contain surface water that supports continuous flow due to its relatively isolated hydrologic nature; therefore, the wetland is considered to have no flushing ability.

The Project would not have adverse impacts on flushing ability.

c. Current patterns

No streams were identified within the Project area. There are no sustained currents present within the Project area.

The Project would not have adverse impacts on current patterns.

d. Groundwater discharge for baseflow

No streams were identified within the Project area. Based on the local topography and distance from down gradient watercourses, there is little potential for downgradient streams to be substantially augmented by groundwater discharge from this wetland. However, no studies have been conducted to quantify the contribution of groundwater discharge to the baseflow of the streams located adjacent to the Project property.

Earthwork and grading at the proposed Project is not expected to affect groundwater discharge that may be important for supporting stream baseflow.

e. Natural recharge area for ground and surface waters

W-BB7 is unlikely to be a natural recharge area for groundwater; however, it may act as a recharge area for surface waters. The Project is not expected to alter natural drainage patterns, flushing characteristics, or current patterns, and does not involve the addition of new impervious surfaces. Therefore, long-term impacts to natural recharge of surface waters as a result of the Project are unlikely.

f. Storm and floodwater storage and control

Earthwork and grading at the proposed Project are not expected to impact either natural drainage patterns or flushing characteristics. Construction will not result in a loss of wetland area and will not involve construction in floodplains or floodways. Therefore, the Project is not expected to negatively impact the ability of streams or wetlands to either store or control storm and flood waters. Equitrans has developed a Stormwater Management Plan to prevent impacts to stormwater discharges and control.

B.3 Water Quality

a. Preventing pollution

To prevent pollution Equitrans will implement pollution prevention procedures outlined in the Project E & S Plan for protection of water quality during Project construction activities (Tab 12). In addition, Equitrans will adhere to all provisions of the EEP Erosion and Sedimentation Control Plan General Permit 2 (ESCGP-2) to minimize pollution from erosion and sedimentation. It is anticipated that the EEP ESCGP-2 will be submitted to the Allegheny County Conservation District in March 2016. Earthwork and grading at the proposed Project is not expected to affect any potential pollution prevention capabilities of W-BB7.

b. Sedimentation control and patterns

Procedures used to control erosion and sedimentation into streams and wetlands during construction activities are provided in the Project E & S Plan (Tab 12). In addition, Equitrans will adhere to all

provisions of the EEP ESCGP-2 to minimize pollution from erosion and sedimentation. It is anticipated that the EEP ESCGP-2 will be submitted to the Allegheny County Conservation District in March 2016. After construction is completed, wetland contours will be restored, pre-construction drainage patterns will be re-established, and the wetland will be seeded and revegetated. Implementation of the Project E & S Plan and compliance with the EEP ESCGP-2 permit will ensure that impacts associated with erosion and sedimentation are minimized or avoided.

c. Salinity distribution

Only one freshwater wetland was observed during field surveys at the Project area. There was no evidence of naturally occurring or human-induced salinity associated with W-BB7.

d. Natural water filtration

The removal and disturbance of vegetation during construction will temporarily reduce the natural water filtration ability along the ROW. However, in accordance with the ESCGP-2 and the Federal Energy Regulatory Commission (FERC) Plans and Procedures, erosion and sedimentation filtration devices will be implemented during construction to provide adequate water filtration to minimize stormwater pollution. After installation of the pipeline, the ROW will be seeded and revegetated, restoring permanent vegetation and natural water filtration for the long term. In addition, the size and dimensions of W-BB7 will not be altered. Therefore, the Project is not expected to have a long-term impact on the natural water filtration capabilities of W-BB7 or the surrounding area.

B.4 Recreation

a. Game species

Temporary impacts to W-BB7 will not substantially affect game species or their habitat. There are additional habitats in the vicinity of W-BB7 in which game species can attain the same resources present at W-BB7. There are no game lands present at the Project area.

b. Non-game species

Recreational activities involving non-game species are not expected to be adversely affected by the Project. Recreational activities involving non-game species are likely limited at W-BB7, but construction impacts will be limited to the periods of active construction, when recreational activities will be precluded for safety reasons. After pipeline construction and restoration, there should be no impacts on recreational activities involving non-game species.

c. Fishing

There are no streams in the Project area. No streams in the vicinity of the Project area have been designated as Naturally Reproducing Trout Streams, Approved Trout Stocked Waters, Cold Water Fisheries (CWF), Exceptional Value (EV), High Quality Trout Stocked Fisheries (HQ-TSF), or Trout Stocked Fisheries (TSF). Temporary construction activity in W-BB7 would not result in adverse impacts to recreational fishing activities downslope of the proposed construction.

d. Hiking

No named or identified trails are present in the Project area. The Project is not anticipated to have an impact on named trails.

e. Observation (plant/wildlife)

Noise and activities associated with construction are expected to result in wildlife avoidance of the Project area, so impacts to wildlife observation are expected to be minor and limited to the time needed for construction. The ROW would be restored and revegetated and wildlife would be expected to return to W-BB7 upon completion of construction and restoration activities; therefore, no long-term impacts to wildlife observation are expected.

f. Other

The Project will not affect other functions, values, or uses of surface waters or wetlands identified within the Project area.

B.5 Upstream and Downstream Property

The proposed Project will not cause degradation of water quality, alter flow volumes, or change the direction of flow. In addition, the proposed Project is not expected to interfere with the normal riparian rights of upstream/downstream landowners.

B.6 Other Environmental Factors

There were no other environmental factors of concern identified during the field surveys or associated research activities conducted for the proposed Project.

C. ENVIRONMENTAL IMPACTS ON ADJACENT LAND AND WATER RESOURCES

Indirect impacts to adjacent lands or water resources resulting from earth work activities for the proposed Project would be temporary and limited to the time of construction. Environmental impacts to adjacent lands and water resources would be minimized through the implementation of the Project E & S Plan (Tab 12). No additional indirect impacts from the Project are anticipated.

D. CUMULATIVE IMPACTS

Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of one action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other action."

Equitrans has designed the Project to minimize unavoidable impacts. The Project also utilizes existing roads for access where possible, reducing the need for temporary road crossings of wetlands outside the pipeline ROW. Following construction, Equitrans proposes to restore disturbed areas as close as reasonably practicable to their original contours and to replant those areas with wildlife safe native seedmix. Maintenance of the permanent ROW will be completed by following the FERC Upland Erosion Control, Revegetation, and Maintenance Plan.

The primary impacts on Wetland W-BB7 during ongoing operation of the proposed pipeline would be associated with routine ROW maintenance. Equitrans plans to implement the construction methods in accordance with the condition outlined in the FERC Wetland and Waterbody Construction and Mitigation Procedures and the FERC Upland Erosional Control, Revegetation and Maintenance Plan. Construction and operation of the proposed Project would result in short-term (construction) and long-term (operation) temporary impacts on W-BB7. The short-term impacts such as soil or sediment disturbance would dissipate over a period of weeks, while longer term impacts would persist for months or years. Outside the permanent ROW, Equitrans would allow the portion of W-BB7 affected by the crossing to revert to pre-construction conditions. Equitrans would maintain the remaining areas in an herbaceous state within a 50-foot wide corridor reserved for operation and maintenance activities.

Temporary impacts would include runoff from construction areas and vegetation removal. The most significant potential impact of pipeline construction on surface waters would result from a temporary increase in sediment loading to surface waters, or in-stream sediment loading due to channel/floodplain instability resulting from temporary shifts in erosion/deposition patterns. Impacts of the Project on surface waters would be minimal and temporary. W-BB7 is approximately 1,200 feet northwest of Kelly Run, the nearest identified stream downslope, and the Project E & S Plan will ensure minimal impacts to Kelly Run and the portions of W-BB7 located outside of the Project LOD. Once restoration to pre-construction contours is complete and vegetation is reestablished, there will be no further impact to wetlands and waterbodies.

Equitrans has coordinated with county and township government officials to inform them of the Project as part of Act 14 Notification requirements associated with the environmental permit applications. Through these efforts, local officials are invited to express concerns regarding the Project, including concerns

regarding cumulative impacts of the proposed Project when combined with other projects that may be planned or ongoing.

Although a list of all of the recent, ongoing, or future proposed projects in the vicinity of the proposed Project has not been compiled, with the increased development of shale gas in recent years, the number of other recent, ongoing, and/or proposed gas development and pipeline expansion projects have been increasing in Pennsylvania. It is fair to assume that other projects potentially affecting streams and wetlands in Pennsylvania would include energy development and energy transportation projects (including other new pipelines), road/bridge infrastructure repair and expansion projects, and land development activities associated with residential and commercial developments. However, other proposed projects in the area would be subject to similar environmental permitting requirements and BMP implementation for approval of construction and operation, and the collective effects of these projects on surface wetland and waterbody resources are expected to be minor. Therefore, construction and operation of the Project would not contribute to cumulative long-term impacts on waterbodies and wetlands within the region.

E. OTHER WATER OBSTRUCTIONS OR ENCROACHMENTS

All water obstruction and stream encroachments that require a permit to construct the proposed Project are described in this Environmental Assessment, the associated Chapter 105 Water Obstruction and Encroachment Joint Permit Application submission for the Project, the General Permit submission for all other impacts associated with the EEP other than the Project, and 401 Water Quality Certification submission. No additional impacts are anticipated to occur as a result of this Project.

TABLE

Table 1
Equitrans Expansion Project Wetland W-BB7 Crossing- Allegheny County
Impact Summary Table

Waters Name	Stream/ Wetland Type	Applicable Permits	Latitude (N)			Longitude (W)			PA Code 25 Chapter 93 Designated Use	Temporary Stream Impact			Installation Method***	Wetlands Onsite	Wetland Impact
			DD	MM	SS	DD	MM	SS		Length (ft)*	Width (ft)**	Area (ft^2)		Area (ft^2)	Area (ft^2)
W-BB7	PEM	JP	40	13	51.07	79	56	11.39	WWF	N/A	N/A	N/A	open cut trench and timber mat crossing	87,132	23,961
									Project Totals:	**0**	**0**	**0**	**sf**	87,132	23,961
													acre	2.00	0.55

Note:

* As measured transversely from top of bank to top of bank

** As measured along centerline of stream from where water is directed out of the stream to where it is returned to the stream

*** All open trench piping will be installed to a depth of 36 inches, HDD pipe depths will vary based on subsurface geology

JP - Joint Permit

N/A - not applicable

Tab 12

Erosion and Sediment Control Plan

and Concurrent Review Request

PROJECT BACKGROUND AND ESCP CONCURRENT REVIEW REQUEST

Project Background

The proposed Equitrans, LP (Equitrans) Expansion Project (EEP) is located in Allegheny, Washington, and Greene Counties, Pennsylvania, and Wetzel County, West Virginia. The EEP is designed to transport natural gas from the northern portion of the Equitrans system south to the interconnection with Mountain Valley Pipeline, LLC's proposed Mountain Valley Pipeline, as well as to existing interconnects with Texas Eastern Transmission, LP and Dominion Transmission, Inc. The EEP will also increase system reliability, efficiency, and operational flexibility for the benefit of Equitrans customers.

The portion of the EEP within Allegheny County proposes to install one 20" natural gas pipeline (H-318 Pipeline) approximately 3 miles long within a 100' construction right-of-way (ROW) and 50' permanent ROW. The proposed H-318 Pipeline will generally run east-west and will be located in Forward Township, Allegheny County, and Union Township, Washington County, Pennsylvania. A Pennsylvania Chapter 105 General Permit Application and a 401 Water Quality Certification Application were submitted to the Allegheny County Conservation District (ACCD) for the proposed H-318 Pipeline on October 27, 2015 and are currently under review. The ACCD subsequently requested a Chapter 105 Joint Permit Application for the portion of the proposed H-318 Pipeline that crosses Wetland W-BB7 (W-BB7), located at 614 McVicker Lane in Forward Township, Allegheny County, Pennsylvania. An Erosion and Sediment Control General Permit (ESCGP-2) was submitted to ACCD on March 28, 2016 (ESG 00003160001). A Project E & S Plan has been included in this tab for review (Tab 12).

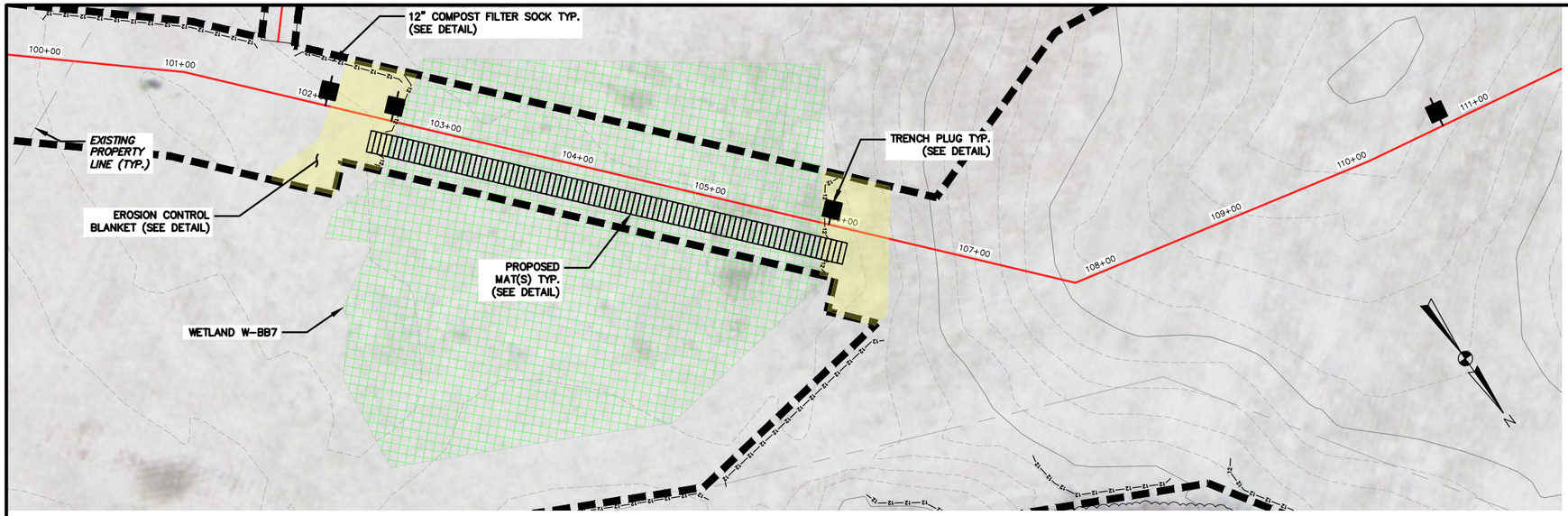
In addition, a Submerged Land License Agreement request was submitted to the Pennsylvania Department of Environmental Protection on November 11, 2015 for the H-318 Pipeline Monongahela River crossing.

Equitrans submitted an application on October 27, 2015 seeking a Certificate of Public Convenience and Necessity from the Federal Energy Regulatory Commission (FERC) Docket No. CP16-13-000 pursuant to Section 7(c) of the Natural Gas Act authorizing it to construct and operate the proposed EEP.

Proposed Project Activities

The W-BB7 Crossing Project (Project) is the portion of the proposed H-318 Pipeline that crosses W-BB7 at 614 McVicker Lane (Tax Parcel 1740-P-00172-0000-00). The Project will have temporary impacts to approximately 0.55 acres of W-BB7 during pipeline construction and installation activities. The temporary construction ROW will be reduced to 75-ft in width for the crossing of Wetland BB-7. Following construction, Equitrans proposes to restore disturbed areas as close as reasonably practicable to their original contours and to reseed those areas. The disturbed PEM wetland will be allowed to revert back to its original PEM wetland functions once pipeline construction is complete. Refer to Tab 18 for additional information of the restoration of Wetland W-BB7.

Equitrans is seeking a Chapter 105 Water Obstruction and Encroachment Joint Permit approval for the proposed Project, authorizing Equitrans to temporarily impact 0.55 acres of W-BB7, a 2.0 acre palustrine emergent (PEM) wetland.



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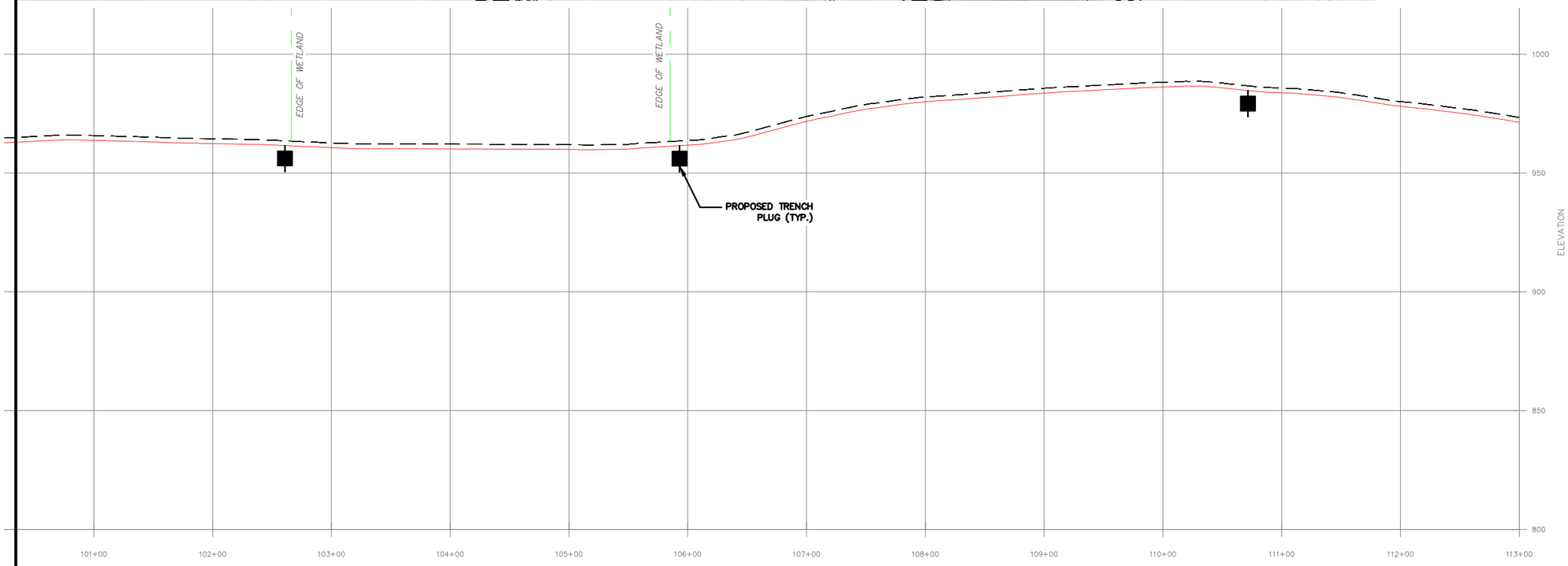
SCALE IN FEET



H-318 PROFILE

PROFILE

0 100 200

SCALE IN FEET

HORIZONTAL SCALE IN FEET

0 50 100

SCALE IN FEET

VERTICAL SCALE IN FEET

LEGEND

- EXISTING CONTOUR (INDEX)
- EXISTING CONTOUR (INTERMEDIATE)
- PROPOSED CONTOUR (INDEX)
- PROPOSED CONTOUR (INTERMEDIATE)
- PROPOSED ACCESS ROAD CENTERLINE
- EXISTING PROPERTY LINE
- MUNICIPAL BOUNDARY
- EXISTING GAS LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING STREAM
- ASSUMED LIMITS OF FLOOD WAY
- FEMA 100-YEAR FLOODAY
- EXISTING WETLAND
- SOIL TYPE BOUNDARY AND SOIL TYPE LABLE
- EROSION CONTROL BLANKET
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED COMPOST FILTER SOCK (REFER TO SPECIFIC SIZE ON PLAN SHEET)
- ORANGE CONSTRUCTION SAFETY FENCE
- PROPOSED WATERBAR
- PROPOSED TRENCH PLUG
- PROPOSED CULVERT WITH OUTLET PROTECTION
- PROPOSED ROCK CONSTRUCTION ENTRANCE

REVISIONS:

NO.:	DATE:	DWN.:	CHKD.:	APPD.:	DESCRIPTION:

EQUITRANS EXPANSION PROJECT

WETLAND W-BB7 CROSSING

EQUITRANS, L.P.
625 LIBERTY AVE, SUITE 1700,
PITTSBURGH, PENNSYLVANIA 15222

I DO HEREBY CERTIFY TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THE EROSION AND SEDIMENT CONTROL AND PCSM/SITE RESTORATION PLAN AND POST CONSTRUCTION BMPS ARE TRUE AND CORRECT, REPRESENT ACTUAL FIELD CONDITIONS AND ARE IN ACCORDANCE WITH THE 25 PA. CODE CHAPTERS 78 AND 102 OF THE DEPARTMENT'S RULES AND REGULATIONS. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT.

DRAWN BY:	JH
CHECKED BY:	HS
APPROVED BY:	HT
DATE:	3/16/16
SCALE:	AS NOTED

REVISION

SHT. NO. 1 OF 1

Tab 13

Hydrologic and Hydraulic Analysis

HYDROLOGIC & HYDRAULIC ANALYSIS

The Wetland W-BB7 (W-BB7) Crossing Project (Project) at 614 McVicker Lane (Tax Parcel 1740-P-00172-0000-00), Forward Township, Allegheny County, Pennsylvania does not alter the flow volumes, direction, or geomorphology of any of the streams on the property. The anticipated temporary impacts to W-BB7 will not result in the creation of impermeable surfaces that would result in a change in the existing 100-year frequency flood discharges. Similarly, the Project will not alter the flood storage capacity of any floodways as there will be no project activities, and therefore no additional/new fill placement, located within the FEMA floodways (Tab 14, Attachment C). W-BB7 is a palustrine emergent wetland adjacent to a non-relatively permanent waterbody. No jurisdictional waterbodies were identified in the vicinity of W-BB7; however, W-BB7 likely has an indirect hydrologic connection to Kelly Run, located approximately 1,200 feet southeast and downslope of W-BB7.

The hydrology for W-BB7 is likely supported by precipitation, localized microtopographic run-off, and groundwater input. Due to the relative topographic isolation on an upper hill slope, distance from any identified jurisdictional watercourses, and its lack of direct hydrologic connectivity to any other water resource, it is anticipated that the temporary construction impacts associated with the Project would not negatively impact the surrounding hydrology.

Accordingly, further coordination regarding this requirement is not applicable.

Tab 14

Stormwater & Floodplain Management Analysis and Consistency Letter

TETRA TECH

June 23, 2016

Forward Township
Board of Supervisors
1000 Golden Circle
Elizabeth, Pennsylvania 15037

Reference: **Equitrans LP – Equitrans Expansion Project Wetland W-BB7 Crossing Floodplain/Stormwater Management Program Consistency Request**

Dear Supervisors:

On behalf of Equitrans, LP (Equitrans), Tetra Tech, Inc. (Tetra Tech) is in the process of providing data to the Pennsylvania Department of Environmental Protection (PA DEP), to obtain a Chapter 105 Water Obstruction and Encroachment Permit for the Equitrans Expansion Project Wetland W-BB7 Crossing Project.

The Project is part of the Equitrans Expansion Project (EEP). The proposed EEP is located in Allegheny, Washington, and Greene Counties, Pennsylvania, and Wetzel County, West Virginia. The EEP is designed to transport natural gas from the northern portion of the Equitrans system south to the interconnection with Mountain Valley Pipeline, LLC's proposed Mountain Valley Pipeline, as well as to existing interconnects with Texas Eastern Transmission, LP and Dominion Transmission, Inc. The EEP will also increase system reliability, efficiency, and operational flexibility for the benefit of Equitrans customers. The portion of the EEP within Allegheny County proposes to install one 20" natural gas pipeline (H-318 Pipeline) approximately 3 miles long within a 100' construction right-of-way (ROW) and 50' permanent ROW. The proposed H-318 Pipeline will generally run east-west and will be located in Forward Township, Allegheny County, and Union Township, Washington County, Pennsylvania. A Pennsylvania Chapter 105 General Permit Application and a 401 Water Quality Certification Application were submitted to the Allegheny County Conservation District (ACCD) for the proposed H-318 Pipeline on October 27, 2015. The ACCD subsequently requested a Chapter 105 Joint Permit Application for the portion of the proposed H-318 Pipeline that crosses Wetland W-BB7 (W-BB7), located at 614 McVicker Lane in Forward Township, Allegheny County, Pennsylvania.

The W-BB7 Crossing Project (Project) is the portion of the proposed H-318 Pipeline that crosses W-BB7 at 614 McVicker Lane. The Project will have temporary impacts to approximately 0.55 acres of W-BB7 during pipeline construction and installation activities. No impacts to other waterbodies are anticipated as part of the Project. Upon completion of the pipeline construction, all disturbed areas within the limit of disturbance will be restored to a meadow in good condition and W-BB7 will be allowed to revert back to its original wetland functions. As a result of restoring the pipeline right-of-way, associated workspaces, and temporary access roads to a meadow in good condition and maintaining pre-construction drainage patterns, there will be no increase in stormwater runoff rate or volume attributed to these areas.

As part of the permit approval process, we and Equitrans respectfully request your review of the Project's consistency with local Floodplain Management and Storm Water Management programs, and a letter confirming the Project's consistency with these programs (as applicable). A consistency letter from the Township in regard to the local Floodplain Management and Storm Water Management Program is required pursuant to 25 Pennsylvania Code, Chapter 105 Regulations (Sections 105.14(b)(9), 105.13(e)(1)(v-vi)), and under the Stormwater Management Act (32 P.S.,§§ 680.1—680.17), respectively. To save you valuable time, a draft of the letter format is enclosed as Attachment A. This draft may be retyped on municipal letterhead, signed and mailed back to Tetra Tech. Alternatively, please print the form below (at the bottom of this letter), provide a signature and return this letter to the letterhead address.

Tetra Tech
661 Andersen Drive, Pittsburgh, PA 15220-2700
Tel 412.921.7090 Fax 412.921.4040 www.tetratech.com

TETRA TECH

The following attachments are included for your review:

- USGS Project Location Map which shows the Project location (Attachment B).
- FEMA Site Map which shows the location of the property boundary and Project area in relation to the Federal Emergency Management Agency (FEMA) flood zones (Attachment C).[1]

As shown, no aboveground facilities or new access roads are proposed in FEMA designated floodways or 100-year floodplains. The Project would not be located in designated FEMA Special Flood Hazard Areas.

The Project is located within Forward Township, Allegheny County. Allegheny County does not have a Countywide Act 167 Stormwater Management Plan; instead, the county is subdivided into Watershed Study Areas. Forward Township is located in the Monongahela River Watershed Study Area. Forward Township has not yet adopted the Monongahela River Watershed Act 167 Stormwater management Plan. The Project will be designed, constructed, and operated in compliance with all applicable provisions of 25 Pennsylvania Code, Chapter 102 Regulations (Erosion and Sediment Control and Post Construction Stormwater Management Best Management Practices including the implementation of Antidegradation Best Available Combination of Technologies (ABACT methods) where applicable, to maintain the designated use of receiving waters in the area and no increase in stormwater runoff, rate or volume would occur.

If you have further questions or require additional information, please do not hesitate to contact Preston Smith at (412) 921-8167 or via email at Preston.Smith@TetraTech.com.

Thank you for your timely response to this matter.

Sincerely,

Preston Smith
Manager, Wetlands and Ecological Services Department
Tetra Tech, Inc.

Enclosures: Stormwater and Floodplain Analyses, Draft Consistency Form/Letter, USGS Project Location Map, FEMA Site Map

[1] Note: Areas shown as a "100-Year Floodplain – No Base Flood Elevation/Base Flood Elevation determined (Zone A/Zone AE)" are designated Special Flood Hazard Areas (SFHA) subject to flooding by the 1% annual chance flood.

Forward Township
1000 Golden Circle
Elizabeth, Pennsylvania 15037

Preston Smith
Tetra Tech, Inc.
661 Andersen Drive,
Foster Plaza Bldg No. 7
Pittsburgh, PA 15220

Reference: **Equitrans LP – Equitrans Expansion Project Wetland W-BB7 Crossing Floodplain/Stormwater Management Program Consistency Request**

FLOODPLAIN CONSISTENCY:

____ No Plan **____Project is Consistent** **____Project is NOT Consistent (Explain Below)**

_____
_____
_____

STORMWATER CONSISTENCY:

____ No Plan **____Project is Consistent** **____Project is NOT Consistent (Explain Below)**

_____
_____
_____

_____ _____
Municipal Official (signature & title) Printed Name Date

[Municipal Letterhead]

[date]

Tetra Tech Inc.
661 Andersen Drive,
Foster Plaza Bldg No. 7
Pittsburgh, PA 15220

Reference: Equitrans LP, Equitrans Expansion Project Wetland W-BB7 Crossing

Dear Sir/Madam:

Please be advised that [Please type the appropriate statement from the following list.]

[The Township does not have a Storm Water Management Plan.]
[The Township has a Storm Water Management Plan. However the above mentioned project is not located in that boundary and therefore, a Storm Water Management Analysis is not required for this project.]

[The Township has a local Storm Water Management Plan effective in the project area. After studying the proposed activity, it was found that the above referenced project is consistent with the local Storm Water Management Plan.]

In regard to the Floodplain Management Plan, [please type the appropriate statement from the following list.]

[There is no FEMA Flood Insurance Study Performed for the Township.]
[The above mentioned project is not located in the boundary of the FEMA Flood Insurance Study and therefore this project has no effects on the Floodplain Management Program effective in the Township.]

[The proposed activity for the above referenced project has been studied. It is consistent with the FEMA Floodplain Management Program effective in the Township.]

Signature: _____
Title: _____

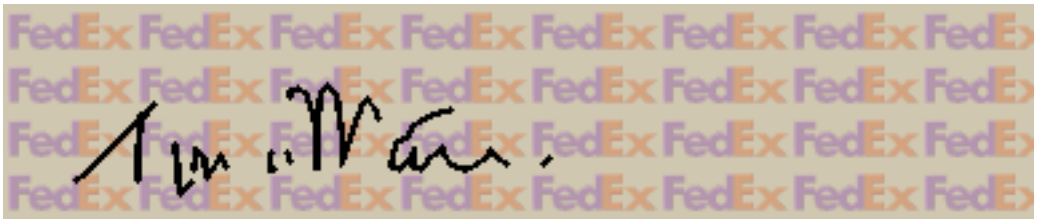
June 27,2016

Dear Customer:

The following is the proof-of-delivery for tracking number 676115098407.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	M.MARICINI	**Delivery location:**	BOARD OF SUPERVISORS ELIZABETH, PA 15037
Service type:	FedEx Priority Overnight	**Delivery date:**	Jun 27, 2016 09:21
Special Handling:	Deliver Weekday Adult Signature Required		



Shipping Information:

Tracking number:	676115098407	**Ship date:**	Jun 24, 2016
		Weight:	0.5 lbs/0.2 kg

Recipient:
FORWARD TOWNSHIP
BOARD OF SUPERVISORS
1000 GOLDEN CIRCLE
ELIZABETH, PA 15037 US

Shipper:
TETRA TECH -
TETRA TECH, INC.
661 ANDERSEN DRIVE
FOSTER PLAZA 7
PITTSBURGH, PA 15220 US

Reference
Forward TWP/H Trexler
Purchase order number:
212C-PB-00176
Department number
.212C-PB-00176

Thank you for choosing FedEx.

STORMWATER AND FLOODPLAIN MANAGEMENT ANALYSIS

STORMWATER MANAGEMENT ANALYSIS

The Equitrans Expansion Project (EEP) Wetland W-BB7 (W-BB7) Crossing Project (Project) has been designed to satisfy Pennsylvania's stormwater management requirements and has incorporated best management practices identified in the Pennsylvania Stormwater Best Management Practices (BMP) Manual. Stormwater will be managed during construction activities in accordance with the Project Erosion and Sedimentation (E & S) Plan set forth for the EEP. The Project does involve temporary impacts to a wetland resource (W-BB7) from earthwork and grading. The earth work and grading for the Project are designed to manage stormwater runoff in accordance with the Pennsylvania Stormwater BMP Manual and E & S Plan for the EEP.

FLOODPLAIN MANAGEMENT ANALYSIS

As presented in the Environmental Assessment (Tab 11), the proposed Project is not located within floodplains or floodways delineated on the Federal Emergency Management Agency (FEMA) Map included as Attachment C of this tab. The FEMA Map illustrates the Project limit of disturbance (LOD) and parcel boundary in relation to the FEMA mapped floodplains and floodways (Tab 14, Attachment C). The Project will not involve any construction activities within the mapped floodways nor will the Project result in any change in the storage capacity of the floodways.

Coordination with local municipalities has been initiated through the Act 14 notification process. As part of that process, the municipalities will notify the Pennsylvania Department of Environmental Protection (PA DEP) if they have any concerns regarding the proposed Project and their comprehensive plans and/or ordinances.

As part of the permit approval process, we and Equitrans respectfully request your review of the Project's consistency with local Floodplain Management and Storm Water Management programs, and a letter confirming the Project's consistency with these programs (as applicable). A consistency letter from the Township in regard to the local Floodplain Management and Storm Water Management Program is required pursuant to 25 Pennsylvania Code, Chapter 105 Regulations (Sections 105.14(b)(9), 105.13(e)(1)(v-vi)), and under the Stormwater Management Act (32 P.S.,§§ 680.1—680.17), respectively.

End of Line
Lat: 40° 15' 15.276" N
Lon: 79° 57' 45.004" W

Start of Line
Lat: 40° 14' 27.145" N
Lon: 79° 55' 16.615" W

Wetland
W-BB7

Equitrans Expansion Project

N

1:24,000

0 2,000 4,000 Feet

EQUITRANS℠

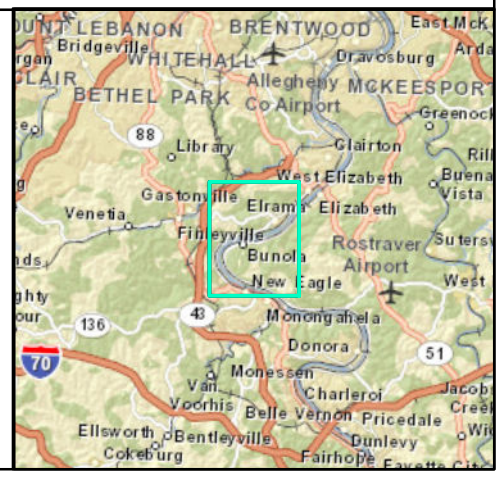
Attachment B
USGS Project Location Map
Washington & Allegheny County, PA

March 2016

Data Sources: Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Parcel Boundary



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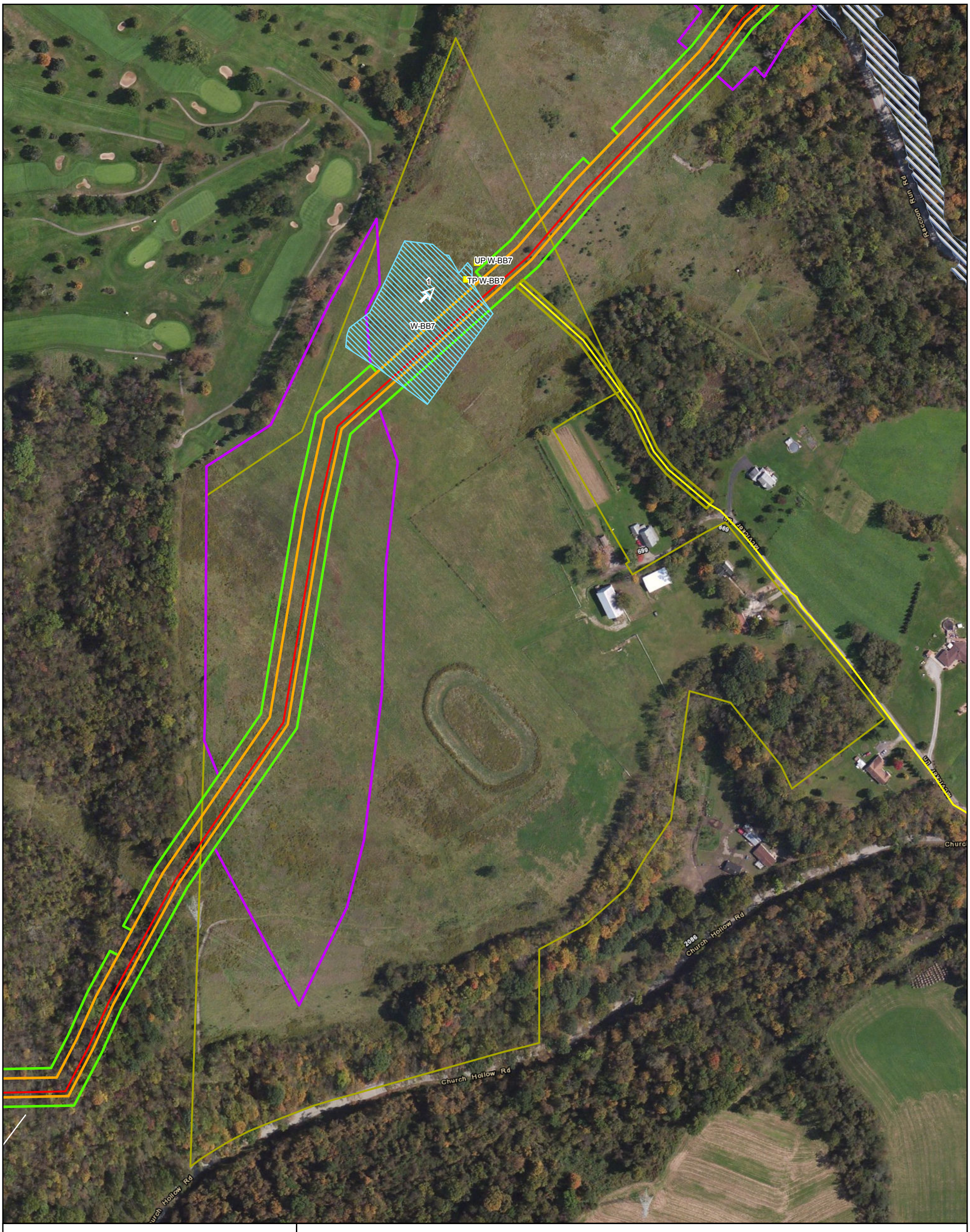


EEP Wetland W-BB7 Crossing

N

1:3,000

0 200 400 Feet

EQUITRANS SM

Attachment C
FEMA Flood Plain Map
Allegheny County, PA

March 2016

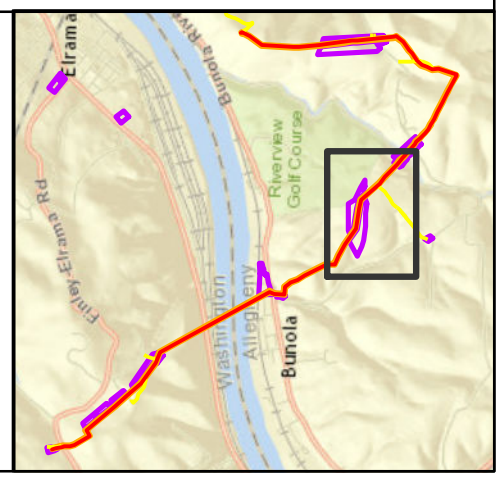
Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Parcel Boundary
- Test Pit
- Stream

Wetland

- PEM
- Photo Location
- FEMA 100 Year Flood Plain



Document Path: P:\GIS\EQTMapDocs\eep_pa_wb77_detail.mxd

Tab 15

Risk Assessment

RISK ASSESSMENT

No streams and one wetland (Wetland W-BB7 [W-BB7]) were identified within the W-BB7 Crossing Project (Project) area. W-BB7 is a palustrine emergent wetland adjacent to a non-relatively permanent waterbody. While no jurisdictional waterbodies were identified adjacent to W-BB7, this wetland likely has an indirect hydrologic connection to Kelly Run, located approximately 1,200 feet southeast and downslope of W-BB7. The hydrology for W-BB7 is likely supported by precipitation, localized microtopographic run-off, and groundwater input. Due to the relative topographic isolation on an upper hill slope, distance from any identified jurisdictional watercourses, and its lack of direct hydrologic connectivity to any other water resource, it is anticipated that there is little potential for downgradient streams to be substantially augmented by groundwater discharge from W-BB7. The proposed Proejct will not result in an increase in peak runoff rates or flood elevations; therefore, no public property or land uses will be adversely affected. Therefore, further analysis regarding the degree of increased risk to life, property, and the environment due to the anticipated wetland impact is not warranted.

Accordingly, further coordination regarding this requirement is not applicable.

Tab 16

Professional Engineer’s Seal and Certification

Chapter 105 Joint Permit Application
Allegheny County, Pennsylvania
Application ID: _____
APS No.: _____
June 2016

Prepared for:
Pennsylvania Department of Environmental Protection
Southwestern Regional Office
400 Waterfront Drive
Pittsburgh, Pennsylvania, 15222

Prepared by:
Tetra Tech, Inc.
661 Andersen Drive, Foster Plaza Bldg. 7
Pittsburgh, Pennsylvania 15220
(412) 921-7090

Prepared by: _____
Henry Schumacher
Tetra Tech, Inc.

Approved by: _____
Preston Smith, M.S.
Tetra Tech, Inc.

"I, David Wallner, do hereby certify pursuant to the penalties of 18 Pa. C.S.A Sec. 4904 to the best of my knowledge, information and belief, that the information contained in the accompanying plans, specifications and reports has been prepared in accordance with accepted engineering practice, is true and correct, and is in conformance with Chapter 105 of the rules and regulations of the Department of Environmental Protection."

_____
David Wallner, P.E.
Professional Engineer No. PE-083991

Tab 17

Alternative Analysis

ALTERNATIVE ANALYSIS

Equitrans, LP (Equitrans) Equitrans is seeking a Chapter 105 Water Obstruction and Encroachment Joint Permit approval for the proposed Wetland W-BB7 (W-BB7) Crossing Project (Project), authorizing Equitrans to temporarily impact 0.55 acres of W-BB7, a 2.0 acre palustrine emergent (PEM) wetland. Past and present land use of the Project area is agriculture. Future land use of the Project area will remain agriculture upon completion of the pipeline installation. Relevant topographic features including streams, wetlands, roads, pipelines, structures, utility lines, fences, and other significant items in the Project limit of disturbance (LOD) have been illustrated on the Plan Sheets, where applicable (Tab 7).

Alternative Analysis

Equitrans is committed to reducing and minimizing impacts to waterbodies in general, to the extent practicable. However, because this is a linear project, total avoidance of all wetlands and streams is not possible or practicable. The Project will impact W-BB7 during construction activities. The Project utilizes existing roads for access where possible, reducing the need for temporary road crossings of wetlands outside the pipeline right-of-way (ROW). The temporary construction ROW will be reduced to 75-ft in width for the crossing of Wetland W-BB7. Following construction, Equitrans proposes to restore disturbed areas as close as reasonably practicable to their original contours and to reseed those areas. The disturbed PEM wetland will be allowed to revert back to its original PEM wetland functions once pipeline construction is complete. No permanent fill in the wetland is proposed; consequently, no loss of wetland area would result from construction or operation of the proposed pipeline. Maintenance of the permanent ROW will be completed by following the FERC Upland Erosion Control, Revegetation, and Maintenance Plan.

Tab 18

Wetland Mitigation

COMPENSATORY WETLAND MITIGATION

Equitrans, LP (Equitrans) Equitrans is seeking a Chapter 105 Water Obstruction and Encroachment Joint Permit approval for the proposed Wetland W-BB7 (W-BB7) Crossing Project (Project), authorizing Equitrans to temporarily impact 0.55 acres of W-BB7, a 2.0 acre palustrine emergent (PEM) wetland. No permanent filling of W-BB7 is proposed. No compensatory mitigation is required for the Project because there are no permanent impacts anticipated from pipeline construction activities. Following construction, Equitrans proposes to restore disturbed areas as close as reasonably practicable to their original contours and to reseed those areas. The disturbed PEM wetland will be allowed to revert back to its original PEM wetland functions once pipeline construction is complete. The earthwork and grading for the Project are designed to manage stormwater runoff in accordance with the Pennsylvania Stormwater Best Management Practices (BMP) Manual and Erosion and Sediment Plan for the EEP.

Equitran's wetland restoration procedures, seeding and planting specifications, and compensatory wetland strategies are detailed below.

Wetland Restoration

If working within a wetland area, the generalized construction sequence below will be followed:

1. Locate staging areas and access points. Staging areas should be located at least 50 feet from the edge of the wetland. Install sediment barriers down slope of these areas.
2. Install rock construction entrances as needed. Refer to the rock construction entrance detail on drawings for suggested dimensions.
3. Install compost filter socks along the perimeters of the site as shown on the construction drawings.
4. Mats, pads, or similar devices shall be used during the crossings of wetlands. Original grades through wetlands must be restored after trenching and backfilling. Any excess fill materials must be removed from the wetland and not spread on-site.
5. Soil excavated from wetland areas shall be carefully removed with the roots intact. This soil should be placed in a separate stockpile to be reused during the wetland surface restitution.
6. Dewater work area; water from the excavation shall be pumped to a sediment trap or a filter bag.
7. Install pipe.
8. Install trench plugs in wetland areas to prevent the trench from draining the wetland or changing its hydrology.
9. Backfill pipe trench. Backfill the top 12-inches of the excavated trench with the stockpiled wetland soil to match original surface grades.

10. Compact backfill and grade the surface of the trench area to allow for positive drainage to soil erosion and sediment controls and to prepare disturbed areas for permanent trench restoration.
11. Maintain all erosion and sedimentation control devices until site work is complete and a uniform 70% perennial vegetative cover is established.

Permanent Seeding:

In wetland areas, excavated topsoil with the vegetative root mass shall be carefully removed and stockpiled separately from the subsoil. Lime and fertilizer are not to be applied to the backfilled trench. Annual ryegrass may be applied at the rate of 40 lb/acre where needed to areas without standing water. Straw mulch should be used at the rate of 3 tons/acre and without binding agents.

Item	**1. Wetland Mix (Stabilization of Reclaimed Wetlands)**			
Temporary Seed and Mulch Application Rates				
Seed	Annual Rye Grass	40 pounds/acre	95	85
Mulch	None	N/A	N/A	N/A

Attachment General-1a, Part 1

Pennsylvania Chapter 105 General Permit Application (GP-5/8) Permit Application Forms and Documentation, Greene County

***Equitrans*, LP**
Equitrans Expansion Project – Greene County

Pennsylvania Chapter 105 General Permit Application (GP-5/8) Permit Application Forms and Documentation

Prepared for: Equitrans, LP
625 Liberty Avenue
Suite 1700
Pittsburgh, PA 15222

Prepared By: Tetra Tech, Inc.
661 Andersen Drive, Suite 200
Pittsburgh, Pennsylvania 15220

October 2015

TETRA TECH

TETRA TECH

PITT-10-15-052

October 27, 2015

Project Number: 212IC-PB-00176

Greene County Conservation District
Attn: Ms. Lindsay Kozlowski
22 West High St, Suite 204
Waynesburg, PA 15370

RE: Application for Chapter 105 General Permits 5 & 8
Equitrans, LP
Equitrans Expansion Project
Franklin, Jefferson, Morgan Townships, Greene County

Dear Ms. Kozlowski,

Equitrans, L.P. (Equitrans) is seeking a Certificate of Public Convenience and Necessity from the Federal Energy Regulatory Commission (FERC or Commission) pursuant to Section 7(c) of the Natural Gas Act authorizing it to construct and operate the Equitrans Expansion Project (Project) located in three counties in Pennsylvania and one county in West Virginia. Equitrans plans to construct approximately 7.87 miles of pipeline (at multiple separate locations), a new compressor station, an interconnect with the proposed Mountain Valley Pipeline (MVP), and ancillary facilities. In addition, Equitrans is seeking authorization pursuant to Section 7(b) of the Natural Gas Act to abandon an existing compressor station following the construction of the new compressor station.

The Project is designed to transport natural gas from the northern portion of the Equitrans system south to the new interconnect with MVP, as well as to existing interconnects with Texas Eastern Transmission, LP (Texas Eastern), Dominion Transmission, Inc., and Columbia Gas Transmission, LLC. The Project will provide shippers with additional flexibility to transport natural gas produced in the central Appalachian Basin to meet the growing demand by local distribution companies, industrial users, and power generation facilities located in local, northeastern, Mid-Atlantic, and southeastern regions of the United States. The Project will also increase system reliability, efficiency, and operational flexibility for the benefit of all Equitrans customers. The Project is designed to add up to 600,000 dekatherms per day of north-south firm capacity on the Equitrans system.

Please see the enclosed application for Chapter 105 General Permits for impacts within Greene County. Please note that the following information will be submitted at a later date:

- Erosion and Sediment Control Plan – The extent of earth distrubance is shown on the figures included in this application. An Erosion and Sediment Control General Permit will be submitted in December 2015.

- PNDI Clearance - A large project PNDI was submitted to the PA Department of Conservation and Natural Resources (DCNR), PA Fish and Boat Commission, PA Game Commission, and US Fish and Wildlife Service (USFWS) on June 24, 2015. Field surveys are currently underway and will be completed Summer 2016. Please refer to the Project Description in Section 8 for a summary of the status of surveys.

Tetra Tech, Inc.
661 Andersen Drive, Pittsburgh, PA 15220-2700
Tel 412.921.7090 Fax 412.921.4040 www.tetratech.com

- SHPO Clearance – Notifications were submitted to the PA Historical and Museum Commission and reviews of the online Pennsylvania Cultural Resources Geographic Information System (CRGIS) were conducted in April 2015. The CRGIS review found that eight archaeological sites have been inventoried within 0.25 mile of the Project. None of these sites are situated within the direct effects study area. A Phase I survey to identify archaeological cultural resources located within the APE for direct effects was undertaken in August and September 2015. The Phase I archaeological survey report and site forms requesting state site numbers from PHMC are in preparation and will be submitted to PHMC by early November 2015.

In addition, a Submerged Lands License Agreement Request has been prepared for the crossing of the Monongahela River.

Finally, since this is a FERC project, a Water Quality Certification under Section 401 of the Clean Water Act has been prepared for this Project.

Please let me know if you have any questions during your review. I can be contacted directly at 412-921-8051 or via email at heather.trexler@tetratech.com.

Sincerely,

Heather Trexler

Heather Trexler, P.G.

HT/clm

Enclosures:
CC: Stephanie Frazier, Equitrans

Greene County Conservation District
19 South Washington Street, Suite 150
Waynesburg, PA 15370
Phone: 724-852-5278 Fax: 724-852-5341

Project Review Application

Office Use Only	
GCCD#	Fees/INV#
Date RCVD	Date COMP
Reviewer	QA/QC
NPDES#	GP#
GP#	GP#

Project Information		Applicant Information	Preparer Information
Name: Equitrans Expansion Project		Company: Equitrans, LP	Company: Tetra Tech, Inc
Address:		Contact: Stephanie Frazier	Contact: Heather Trexler
		Address: 625 Liberty Ave, St 1700	Address: 661 Andersen Dr
Municipality: Franklin, Jefferson, Morgan		Pittsburgh, PA 15222	Pittsburgh, PA 15220
Total Acres:		Phone: 412-553-5798	Phone: 412-921-8051
Disturbed Acres:		E-Mail: sfrazier@eqt.com	E-Mail: heather.trexler@tetratech.com

Additional Project Details [2] - Non-Mandatory Items	
Receiving Streams & Ch. 93 Designation	
South Fork Tenmile Creek	WWF
Ruff Creek	WWF
GPS Coordinates	
39o 54' 58.6" N 80o 7' 43.1"W	
Landowner[2]	
Anticipated Start Date[2]	
Quad Map Name	
Mather	
On-Site Contact[2]	
Name:	
Phone:	

Required E&S Plan Narrative Components and Attachments	
Project Introduction	
Preparer Qualifications	
Existing Topographic Features	
Past, Present, and Proposed Land Uses	
Soils Information with Resolutions to Limitations	
Information on Receiving Streams (CH. 93)	
Detailed Construction Sequence	
BMP Maintenance Program	
Waste Disposal Program	
Copies of Act 14, 67, 68 & 127 Letters	
PNDI Search Receipt	
Watershed Area (GP-7, GP-8 & GP-9)	
Review and Address Current GCCD Policy(2-15-2013)	
Refer to Title 25 Chapter 102.4(b)(5) if needed	

Required E&S Plan Map and Drawing Components	
Copy of USGS Quad Map (or equivalent)[1]	
Copy of NRCS Soils Map[1]	
BMP Location Detail (Temporary & Permanent)	
Topo Map Indicating Watershed Size	
BMP Construction Details	
Delineated Upstream Watershed Sizes on Stream Encroachments	
Review and Address Current GCCD Policy(2-15-2013)	
([1] - Delineate Project Area)	

Fee Information

Disturbed Acreage Fee	
Elective Acceleration Fee	
Total:	

Check to "Greene County Conservation District"
Acceleration fee is double the disturbed acreage fee

Site Dependent Plan Attachments	
Calculations as Needed	
PNDI Resolution Letter as Needed	
Project Photos as Needed or Volunteered	

General NPDES/ESCGP Permit	
Individual NPDES Permit	
NPDES/ESCGP-2 Disturbance Fee	
105 Permit Filing Fee	$3,475

General, Individual & ESCGP base filing fee check ($500 or $1500) made payable to "Greene County Clean Water Fund"
NPDES/ESCGP-1 Disturbance Fee $100/disturbed acre made payable to "Commonwealth of PA Clean Water Fund"
105 Permit Filing Fee made payable to "Greene County Clean Water Fund" with Chapter 105 Filing Fee indicated in Memo
--Please check http://www.co.greene.pa.us/gccd periodically for updates to this form--

Rev. 3/6/13

You can E-Mail our E&S Technician at lkozlowski@co.greene.pa.us

GREENE COUNTY CONSERVATION DISTRICT **187999** 10/23/2015 **1777028**

INVOICE NO.	INVOICE DATE	DESCRIPTION	NET AMOUNT
10232015	23-OCT-15	PERMITTING FEES	$3,475.00
			***$3,475.00

THE FACE OF THIS DOCUMENT CONTAINS A VOID PANTOGRAPH AND MICROPRINTING

TETRA TECH

TETRA TECH, INC.
1000 The American Road
Morris Plains NJ 07950
973-630-8000

WELLS FARGO BANK, N.A.
Positive Pay Protected
56-382/412
VOID AFTER 90 DAYS

1777028
10/23/2015

PAY ***THREE THOUSAND FOUR HUNDRED SEVENTY-FIVE DOLLARS AND ZERO CENTS*****

*****$3,475.00***

TO THE ORDER OF

GREENE COUNTY CONSERVATION DISTRICT
19 SOUTH WASHINGTON STREET
FORT JACKSON BUILDING, MESSANINE
WAYNESBURG, PA 15370,

⑈1777028⑈ ⑆041203824⑆ 9600048505⑈

TABLE OF CONTENTS

SECTION

LIST OF ACRONYMS

E&SCP	Erosion and Sedimentation Control Plan
GP	General Permit
GPR	General Permit Registration
ISO	International Organization for Standardization
HQ	High Quality
LOD	Limits-of-Disturbance
mi	Mile
NAD	North American Datum
PA	Pennsylvania
PADEP	Pennsylvania Department of Environmental Protection
PASPGP-4	Pennsylvania State Programmatic General Permit #4
PEM	Palustrine Emergent
PFBC	Pennsylvania Fish and Boat Commission
PFO	Palustrine Forested
PNDI	Pennsylvania Natural Diversity Inventory
Project	Equitrans Expansion Project
PSS	Palustrine Scrub-Shrub
PUB	Palustrine Unconsolidated Bottom

Rd.	Road
ROW	Right-of-Way
St.	Street
Tetra Tech	Tetra Tech, Inc.
WWF	Warm Water Fishes

SECTION 1.0

GENERAL PERMIT REGISTRATION FORM

3150-PM-BWEW0500 Rev. 2/2014
Form

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERWAYS ENGINEERING AND WETLANDS

CHAPTER 105
GENERAL PERMIT REGISTRATION

TYPE OF GENERAL PERMIT: ☒ **New Permit**
PLEASE MARK ("X") ONE: ☐ **Transfer of Existing Permit** *(Complete Section A, C & H below and all of form 3150-PM-BWEW0016)*

PLEASE MARK ("X") ALL THAT APPLY:

- ☐ GP- 1 Fish Habitat Enhancement Structures
- ☐ GP- 2 Small Docks & Boat Launching Ramps
  - **Please mark ("X") the specific type of project:**
    - ☐ private recreational dock
    - ☐ public access facility
    - ☐ public service facility
    - ☐ other private or commercial facility
- ☐ GP- 3 Bank Rehabilitation, Bank Protection and Gravel Bar Removal
- ☐ GP- 4 Intake and Outfall Structures
- ☒ GP- 5 Utility Line Stream Crossing
- ☐ GP- 6 Agricultural Crossings & Ramps
- ☐ GP- 7 Minor Road Crossings
- ☒ GP- 8 Temporary Road Crossings
- ☐ GP- 9 Agricultural Activities
- ☐ GP-10 Abandoned Mine Reclamation
- ☐ GP-11 Maintenance, Testing, Repair, Rehabilitation, or Replacement of Water Obstructions and Encroachments (reviewed by DEP Regional Office only)
- ☐ GP-15 Private Residential Construction in Wetlands

☒ **Activity Related to Oil and Gas Exploration, Production or Transmission**

☒ **Activity Subject to FERC approval (Docket number** CP16-13-000) ☐ **FERC Natural Gas Act Facility**

SECTION A. APPLICANT INFORMATION

Applicant's Name / Client	**DEP Client ID#** (if known)	**Employer ID#** (EIN)
Equitrans, LP	**163329**	**251776875**

Client Information - Please select Client Type / Code from drop down box under the correct entity shown to the right (or may be written in) →	**Government**	**Non-Government**	**Individual**
		OTHER Other (Non-G	

Mailing Address	**City**	**State**	**ZIP + 4**
625 Liberty Avenue, Suite 1700	Pittsburgh	PA	15222

Contact Person – Last Name	First	MI	Suffix	**Telephone**	**Email Address**
Frazier	Stephanie			(412) 553-5798	sfrazier@eqt.com

SECTION B. CONSULTANT INFORMATION (Complete if different than above) ☐ N/A

Contact Person – Last Name	First	MI	Suffix	**Consultant's Title**	**Consulting Firm**
Trexler	Heather			Project Manager	Tetra Tech, Inc.

Mailing Address	**City**	**State**	**ZIP + 4**
661 Andersen Drive, Foster Plaza 7	Pittsburgh	PA	15220

Telephone	**Fax**	**Email**	**Employer ID#** (EIN)
(412) 921-8051	(412) 921-4040	Heather.trexler@tetratech.com	95-4148514

SECTION C. PROJECT INFORMATION

Project /Site Name:	**DEP Site ID#** (if known or leave blank)
Equitrans Expansion Project	

Client Relationship - Please select Site-to-Client Relationship / Code from drop down box to the right (or may be written in) →	Double-click on shaded area below to select correct Site-to-Client Relationship / Code ↓

County	**Municipality** ☐ City ☐ Borough ☒ Township	**OWNOP Owner/Operator**
Greene	Franklin, Jefferson, Morgan	

Site Location / Address	**City**	**State**	**ZIP + 4**
Braden Run Road, Redhook Compressor Facility	Waynesburg	PA	15370

Collection Method: ☐ EMAP ☐ HGIS ☒ GISDR* ☐ ITPMP ☐ GPS ☐ WAAS ☐ LORAN

Check the horizontal reference datum (or projection datum) employed in the collection method.
EMAP and HGIS (PNDI) have known datum and do not require checking here. ☐ NAD27 ☒ NAD83 ☐ WGS84 (GEO84)

Enter the date of collection if coordinates were derived from GPS, WAAS or LORAN. mm dd yyyy

Applicant's Name	GENERAL PERMIT REGISTRATION	
Equitrans, LP		

SECTION D. RESOURCE IDENTIFICATION

Please place an "X" in the appropriate box next to each item to indicate the applicant has identified any of these resources which may be present at the project site.

Each General Permit (GP) has a specific set of restrictions and some resources may require certain actions or prohibit the project from being eligible to register use of the GP. *This list is not all-inclusive, please see GPs for details.*

YES	NO		YES	NO	
☐	☒	National Register of Historic Places	☒	☐	Threatened and Endangered Species
☐	☒	National Registry of Natural Landmarks	☐	☒	Wild or Stocked Trout Streams
☐	☒	Local historical site	☐	☒	Wild and Scenic Rivers
☐	☒	Exceptional Value (EV) Waters	☒	☐	Wetlands
☐	☒	High Quality (HQ) Waters	☐	☒	Other _____

SECTION E. REGISTRATION CHECK LIST AND REQUIREMENTS

Please place an "X" next to each item (1 - 16) to ensure it is completed and/or provided. Unless otherwise specified, all items are ***required*** to ensure a complete Registration package. ****Provide ONE (1) ORIGINAL and ONE (1) COPY of the Registration package****	Applicant Entry	DEP Use Only
1. **General Permit Registration form** properly completed and signed	☒	☐
☒ I have read the terms and conditions of the GP(s) indicated above.	☒	☐
2. **General Permit Registration Fee and Chapter 105 Fee Calculation Worksheet**	☒	☐
3. Notification sent to the Municipality & County (copy of **General Permit Registration form**)	☒	☐
4. **PASPGP-4 Cumulative Impact Project Screening Form** properly completed	☒	☐
5. **Location Map** (USGS quad map) with project site marked	☒	☐
6. **Color Photographs** with dates and descriptions *(see instructions)* ☐ ***N/A***	☒	☐
7. **Stream Name and Chapter 93 Classification** (example: UNT to #40637 HOUSE RUN, HQ-WWF/EV) Please refer to Section 7, Stream Name and Chapter 93 Classifications.	☒	☐
8. **Project Description** including proposed impacts and PNDI Avoidance Measures (if applicable) Please refer to Section 8, Project Description.	☒	☐
9. **Site Specific and/or Standard Drawings** depicting the project's GP activities	☒	☐
10. **Site Plan** depicting the site of the project's GP activities *(see Section F.)*	☒	☐
11. **Erosion & Sediment Control Plan (E&S Plan)** *(required for GP-11 only - see instructions)*	☒	☐
12. **Written Directions to Project Site:** Please refer to Section 12, Written Directions to the Project Site.	☒	☐
13. **Pennsylvania Natural Diversity Inventory (PNDI):** **Please place an "X" next to the appropriate box indicating the information provided:**		
☐ Completed PNDI Project Planning & Environmental Review Form	☐	☐
☐ Initialed PNDI Project Environmental Review Search Receipt showing **"**No Known Impacts"	☐	☐
☐ Initialed PNDI Project Environmental Review Search Receipt showing "Avoidance Measures" which have ALSO been incorporated into the project description	☐	☐
☒ Initialed PNDI Project Environmental Review Search Receipt showing "Potential Impacts" AND documentation of appropriate agency coordination required on PNDI Receipt	☒	☐
14. **Bog Turtle Habitat Screening:** **Please place an "X" next to the appropriate box indicating the information provided:**		
☐ Completed Request for a Bog Turtle Habitat Screening Form	☐	☐
☐ "No Effect" determination from the Army Corp of Engineers	☐	☐
☐ Documented clearance from the US Fish and Wildlife Services	☐	☐
☒ N/A	☒	☐

Applicant's Name	GENERAL PERMIT REGISTRATION	
Equitrans, LP		

15. Activities which impact wetlands:		
Please place an "X" next to the appropriate box indicating the information provided:	☐	☐
☐ N/A because no wetland impacts are proposed or no compensatory mitigation is necessary.	☒	☐
☒ A wetland delineation with complete data sheets in accordance with the 1987 Corps of Engineers Wetland Delineation Manual AND the appropriate Regional Supplements to the Corps of Engineers Wetland Delineation Manual for use in Pennsylvania.	☐	☐
☐ If direct or indirect wetland impacts are greater than 0.05 acres, a compensatory mitigation plan in accordance with the Department's Replacement criteria which provides compensation at a minimum one to one acre ratio.	☐	☐
☐ **If compensatory mitigation onsite is determined not feasible:** A check, number _____, in the amount of $_____ payable to the National Fish and Wildlife Foundation, N.A. 1237, as compensatory mitigation for _____ acres of impact in wetlands, in accordance with the Pennsylvania Wetland Replacement Project.	☐	☐
16. Registration of a GP-11:		
Please place an "X" next to the appropriate box indicating the worksheet(s) provided:	☒	☐
☒ N/A because not registering use of GP-11	☐	☐
☐ E&S Plan	☐	☐
☐ Project Inventory	☐	☐
☐ Bridge and/or Culvert Replacement Projects or Projects That Change the Waterway Opening	☐	☐

SECTION F. SITE PLAN

Please place an "X" next to each item to ensure it is shown on the site plan. Unless otherwise specified in the permit, all items are ***required*** to ensure a complete Registration package.

YES	NO		YES	NO	
☒	☐	Stream Name: Please see Section 7.	☒	☐	100 year Flood Elevation OR FEMA map
☒	☐	Stream Limits and Flow Direction	☒	☐	Limits of Earth Disturbance Associated with Activity
☒	☐	Stream Impacts on site (including dimensions)	☒	☐	Location of Property Lines Relative to the Project
☒	☐	Wetlands on site (including acres)	☒	☐	Existing Utilities, ROWs, Easements
☒	☐	Wetland Impacts on site (including acres)	☒	☐	Existing Buildings, Roadway, etc.
☒	☐	Other Waters (i.e. pond, lakes, wetlands)	☒	☐	Proposed Buildings, Roadways, ROW etc.
☒	☐	Site Specific / Standard Drawings location(s)	☐	☒	Other _____
☒	☐	Photograph location(s)	☐	☒	Other _____

SECTION G. IMPACTS ASSOCIATED WITH PROJECT WORK SITE

Please provide the project's total impacts for each category in the table provided below.

Please complete and provide a separate chart detailing the information for each impact to waters and wetlands. Include the identifier developed in Section E.9. for each location. All impact acreages and number of impacts should be totaled on each page and then the project's total impacts provided in the table below.

The Additional Impacts Associated with Project Work Site (3150-PM-BWEW0554) worksheet may be used but is not required.

Total Impacts for the Project	**Temporary Impacts** (acreage & number of impacts)		**Permanent Impacts** (acreage & number of impacts)	
Total Waters Impacts	1.38ac	5 number	0 ac	0 number
Total Impacts to Wetlands	0.48ac	4 number	0 ac	0 number
Total Impacts for this Project	1.87ac	9 number	0 ac	0 number

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Please complete and provide this chart (as many as is needed) as part of Section G of the General Permit Registration (3150-PM-BWEW0500) for impact locations.

ADDITIONAL IMPACTS ASSOCIATED WITH PROJECT WORK SITE

Provide the unique identifier (from Section E.9.), latitude and longitude, total area and dimensions of impact to waters (including streams, lakes, ponds, etc) and/or wetlands associated with your project for each category below.

The impacts for each identifier below should be totaled and provided at the bottom of the page, then each page totaled. An account of total impacts for the project is to be provided in the chart found in Section G of the General Permit Registration Form.

Identifier S-AA1 * 43,560 square feet per acre

Impact Latitude (DMS) 39° 55' 00.65" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 80° 7' 29.70" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☐ *N/A*	0.023 ac	10' x 100'	0 ac	0' x 0'
	Floodway	☐ *N/A*	0.252 ac	110' x 100'	0 ac	' x '
Total Impacts to Waters (a)			**0.252 ac**		**0 ac**	
Impacts to Wetlands (b)		☒ *N/A*	**ac**	' x '	**ac**	' x '
Total Impacts for this location (c)			**0.252 ac**		**0 ac**	

Identifier S-AA1 (workspace within floodway) * 43,560 square feet per acre

Impact Latitude (DMS) 39° 54' 0.65" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 80° 7' 29.7" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☐ *N/A*	0.01 ac	10' x 16'	0 ac	0' x 0'
	Floodway	☐ *N/A*	0.922 ac	24' x 1680'	0 ac	' x '
Total Impacts to Waters (a)			**0.922 ac**		**0 ac**	
Impacts to Wetlands (b)		☒ *N/A*	**ac**	' x '	**ac**	' x '
Total Impacts for this location (c)			**0.922 ac**		**0 ac**	

Identifier W-AA1 * 43,560 square feet per acre

Impact Latitude (DMS) 39° 54' 56.57" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 80° 7' 52.73" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☒ *N/A*	ac	x	0 ac	0' x 0'
	Floodway	☒ *N/A*	ac	' x '	ac	' x '
Total Impacts to Waters (a)			**ac**		**ac**	
Impacts to Wetlands (b)		☐ *N/A*	**0.087 ac**	175' x 22'	**0 ac**	' x '
Total Impacts for this location (c)			**0.087 ac**		**0 ac**	

Total Impacts for "Page 1 of 3" (same as above)	**Temporary Impacts** (acreage & number of impacts)		**Permanent Impacts** (acreage & number of impacts)	
Total Waters Impacts (sum of a)	1.174 ac	2 number	0 ac	0 number
Total Impacts to Wetlands (sum of b)	0.087 ac	1 number	0 ac	0 number
Total Impacts for this page (sum of c)	1.261 ac	3 number	0 ac	0 number

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Please complete and provide this chart (as many as is needed) as part of Section G of the General Permit Registration (3150-PM-BWEW0500) for impact locations.

ADDITIONAL IMPACTS ASSOCIATED WITH PROJECT WORK SITE

Provide the unique identifier (from Section E.9.), latitude and longitude, total area and dimensions of impact to waters (including streams, lakes, ponds, etc) and/or wetlands associated with your project for each category below.

The impacts for each identifier below should be totaled and provided at the bottom of the page, then each page totaled. An account of total impacts for the project is to be provided in the chart found in Section G of the General Permit Registration Form.

Identifier W-AA4 * 43,560 square feet per acre

Impact Latitude (DMS) 39° 55' 00.35" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 80° 6' 55.52" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☒ *N/A*	ac	' x '	0 ac	0' x 0'
	Floodway	☒ *N/A*	_____ ac	_____' x _____'	_____ ac	_____' x _____'
Total Impacts to Waters (a)			**0 ac**		**_____ ac**	
Impacts to Wetlands (b)		☐ *N/A*	**0.114 ac**	75' x 74'	**0 ac**	_____' x _____'
Total Impacts for this location (c)			**0.114 ac**		**0 ac**	

Identifier W-AA7 * 43,560 square feet per acre

Impact Latitude (DMS) 39° 55' 1.72" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 80° 6' 50.37" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☒ *N/A*	ac	' x '	0 ac	0' x 0'
	Floodway	☒ *N/A*	_____ ac	_____' x _____'	_____ ac	_____' x _____'
Total Impacts to Waters (a)			**0 ac**		**_____ ac**	
Impacts to Wetlands (b)		☐ *N/A*	**0.074 ac**	141' x 25'	**0 ac**	_____' x _____'
Total Impacts for this location (c)			**0.074 ac**		**0 ac**	

Identifier S-AA12 * 43,560 square feet per acre

Impact Latitude (DMS) 39° 55' 3.13" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 80° 6' 20.06" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☐ *N/A*	0.129 ac	75' x 75'	0 ac	0' x 0'
	Floodway	☐ *N/A*	0.394 ac	229' x 75'	_____ ac	_____' x _____'
Total Impacts to Waters (a)			**0.394 ac**		**_____ ac**	
Impacts to Wetlands (b)		☒ *N/A*	**_____ ac**	_____' x _____'	**_____ ac**	_____' x _____'
Total Impacts for this location (c)			**0.394 ac**		**_____ ac**	

Total Impacts for "Page **2** of 3" (same as above)	**Temporary Impacts** (acreage & number of impacts)		**Permanent Impacts** (acreage & number of impacts)	
Total Waters Impacts (sum of a)	0.394 ac	1 number	0 ac	0 number
Total Impacts to Wetlands (sum of b)	0.188 ac	2 number	0 ac	0 number
Total Impacts for this page (sum of c)	0.582 ac	3 number	0 ac	0 number

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERWAYS ENGINEERING AND WETLANDS

Please complete and provide this chart (as many as is needed) as part of Section G of the General Permit Registration (3150-PM-BWEW0500) for impact locations.

ADDITIONAL IMPACTS ASSOCIATED WITH PROJECT WORK SITE

Provide the unique identifier (from Section E.9.), latitude and longitude, total area and dimensions of impact to waters (including streams, lakes, ponds, etc) and/or wetlands associated with your project for each category below.

The impacts for each identifier below should be totaled and provided at the bottom of the page, then each page totaled. An account of total impacts for the project is to be provided in the chart found in Section G of the General Permit Registration Form.

Identifier S-AA15 * 43,560 square feet per acre

Impact Latitude (DMS) 39° 54' 35.9" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 80° 5' 32.9" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☐ *N/A*	0.006 ac	100' x 2.5'	0 ac	0' x 0'
	Floodway	☐ *N/A*	0.015 ac	263' x 2.5'	____ ac	____' x ____'
Total Impacts to Waters (a)			**ac**		**ac**	
Impacts to Wetlands (b)		☒ *N/A*	**ac**	____' x ____'	**ac**	____' x ____'
Total Impacts for this location (c)			**0.015 ac**		**ac**	

Identifier W-AA10 * 43,560 square feet per acre

Impact Latitude (DMS) 39° 54' 16.3" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 80° 5' 23.9" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☒ *N/A*	0.0 ac	' x '	0 ac	0' x 0'
	Floodway	☒ *N/A*	____ ac	____' x ____'	____ ac	____' x ____'
Total Impacts to Waters (a)			**0.0 ac**		**ac**	
Impacts to Wetlands (b)		☐ *N/A*	**0.001 ac**	12.4' x 2.5'	**ac**	____' x ____'
Total Impacts for this location (c)			**0.001 ac**		**ac**	

Identifier S-AA17 * 43,560 square feet per acre

Impact Latitude (DMS) 39° 54' 10.6" N			**Temporary Impacts**		**Permanent Impacts**	
Impact Longitude (DMS) 80° 5' 21.3" W			Area* (in acres)	Dimensions* (in feet)	Area* (in acres)	Dimensions* (in feet)
Impacts to Waters	Stream	☐ *N/A*	0.001 ac	12' x 2.5'	0 ac	0' x 0'
	Floodway	☐ *N/A*	0.006 ac	112' x 2.5'	____ ac	____' x ____'
Total Impacts to Waters (a)			**0.006 ac**		**ac**	
Impacts to Wetlands (b)		☒ *N/A*	**ac**	____' x ____'	**ac**	____' x ____'
Total Impacts for this location (c)			**0.006 ac**		**ac**	

Total Impacts for "Page **3** of 3" (same as above)	**Temporary Impacts** (acreage & number of impacts)		**Permanent Impacts** (acreage & number of impacts)	
Total Waters Impacts (sum of a)	0.021 ac	2 number	0 ac	0 number
Total Impacts to Wetlands (sum of b)	0.001 ac	1 number	0 ac	0 number
Total Impacts for this page (sum of c)	0.022 ac	3 number	0 ac	0 number

Applicant's Name Equitrans, LP	GENERAL PERMIT REGISTRATION	

SECTION H. CERTIFICATION

I certify under penalty of law that the information provided in this permit registration is true and correct to the best of my knowledge and information and that I possess the authority to undertake the proposed action. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. (If any of the information and/or plans is found to be in error, falsified, and/or incomplete, this authorization/verification may be subject to modification, suspension, or revocation in accordance with applicable regulations.)

Signature of Applicant — Date: 22 Oct 2015

Stephanie Frazier – Supervisor Permitting - Environmental
Typed / Printed Name

PA Fish and Boat Commission Approval (for GP-1 only)

Signature of Reviewer — Date

Reviewer's Typed / Printed Name — ( ) Phone Number

Reviewer's Typed / Printed Title — Email Address

This General Permit shall not be effective until the owner has had their E&S Plan reviewed by the appropriate Regional Office or District, obtained Federal Authorization and, where required, obtained an SLLA from DEP.

AN ACKNOWLEDGED COPY OF THIS GENERAL PERMIT REGISTRATION PACKAGE (INCLUDING THE ACKNOWLEDGEMENT LETTER AND TERMS AND CONDITIONS), REQUIRED FEDERAL AUTHORIZATION, AND THE E&S PLAN MUST BE AVAILABLE AT THE PROJECT SITE DURING CONSTRUCTION.

SECTION I. ACKNOWLEDGEMENT – DEP USE ONLY

Signatures authorizing acknowledgment to use and register:

A. Completeness Review:

DEP / District Reviewer Signature

Reviewer's Typed / Printed Name

Begin Date: ____
Incomplete Date: ____
Response Date: ____
End Date: ____

Completeness Status

☐ YES ☐ NO

B. Eligibility Review:

DEP / District Reviewer Signature

Reviewer's Typed / Printed Name

Begin Date: ____
Incomplete Date: ____
Response Date: ____
End Date: ____

☐ Deficient - **DENIED**

C. Decision Review:

DEP / District Manager Signature

Reviewer's Typed / Printed Name

Begin Date: ____
End Date: ____

Disposition Status

☐ WITHDRAWN ☐ **APPROVED**
☐ RETURNED ☐ **DENIED**

D. Contact Information:

Typed / Printed Name — ( ) Phone Number — Email Address

E. Permit Tracking:

Received ____ Acknowledged ____ SLLA required: ☐ NO ☐ YES PASPGP-4: ☐ NO ☐ YES ☐ CAT 1 ☐ CAT 3

GP - ____ GP - ____ GP - ____ GP - ____ GP - ____

Notes: ____

SECTION 2.0

GENERAL PERMIT REGISTRATION FEE AND CHAPTER 105 FEE CALCULATION WORKSHEET

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERWAYS ENGINEERING AND WETLANDS

CHAPTER 105 FEE(S) CALCULATION WORKSHEET

Additional information can be found at 25 PA Code §105.13 (relating to regulated activities – information and fees), the General Permit Registration (3150-PM-BWEW0500), the Joint Permit Application (3150-PM-BWEW0036) and the Dam Permit Application (3140-PM-BWEW0001)

Federal, State, county or municipal agencies or municipal authorities: ☐ **EXEMPT from fees**

These entities are exempt from these fees. If the applicant falls into one of these categories, please check the box above and provide only the first page of this worksheet with the project application or registration.

ALL OTHERS:

1. Please place an "X" in the box next to all authorizations that apply to the project and complete the fee information below those authorization(s). Projects may require multiple authorizations and fees, further clarification and examples are included below and at the end of this document.
2. Total each authorization, Section, and Part. Part One is for Water Obstructions and Encroachment authorizations, Part Two is for Dam Safety authorizations.
3. Please provide this completed worksheet (page 1 and page 2 and/or page 3, as is appropriate to the project) and a check for the applicable fee(s) with the project application or registration. The check should be made payable to the "**Commonwealth of Pennsylvania Clean Water Fund**" OR "**_____ Conservation District Clean Water Fund**", whichever is the reviewing entity.

NOTES:

Per *25 PA Code §105.13(c)(2)(iii)* Disturbance review fees are calculated by individually adding all of the permanent and temporary impacts to waterways, floodways, floodplains and bodies of water including wetlands to the next highest tenth acre and multiplying the permanent and temporary impacts by the respective fees and then these amounts are added to the other applicable fees.

Entities proposing structures or activities to occupy a Submerged Lands of the Commonwealth must obtain a Submerged Lands License Agreement (SLLA) and pay the appropriate annual charge. The applicant will be contacted if this charge applies to the project.

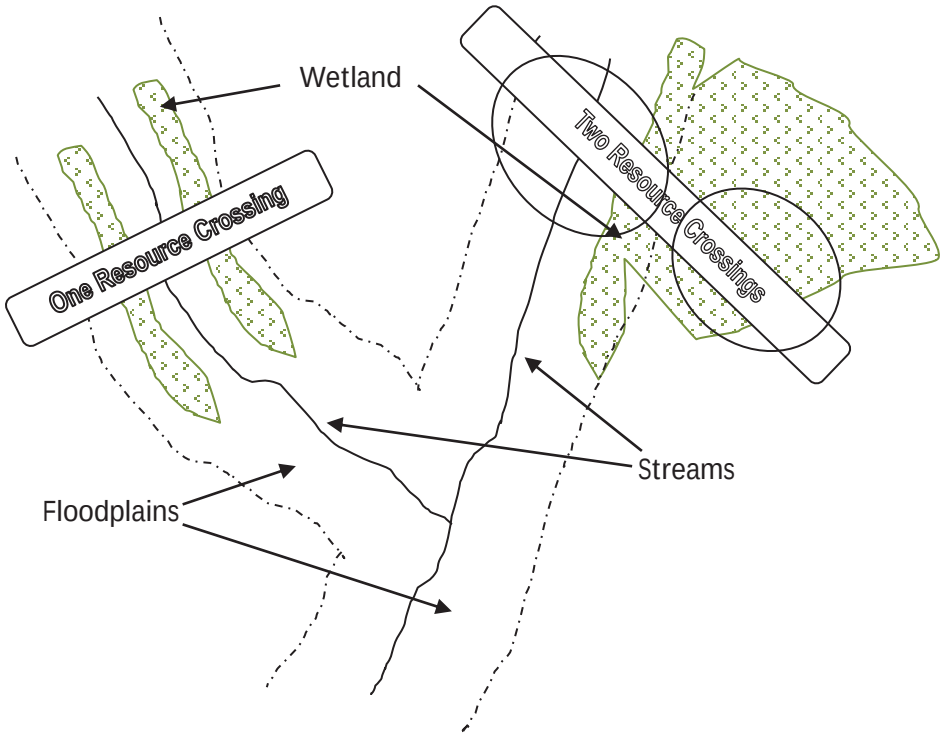
Floodway – The channel of the watercourse and portions of the adjoining floodplains which are reasonably required to carry and discharge the 100-year frequency flood. Unless otherwise specified, the boundary of the floodway is as indicated on maps and flood insurance studies provided by FEMA. In an area where no FEMA maps or studies have defined the boundary of the 100-year frequency floodway, it is assumed, absent evidence to the contrary, that the floodway extends from the stream to 50 feet from the top of the bank of the stream.

Wetland and Stream Clarification:

[1] In many instances, wetlands are located within the floodplain of a stream. These resources for the purposes of calculating disturbance fees are considered co-located or overlapping and the area of disturbance would only be used once.

[2] In the case of GP-5, GP-7 and GP-8 fees are charged per structure per resource crossing and the following also applies to the disturbance fees:

- A crossing of the stream and the floodplain with wetlands present within the floodplain is considered one resource crossing.
- When the crossing traverses a stream and the floodplain and a wetland that is located outside of the floodplain or a wetland that extends out beyond the floodplain, it is considered two resource crossings.



PART ONE: WATER OBSTRUCTIONS AND ENCROACHMENTS

SECTION A. APPLICATION FEES

☐ **WATER OBSTRUCTION AND ENCROACHMENT PERMIT** (Joint Permit Application)

Some activities or structures within a project may also qualify for an accumulation of General Permit fees, please mark the box above indicating an Individual Water Obstruction and Encroachment Permit AND the corresponding fee(s) in the General Permit section below those. Activities or structures not qualifying for a General Permit fee must include a disturbance fee.

☐ Administrative Filing Fee[1]			$ 1,750	+
☐ Temporary Disturbance ($400/0.1ac)	_____ acres x $4,000 =		$ _____	+
☐ Permanent Disturbance ($800/0.1ac)	_____ acres x $8,000 =		$ _____	= $ _____
		WO&E FEE subtotal (a)		$ _____

☒ **GENERAL PERMIT(S)** (select activity/structure(s) below, see page 4 for "#" explanation)

Some activities or structures within a project requiring an Individual Water Obstruction and Encroachment Permit may qualify for an accumulation of General Permit fees, please mark the corresponding fee(s) below but not the box above indicating a General Permit.

☐ GP-1 Fish Habitat Enhancement Structures			$ 50	= $ _____
☐ GP-2 Small Docks and Boat Launching Ramps	_____ (#) x		$ 175	= $ _____
☐ GP-3 Bank Rehabilitation, Bank Protection and Gravel Bar Removal	_____ (#) x		$ 250	= $ _____
☐ GP-4 Intake and Outfall Structures	_____ (#) x		$ 200	= $ _____
☒ GP-5 Utility Line Stream Crossings[2]	1 (#) x 7 (#) x	2x1	$ 250	= $ 1750 =$500
☐ GP-6 Agricultural Crossings and Ramps	_____ (#) x		$ 50	= $ _____
☐ GP-7 Minor Road Crossings[2]	_____ (#) x		$ 350	= $ _____
☒ GP-8 Temporary Road Crossings[2]	7 (#) x		$ 175	= $ 1225
☐ GP-9 Agricultural Activities			$ 50	= $ _____
☐ GP-10 Abandoned Mine Reclamation			$ 500	= $ _____
☐ GP-11 Maintenance, Testing, Repair, Rehabilitation, or Replacement of Water Obstructions and Encroachments[1]			$ 750	+
☐ Temporary Disturbance ($400/0.1ac)	_____ acres x $4,000 =		$ _____	+
☐ Permanent Disturbance ($800/0.1ac)	_____ acres x $8,000 =		$ _____	= $ _____
☐ GP-15 Private Residential Construction in Wetlands[1]			$ 750	+
☐ Temporary Disturbance ($400/0.1ac)	_____ acres x $4,000 =		$ _____	+
☐ Permanent Disturbance ($800/0.1ac)	_____ acres x $8,000 =		$ _____	= $ _____
		GP(s) FEE subtotal (b)		$ 3475

PART ONE: SECTION A. APPLICATION FEE(S) subtotal (a+b=c) $ 3475

SECTION B. OTHER FEES

☐ Environmental Assessment for Waived Activities (§105.13(c)(2)(iv))			$ 500	$ _____
☐ Amendment to Water Obstruction and Encroachment Permit				
☐ Major Amendment[1]			$ 500	+
☐ Temporary Disturbance	_____ acres x $4,000 =		$ _____	+ $ _____
☐ Permanent Disturbance	_____ acres x $8,000 =		$ _____	= $ _____
☐ Minor Amendment			$ 250	$ _____
☐ Transfer of Water Obstruction and Encroachment Permit				
☐ WITH Submerged Lands License Agreement			$ 200	$ _____
☐ WITHOUT Submerged Lands License Agreement			$ 100	$ _____

PART ONE: SECTION B. OTHER FEE(S) subtotal (d) $ 0

PART ONE: FEE(S) TOTAL (c+d=e) $

DEP USE ONLY			
FEE TOTAL:		Permit / Authorization Number (s):	
Correct Amount:		Check #:	

Check Amount: _____ Payable to: _____ _____

PART TWO: DAM SAFETY (USE ONE FEE SHEET PER DAM)

SECTION A. APPLICATION FEES

☐ **DAM PERMIT APPLICATION – NEW DAM**

☐ Size A	☐ Hazard 1 $26,500	☐ Hazard 2 $26,500	☐ Hazard 3 $25,500	☐ Hazard 4 $23,500	$ ____
☐ Size B	☐ Hazard 1 $19,000	☐ Hazard 2 $19,000	☐ Hazard 3 $18,500	☐ Hazard 4 $17,000	$ ____
☐ Size C	☐ Hazard 1 $10,500	☐ Hazard 2 $10,500	☐ Hazard 3 $10,000	☐ Hazard 4 $ 8,000	$ ____

☐ **STAGED CONSTRUCTION**

NO. OF STAGES BEYOND INITIAL STAGE _____ X APPLICATION FEE _____ X 0.90 (90%) $ ____

☐ **DAM PERMIT APPLICATION – MODIFICATION OF DAM**

☐ Size A	☐ Hazard 1 $18,500	☐ Hazard 2 $18,500	☐ Hazard 3 $18,500	☐ Hazard 4 $18,000	$ ____
☐ Size B	☐ Hazard 1 $12,000	☐ Hazard 2 $12,000	☐ Hazard 3 $12,000	☐ Hazard 4 $11,500	$ ____
☐ Size C	☐ Hazard 1 $ 7,500	☐ Hazard 2 $ 7,500	☐ Hazard 3 $ 7,500	☐ Hazard 4 $ 7,500	$ ____

☐ **STAGED CONSTRUCTION**

NO. OF STAGES BEYOND INITIAL STAGE _____ X APPLICATION FEE _____ X 0.85 (85%) $ ____

☐ **DAM PERMIT APPLICATION – OPERATION & MAINTANANCE OF EXISTING DAM**

☐ Size A	☐ Hazard 1 $12,500	☐ Hazard 2 $12,500	☐ Hazard 3 $12,000	☐ Hazard 4 $10,000	$ ____
☐ Size B	☐ Hazard 1 $10,000	☐ Hazard 2 $10,000	☐ Hazard 3 $ 9,500	☐ Hazard 4 $ 8,500	$ ____
☐ Size C	☐ Hazard 1 $ 7,000	☐ Hazard 2 $ 7,000	☐ Hazard 3 $ 6,500	☐ Hazard 4 $ 6,000	$ ____

PART TWO: SECTION A. APPLICATION FEE(S) subtotal (a) $ ____

SECTION B. OTHER FEES

☐ Letter of Amendment or Authorization

☐ Major (≥$250,000)

☐ Size A $14,700 ☐ Size B $ 8,700 ☐ Size C $ 4,400 $ ____

☐ Minor (<$250,000)

☐ Size A $ 1,300 ☐ Size B $ 1,000 ☐ Size C $ 650 $ ____

☐ Major Dam Design Revision

☐ Size A $ 4,700 ☐ Size B $ 3,200 ☐ Size C $ 1,700 $ ____

☐ Environmental Assessment

☐ Environmental Assessment for Dam Removal (§105.12(a)(16)) $ 500 $ ____

☐ Non-Jurisdictional Dams $ 900 $ ____

☐ Letter of Amendment or Authorization

☐ Size A $ 1,400 ☐ Size B $ 1,000 ☐ Size C $ 900 $ ____

☐ Transfer of Dam Permit

☐ No Proof of Financial Responsibility $ 550 ☐ Proof of Financial Responsibility $300 $ ____

☐ Annual Registration

☐ Hazard 1 $ 1,500 ☐ Hazard 2 $ 1,500 ☐ Hazard 3 $ 800 $ ____

PART TWO: SECTION B. OTHER FEE(S) subtotal (b) $ ____

PART TWO: FEE(S) TOTAL (a+b=c) $ ____

DEP USE ONLY			
FEE TOTAL:	_____	Permit / Authorization Number (s):	_____
Correct Amount:	_____	Check #:	_____ _____
Check amount:	_____	Payable to:	_____ _____

GP Fee Explanation (#):

GP #	Description	Fee	Fee Explanation (#)
GP-1	Fish Habitat Enhancement Structures	$ 50	Fee is assessed per project not per individual structure.
GP-2	Small Docks and Boat Launching Ramps	$175	Fee is assessed per individual dock or boat ramp. The fee is the **number of docks and ramps** totaled times the fee.
GP-3	Bank Rehabilitation, Bank Protection and Gravel Bar Removal	$250	Fee is assessed per project and not individual bank or gravel bar removal locations. Only one single and complete project along a continuous stream reach not exceeding 500 feet measured down centerline of stream. Additional projects or areas must be separately registered and the fee would apply to each registration.
GP-4	Intake and Outfall Structures	$200	Fee is assessed per individual intake or outfall structure. The fee is the total **number of structures** times the fee.
GP-5[2]	Utility Line Stream Crossings[2]	$250	Fee is assessed per individual utility line or conduit crossing (a wetland and stream crossing may be separate crossings even if adjacent). The fee is the total **number of utility lines** times the ***number of resource crossings*** times the fee.
GP-6	Agricultural Crossings and Ramps	$ 50	Fee is assessed per individual crossing or ramp structure. The fee is the total **number of crossings and ramps** times the fee.
GP-7[2]	Minor Road Crossings[2]	$350	Fee is assessed per individual minor road crossing (a wetland and stream crossing may be separate crossings even if adjacent). The fee is the total **number of road crossings** times the fee.
GP-8[2]	Temporary Road Crossings[2]	$175	Fee is assessed per individual temporary road crossing (a wetland and stream crossing may be separate crossings even if adjacent). The fee is the total **number of temporary road crossings** times the fee.
GP-9	Agricultural Activities	$ 50	Fee is assessed per project not per individual structure or activity. Multiple projects can be registered under a single registration and as such the fee is applied to each project and then totaled.
GP-10	Abandoned Mine Reclamation	$500	Fee is assessed per project not per individual activity. Multiple projects can be registered under a single registration and as such the fee is applied to each project and then totaled.
GP-11[1]	Maintenance, Testing, Repair, Rehabilitation, or Replacement of Water Obstructions and Encroachments[1]	$750	Fee is assessed for each registration package (can include multiple activities or structures) **and is added to the permanent and temporary disturbance review fees** calculated for each registration package respectively.
GP-15[1]	Private Residential Construction in Wetlands[1]	$750	Fee is assessed for each registration package (can include multiple activities or structures) **and is added to the permanent and temporary disturbance review fees** calculated for each registration package respectively.

Water Obstruction and Encroachment Examples:

1. **GP-7 Minor Road Crossing:** Minor road crossing of a stream that qualifies for BDWM GP-07.

☒ **GENERAL PERMIT(S)** (select activity/structure(s) below)
Some activities or structures within a project requiring an Individual Water Obstruction and Encroachment Permit may qualify for an accumulation of General Permit fees, please mark the corresponding fee(s) below but not the box above indicating a General Permit.

☒ GP-7 Minor Road Crossings.....1 (#) x $ 350 = $ 350

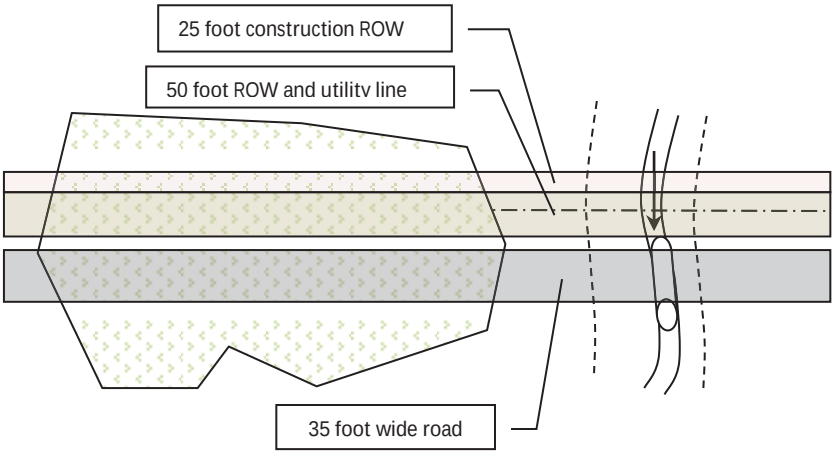
GP(s) FEE subtotal (b) $ 350

2. **Joint Permit Application for Individual Water Obstruction Encroachment Permit:** The project proposes to construct an access road requiring the placement of fill in 0.27 acres of wetlands as part of a residential subdivision.

☒ Administrative Filing Fee ..... $ 1,750 +
☐ Temporary Disturbance ($400/0.1ac) .....0.0 acres x $4,000 = $ 0 +
☒ Permanent Disturbance ($800/0.1ac) .....0.3 acres x $8,000 = $ 2,400 = $ 4,150

WO&E FEE subtotal (a) $ 4,150

3. Joint Permit Application for Individual Water Obstruction Encroachment Permit: The project proposes to construct an access road and utility line through a wetland and stream. The road will require placement of fill in 0.28 acres of wetlands, placement of a 45 foot long x 36 inch CMP in the stream and placement of fill in the floodway for road approaches to the culvert (east approach 35 feet wide x 4 feet deep x 50 feet long and west approach 35 feet wide x 2 feet deep x 15 feet). The utility line is 30 inch diameter steel pipe carrying petroleum products. The utility line will be open trenched through the wetland with a permanent right of way of 50 feet x 350 feet and an additional construction right of way 25 feet x 350 feet. The utility line will be open trenched traversing through the entire floodway and stream with a permanent right of way totaling 50 feet x 68 feet (east floodway 50 feet x 50 feet, stream 50 feet x 3 feet and west floodway 50 feet x 15 feet) and an additional construction right of way 25 feet x 68 feet.



Impact Calculations and Summary

Resource/Impact Type	Permanent	Temporary
Wetland		
Road	0.28	0
Utility Const. ROW	0	0.2
Utility Perm. ROW	0.4	0
Floodway/Stream		
Road	0.05	0
Utility Const. ROW	0	0.04
Utility Perm. ROW	0.08	0
Totals:	**0.81**	**0.24**
Rounded Totals:	**0.9**	**0.3**

☒ Administrative Filing Fee ..... $ 1,750 +
☒ Temporary Disturbance ($400/0.1ac) .....0.3 acres x $4,000 = $ 1,200 +
☒ Permanent Disturbance ($800/0.1ac) .....0.9 acres x $8,000 = $ 7,200 = $10,150

WO&E FEE subtotal (a) $10,150

4. Joint Permit Application for Individual Water Obstruction Encroachment Permit: The project proposes to construct a building, two minor road crossings that qualify for BDWM GP-07 and place three separate utility lines through a wetland and a separate stream that qualify for BDWM GP-05. The building will require placement of fill in 0.17 acres of wetlands.

☒ Administrative Filing Fee ..... $ 1,750 +
☐ Temporary Disturbance ($400/0.1ac) .....0.0 acres x $4,000 = $ 0 +
☒ Permanent Disturbance ($800/0.1ac) .....0.2 acres x $8,000 = $ 1,600 = $ 3,350

WO&E FEE subtotal (a) $ 3,350

☐ **GENERAL PERMIT(S)** (select activity/structure(s) below)

Some activities or structures within a project requiring an Individual Water Obstruction and Encroachment Permit may qualify for an accumulation of General Permit fees, please mark the corresponding fee(s) below but not the box above indicating a General Permit.

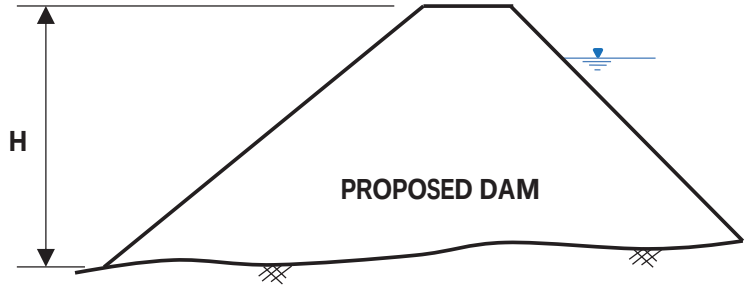
☒ GP-5 Utility Line Stream Crossings .....6 (#) x $ 250 = $ 1,500
☒ GP-7 Minor Road Crossings.....2 (#) x $ 350 = $ 700

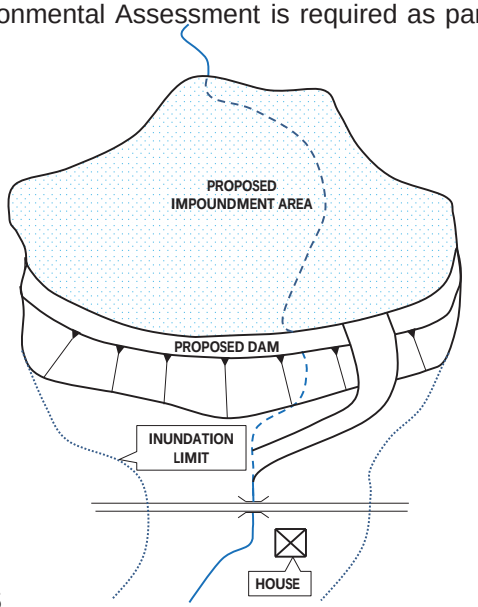
GP(s) FEE subtotal (b) $ 2,200

PART ONE: SECTION A. APPLICATION FEE(S) subtotal (a+b=c) $ 5,550

Dam Safety Examples:

5. **New Dam Permit Application:** This project proposes to construct a 25-foot high dam that has a maximum storage of 500 acre-feet of water. This dam would be classified as a size category "C" dam per §105.91. There is one home and one roadway within the inundation area downstream of the dam. This dam would have a hazard classification of "2". All stream and wetland impacts are covered under the Dam Permit Application. An Environmental Assessment is required as part of the Dam Permit Application, but a separate fee is not required.





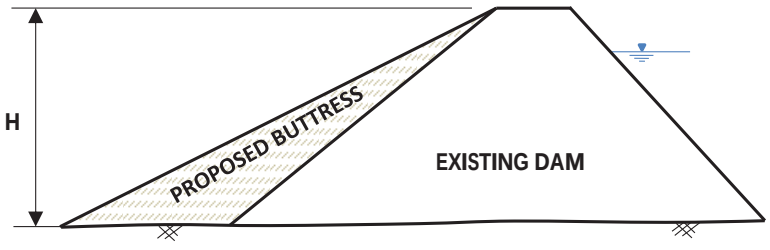
DAM SAFETY APPLICATION FEES
(TO BE FILED WITH DAM SAFETY WITH THE DAM PERMIT APPLICATION)

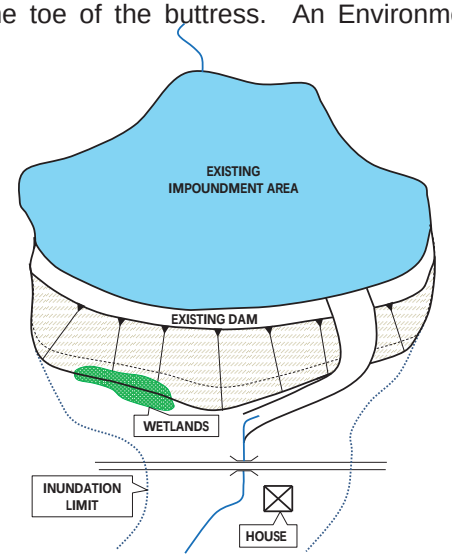
☒ **DAM PERMIT APPLICATION – NEW DAM**

☒ Size C ☐ Hazard 1 $10,500 ☒ Hazard 2 $10,500 ☐ Hazard 3 $10,000 ☐ Hazard 4 $8,000 $ 10,500

DAM SAFETY FEE total **$ 10,050**

6. **Letter of Authorization with Environmental Assessment:** This project proposes to modify a 25-foot high dam that has a maximum storage of 500 acre-feet of water. This dam would be classified as a size category "C" dam per §105.91. The proposed modification involves buttressing the downstream slope of the dam with soil to improve the stability. The total project cost will be $100,000. A small wetland area will be impacted near the toe of the buttress. An Environmental Assessment will be required to assess the impacts to the wetland.





DAM SAFETY FEES

☒ Letter of Amendment or Authorization

☒ Minor (<$250,000)

☐ Size A $ 1,300 ☐ Size B $ 1,000 ☒ Size C $ 650 $ 650

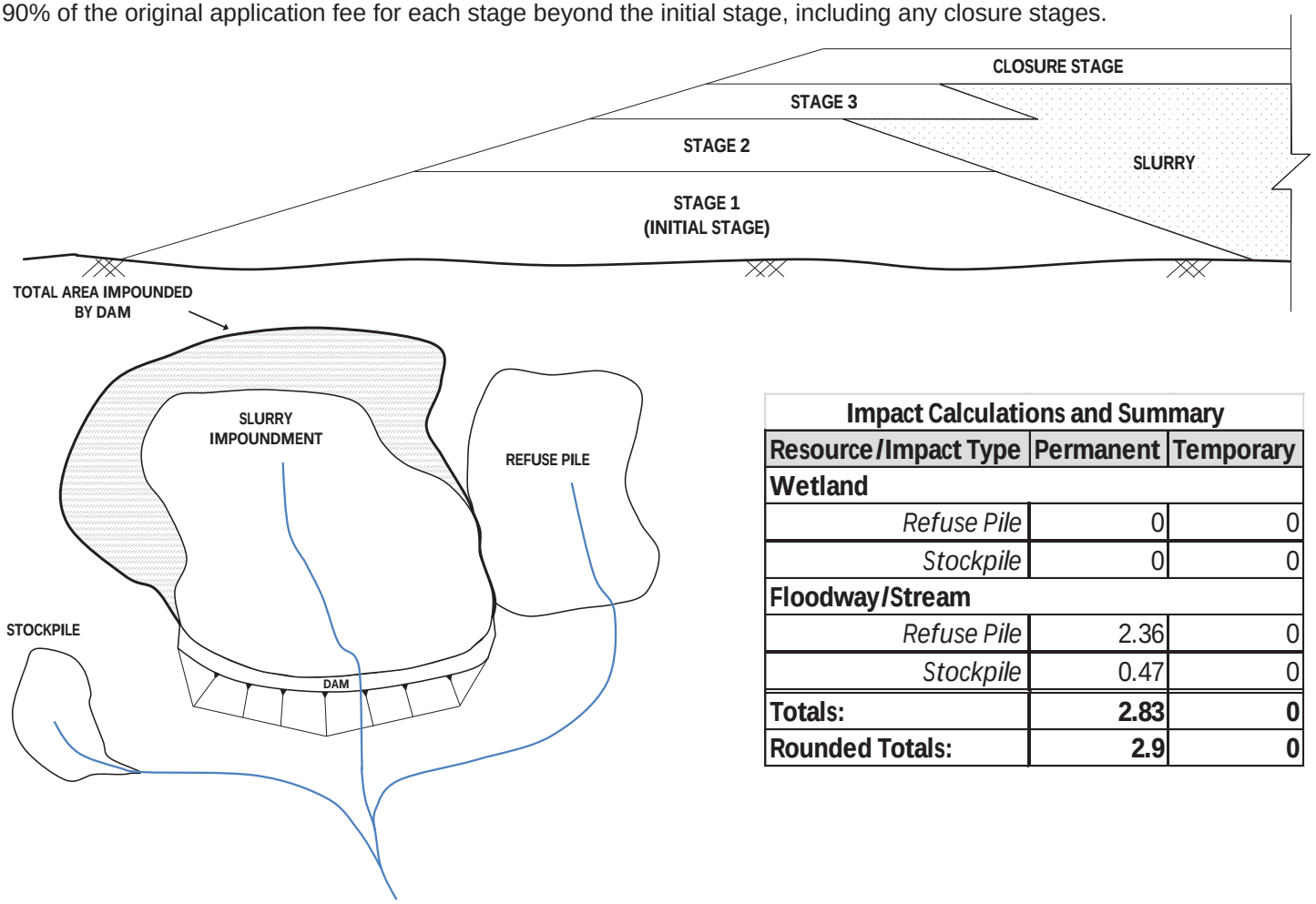
☒ Environmental Assessment

☒ Letter of Amendment or Authorization

☐ Size A $ 1,400 ☐ Size B $ 1,000 ☒ Size C $ 900 $ 900

DAM SAFETY FEE total **$ 1,550**

7. **New Dam Permit Application with Staged Construction and Disturbance Review Fees:** The project proposes to construct a staged construction, high hazard dam, to be utilized for containing a slurry impoundment. There will also be a refuse pile constructed adjacent to the slurry impoundment impacting 1000 linear feet of stream, causing a permanent disturbance to the 3-foot wide stream and 50 feet of floodway on either side of the stream [1000 x (50+3+50)]. A refuse stockpile will also impact 200 linear feet of stream, causing a permanent disturbance to the 3-foot wide stream and 50 feet of floodway on either side of the stream [200 x (50+3+50)]. The Dam Safety Application Fee will include the application fee for the applicable size and hazard classification of the dam. The Dam Safety Application Fee will also include a fee equal to 90% of the original application fee for each stage beyond the initial stage, including any closure stages.



Impact Calculations and Summary

Resource/Impact Type	Permanent	Temporary
Wetland		
Refuse Pile	0	0
Stockpile	0	0
Floodway/Stream		
Refuse Pile	2.36	0
Stockpile	0.47	0
Totals:	**2.83**	**0**
Rounded Totals:	**2.9**	**0**

WATER OBSTRUCTION AND ENCROACHMENT FEES
(TO BE FILED WITH DEP REGIONAL OFFICE, COUNTY CONSERVATION OFFICE, OR DISTRICT MINING)

☒ Administrative Filing Fee $1,750

☐ Temporary Disturbance ($400/0.1ac) 0.0 acres x $4,000 =

☒ Permanent Disturbance ($800/0.1ac) 2.9 acres x $8,000 = $23,200

WO&E FEE total **$24,950**

DAM SAFETY APPLICATION FEES
(TO BE FILED WITH DAM SAFETY WITH THE DAM PERMIT APPLICATION)

☒ **DAM PERMIT APPLICATION – NEW DAM**

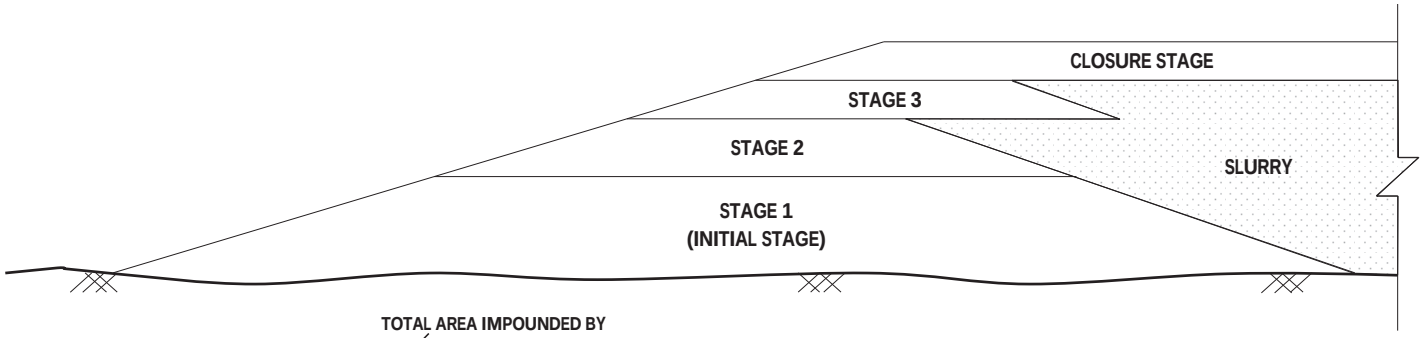
☒ Size A ☒ Hazard 1 $26,500 ☐ Hazard 2 $26,500 ☐ Hazard 3 $25,500 ☐ Hazard 4 $23,500 $ 26,500

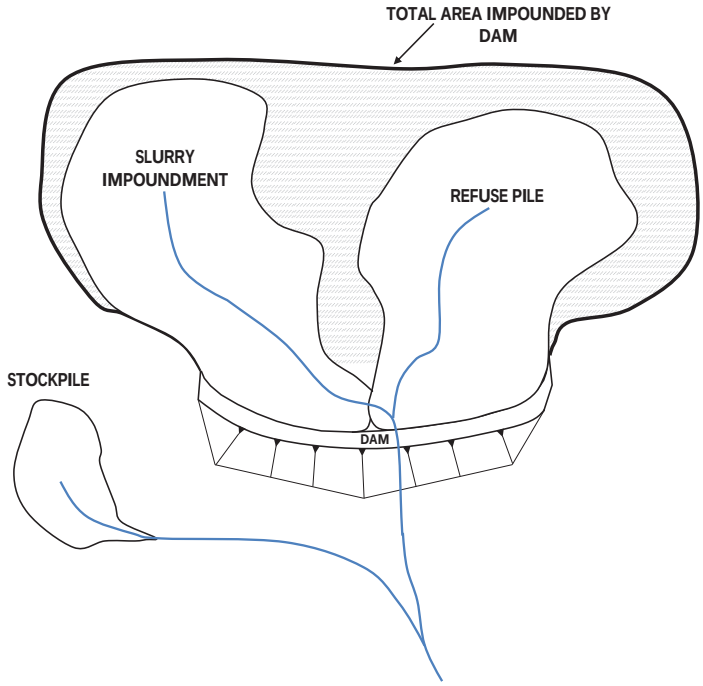
☒ **STAGED CONSTRUCTION**

No. OF STAGES BEYOND INITIAL STAGE 3 X APPLICATION FEE $26,500 X 0.90 (90%) $ 71,550

DAM SAFETY FEE total **$ 98,050**

8. **New Dam Permit Application with Staged Construction:** The project proposes to construct a staged construction, high hazard dam, to be utilized for containing a slurry impoundment and refuse pile. A refuse stockpile will also impact 200 linear feet of stream, causing a permanent disturbance to the 3-foot wide stream and 50 feet of floodway on either side of the stream [200 x (50+3+50)]. The Dam Safety Application Fee will include the application fee for the applicable size and hazard classification of the dam. The Dam Safety Application Fee will also include a fee equal to 90% of the original application fee for each stage beyond the initial stage, including any closure stages.





Impact Calculations and Summary

Resource/Impact Type	Permanent	Temporary
Wetland		
Refuse Pile	0	0
Stockpile	0	0
Floodway/Stream		
Refuse Pile	0	0
Stockpile	0.47	0
Totals:	**0.47**	**0**
Rounded Totals:	**0.5**	**0**

WATER OBSTRUCTION AND ENCROACHMENT FEES
(TO BE FILED WITH DEP REGIONAL OFFICE, COUNTY CONSERVATION OFFICE, OR DISTRICT MINING)

☒ Administrative Filing Fee $1,750

☐ Temporary Disturbance ($400/0.1ac) 0.0 acres x $4,000 =

☒ Permanent Disturbance ($800/0.1ac) 0.5 acres x $8,000 = $4,000

WO&E FEE total **$5,750**

DAM SAFETY APPLICATION FEES
(TO BE FILED WITH DAM SAFETY WITH THE DAM PERMIT APPLICATION)

☒ **DAM PERMIT APPLICATION – NEW DAM**

☒ Size A ☒ Hazard 1 $26,500 ☐ Hazard 2 $26,500 ☐ Hazard 3 $25,500 ☐ Hazard 4 $23,500 $ 26,500

☒ **STAGED CONSTRUCTION**

No. OF STAGES BEYOND INITIAL STAGE 3 X APPLICATION FEE $26,500 X 0.90 (90%) $ 71,550

DAM SAFETY FEE total **$ 98,050**

SECTION 3.0

NOTIFICATION TO THE MUNICIPALITY AND COUNTY

TETRA TECH

PITT-10-15-031

October 20, 2015

Project Number 212IC-PB-00176

Morgan Township Supervisors
Morgan Township Municipal Building
1019 Third Street Extension
PO Box 3
Mather, PA 15346

Reference: Equitrans, LP
Equitrans Expansion Project

Dear Supervisors:

This municipal notice, under the requirements of Acts 14, 67, 68, and 127, is to inform you that our client, Equitrans, LP, intends to submit a Chapter 105 permit application to the Greene County Conservation District for the following proposed project:

Project Name: Equitrans Expansion Project

\Applicant Name: Equitrans, LP
625 Liberty Avenue
Suite 1700
Pittsburgh, Pennsylvania 15222

Project Description: Equitrans, L.P. (Equitrans) proposes the Equitrans Expansion Project (Project) is located in Allegheny, Washington and Greene Counties, Pennsylvania and Wetzel County, West Virginia. The Project is designed to transport natural gas from the northern portion of the Equitrans system south to the interconnection with Mountain Valley Pipeline LLC's proposed pipeline, as well as to existing interconnects with Texas Eastern Transmission, LP and Dominion Transmission, Inc. The Project will also increase system reliability, efficiency, and operational flexibility for the benefit of all Equitrans customers.

The portion of the project in Greene County will include the installation four pipelines and new above ground facilities. The H-316 natural gas pipeline will be 1-30" natural gas transmission pipeline, approximately 3 miles long and will move gas from the new Redhook Compressor Station to Equitrans' existing H-302 pipeline for delivery to Texas Eastern or south on Equitrans' H-302 pipeline to MVP. Also in Greene County, the project involves the installation of three shorter pipelines, the M-80, the H-158, and the H-305 pipelines. The M-80 segment is a 6-inch pipeline that currently moves gas to the Pratt Compressor Station, but will be required to be extended to move gas to the Redhook Compressor Station once it is commissioned. The H-158 segment is a 12-inch pipeline that also currently moves gas to the Pratt Compressor Station, but will be required to be extended to move gas to the Redhook Compressor Station once it is commissioned. The H-305 segment is a new 24-inch pipeline extension, approximately 540 feet in length that will move gas from the Redhook Compressor Station to Equitrans' existing H-305 pipeline located at the existing Braden Run Interconnect with Texas Eastern. New above ground facilities for this portion of the project include the Redhook Compressor Station and the H-302 tie-in.

Construction activities will clearing and grubbing within the right of way, trenching, boring, pipe installation, and site restoration. This project will require crossings through numerous streams and wetlands. The pipe will be installed under the streams and wetlands by either excavating a trench or boring beneath the stream or wetland. A temporary timber bridge will be used to move equipment across the streams and wetlands to install the pipeline. Once the pipeline is installed, the trench will be filled to preconstruction elevations. The

Tetra Tech, Inc.
661 Andersen Drive, Pittsburgh, PA 15220-2700
Tel 412.921.7090 Fax 412.921.4040 www.tetratech.com

stream banks will also be restored to their original topographic features and stabilized with erosion control matting. BMPs will be used to minimize erosion during all phases of construction.

Site Location: Project crosses Franklin, Jefferson and Morgan Townships, Greene County.

Enclosed find a location map with the site indicated and the General Permit Registration Form. Please submit any comments concerning this project within 30 days from date of receipt of this letter to:

PA DEP
400 Waterfront Drive
Pittsburgh, Pennsylvania 15222
Phone: (412) 442-4000

Should you have questions regarding this matter, please do not hesitate to contact me at (412) 921-8051 or Heather.Trexler@tetratech.com. In addition, Stephanie Frazier – Supervisor Permitting - Environmental for EQT Corporation can be reached at (412) 553-5798.

Sincerely,

Heather Trexler, P.G.
Project Manager

HT/clm

Enclosure (location map and General Permit Registration Form)
cc: File 212IC-PB-00176

October 21,2015

Dear Customer:

The following is the proof-of-delivery for tracking number **653569430456**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	R.LITTEN	**Delivery location:**	1019 THIRD STREET EXTENSION MATHER, PA 15346
Service type:	FedEx Priority Overnight	**Delivery date:**	Oct 21, 2015 11:22
Special Handling:	Deliver Weekday Adult Signature Required		

Shipping Information:

Tracking number:	653569430456	**Ship date:**	Oct 20, 2015
		Weight:	0.5 lbs/0.2 kg

Recipient:
SUPERVISORS
MORGAN TOWNSHIP
1019 THIRD STREET EXTENSION
MATHER, PA 15346 US

Shipper:
TETRA TECH
TETRA TECH, INC.
661 ANDERSEN DRIVE
FOSTER PLAZA 7
PITTSBURGH, PA 15220 US

Reference ICPB00176/MORGAN TOWNSHIP
Purchase order number: 212IC-PB-00176
Department number TREXLER/MORRIS

Thank you for choosing FedEx.

TETRA TECH

PITT-10-15-032

October 20, 2015

Project Number 212IC-PB-00176

Franklin Township Supervisors
Franklin Township Municipal Building
568 Rolling Meadows Rd
Waynesburg, PA 15370

Reference: Equitrans, LP
Equitrans Expansion Project

Dear Supervisors:

This municipal notice, under the requirements of Acts 14, 67, 68, and 127, is to inform you that our client, Equitrans, LP, intends to submit a Chapter 105 permit application to the Greene County Conservation District for the following proposed project:

Project Name: Equitrans Expansion Project

Applicant Name: Equitrans, LP
625 Liberty Avenue
Suite 1700
Pittsburgh, Pennsylvania 15222

Project Description: Equitrans, L.P. (Equitrans) proposes the Equitrans Expansion Project (Project) is located in Allegheny, Washington and Greene Counties, Pennsylvania and Wetzel County, West Virginia. The Project is designed to transport natural gas from the northern portion of the Equitrans system south to the interconnection with Mountain Valley Pipeline LLC's proposed pipeline, as well as to existing interconnects with Texas Eastern Transmission, LP and Dominion Transmission, Inc. The Project will also increase system reliability, efficiency, and operational flexibility for the benefit of all Equitrans customers.

The portion of the project in Greene County will include the installation four pipelines and new above ground facilities. The H-316 natural gas pipeline will be 1-30" natural gas transmission pipeline, approximately 3 miles long and will move gas from the new Redhook Compressor Station to Equitrans' existing H-302 pipeline for delivery to Texas Eastern or south on Equitrans' H-302 pipeline to MVP. Also in Greene County, the project involves the installation of three shorter pipelines, the M-80, the H-158, and the H-305 pipelines. The M-80 segment is a 6-inch pipeline that currently moves gas to the Pratt Compressor Station, but will be required to be extended to move gas to the Redhook Compressor Station once it is commissioned. The H-158 segment is a 12-inch pipeline that also currently moves gas to the Pratt Compressor Station, but will be required to be extended to move gas to the Redhook Compressor Station once it is commissioned. The H-305 segment is a new 24-inch pipeline extension, approximately 540 feet in length that will move gas from the Redhook Compressor Station to Equitrans' existing H-305 pipeline located at the existing Braden Run Interconnect with Texas Eastern. New above ground facilities for this portion of the project include the Redhook Compressor Station and the H-302 tie-in.

Construction activities will clearing and grubbing within the right of way, trenching, boring, pipe installation, and site restoration. This project will require crossings through numerous streams and wetlands. The pipe will be installed under the streams and wetlands by either excavating a trench or boring beneath the stream or wetland. A temporary timber bridge will be used to move equipment across the streams and wetlands to install the pipeline. Once the pipeline is installed, the trench will be filled to preconstruction elevations. The stream banks will also be restored to their original topographic features and stabilized with

Tetra Tech, Inc.
661 Andersen Drive, Pittsburgh, PA 15220-2700
Tel 412.921.7090 Fax 412.921.4040 www.tetratech.com

erosion control matting. BMPs will be used to minimize erosion during all phases of construction.

Site Location: Project crosses Franklin, Jefferson and Morgan Townships, Greene County.

Enclosed find a location map with the site indicated and the General Permit Registration Form. Please submit any comments concerning this project within 30 days from date of receipt of this letter to:

PA DEP
400 Waterfront Drive
Pittsburgh, Pennsylvania 15222
Phone: (412) 442-4000

Should you have questions regarding this matter, please do not hesitate to contact me at (412) 921-8051 or Heather.Trexler@tetratech.com. In addition, Stephanie Frazier – Supervisor Permitting - Environmental for EQT Corporation can be reached at (412) 553-5798.

Sincerely,

Heather Trexler

Heather Trexler, P.G.
Project Manager

HT/clm

Enclosure (location map and General Permit Registration Form)
cc: File 212IC-PB-00176

October 21,2015

Dear Customer:

The following is the proof-of-delivery for tracking number **653569430445**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	C.KRAFT	**Delivery location:**	568 ROLLING MEADOWS ROAD WAYNESBURG, PA 153702510
Service type:	FedEx Priority Overnight	**Delivery date:**	Oct 21, 2015 10:18
Special Handling:	Deliver Weekday Adult Signature Required		

Shipping Information:

Tracking number:	653569430445	**Ship date:**	Oct 20, 2015
		Weight:	0.5 lbs/0.2 kg

Recipient:
SUPERVISORS
FRANKLIN TOWNSHIP
568 ROLLING MEADOWS ROAD
WAYNESBURG, PA 153702510 US

Shipper:
TETRA TECH
TETRA TECH, INC.
661 ANDERSEN DRIVE
FOSTER PLAZA 7
PITTSBURGH, PA 15220 US

Reference ICPB00176
Purchase order number: 212IC-PB-00176
Department number TREXLER/MORRIS

Thank you for choosing FedEx.

TETRA TECH

PITT-10-15-034

October 20, 2015

Project Number 212IC-PB-00176

Jefferson Township Supervisors
Jefferson Township Municipal Building
173 Goslin Road
Rices Landing, PA 15357

Reference: Equitrans, LP
Equitrans Expansion Project

Dear Supervisors:

This municipal notice, under the requirements of Acts 14, 67, 68, and 127, is to inform you that our client, Equitrans, LP, intends to submit a Chapter 105 permit application to the Greene County Conservation District for the following proposed project:

Project Name: Equitrans Expansion Project

Applicant Name: Equitrans, LP
625 Liberty Avenue
Suite 1700
Pittsburgh, Pennsylvania 15222

Project Description: Equitrans, L.P. (Equitrans) proposes the Equitrans Expansion Project (Project) is located in Allegheny, Washington and Greene Counties, Pennsylvania and Wetzel County, West Virginia. The Project is designed to transport natural gas from the northern portion of the Equitrans system south to the interconnection with Mountain Valley Pipeline LLC's proposed pipeline, as well as to existing interconnects with Texas Eastern Transmission, LP and Dominion Transmission, Inc. The Project will also increase system reliability, efficiency, and operational flexibility for the benefit of all Equitrans customers.

The portion of the project in Greene County will include the installation four pipelines and new above ground facilities. The H-316 natural gas pipeline will be 1-30" natural gas transmission pipeline, approximately 3 miles long and will move gas from the new Redhook Compressor Station to Equitrans' existing H-302 pipeline for delivery to Texas Eastern or south on Equitrans' H-302 pipeline to MVP. Also in Greene County, the project involves the installation of three shorter pipelines, the M-80, the H-158, and the H-305 pipelines. The M-80 segment is a 6-inch pipeline that currently moves gas to the Pratt Compressor Station, but will be required to be extended to move gas to the Redhook Compressor Station once it is commissioned. The H-158 segment is a 12-inch pipeline that also currently moves gas to the Pratt Compressor Station, but will be required to be extended to move gas to the Redhook Compressor Station once it is commissioned. The H-305 segment is a new 24-inch pipeline extension, approximately 540 feet in length that will move gas from the Redhook Compressor Station to Equitrans' existing H-305 pipeline located at the existing Braden Run Interconnect with Texas Eastern. New above ground facilities for this portion of the project include the Redhook Compressor Station and the H-302 tie-in.

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661 Andersen Drive, Pittsburgh, PA 15220-2700
Tel 412.921.7090 Fax 412.921.4040 www.tetratech.com

erosion control matting. BMPs will be used to minimize erosion during all phases of construction.

Site Location: Project crosses Franklin, Jefferson and Morgan Townships, Greene County.

Enclosed find a location map with the site indicated and the General Permit Registration Form. Please submit any comments concerning this project within 30 days from date of receipt of this letter to:

PA DEP
400 Waterfront Drive
Pittsburgh, Pennsylvania 15222
Phone: (412) 442-4000

Should you have questions regarding this matter, please do not hesitate to contact me at (412) 921-8051 or Heather.Trexler@tetratech.com. In addition, Stephanie Frazier – Supervisor Permitting - Environmental for EQT Corporation can be reached at (412) 553-5798.

Sincerely,

Heather Trexler

Heather Trexler, P.G.
Project Manager

HT/clm

Enclosure (location map and General Permit Registration Form)
cc: File 212IC-PB-00176

October 23,2015

Dear Customer:

The following is the proof-of-delivery for tracking number **653569430423**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	K.COTTLE	**Delivery location:**	JEFFERSON TOWNSHIP MUNICIPAL B RICES LANDING, PA 15357
Service type:	FedEx Priority Overnight	**Delivery date:**	Oct 22, 2015 12:04
Special Handling:	Deliver Weekday Adult Signature Required		

Shipping Information:

Tracking number:	653569430423	**Ship date:**	Oct 20, 2015
		Weight:	0.5 lbs/0.2 kg

Recipient:
SUPERVISORS
JEFFERSON TOWNSHIP
JEFFERSON TOWNSHIP MUNICIPAL BLDG
173 GOSLIN ROAD
RICES LANDING, PA 15357 US

Shipper:
TETRA TECH
TETRA TECH, INC.
661 ANDERSEN DRIVE
FOSTER PLAZA 7
PITTSBURGH, PA 15220 US

Reference ICPB00176/JEFFERSON TWP
Purchase order number: 212IC-PB-00176
Department number TREXLER/MORRIS

Thank you for choosing FedEx.

TETRA TECH

PITT-10-15-033

October 12, 2015

Project Number 212IC-PB-00176

Greene County Commissioners
Greene County Office Building
93 East High Street
Waynesburg, Pennsylvania 15370

Reference: Equitrans, LP
Equitrans Expansion Project

Dear Commissioners:

This municipal notice, under the requirements of Acts 14, 67, 68, and 127, is to inform you that our client, Equitrans, LP, intends to submit a Chapter 105 permit application to the Greene County Conservation District for the following proposed project:

Project Name: Equitrans Expansion Project

Applicant Name: Equitrans, LP
625 Liberty Avenue
Suite 1700
Pittsburgh, Pennsylvania 15222

Project Description: Equitrans, L.P. (Equitrans) proposes the Equitrans Expansion Project (Project) is located in Allegheny, Washington and Greene Counties, Pennsylvania and Wetzel County, West Virginia. The Project is designed to transport natural gas from the northern portion of the Equitrans system south to the interconnection with Mountain Valley Pipeline LLC's proposed pipeline, as well as to existing interconnects with Texas Eastern Transmission, LP and Dominion Transmission, Inc. The Project will also increase system reliability, efficiency, and operational flexibility for the benefit of all Equitrans customers.

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661 Andersen Drive, Pittsburgh, PA 15220-2700
Tel 412.921.7090 Fax 412.921.4040 www.tetratech.com

erosion control matting. BMPs will be used to minimize erosion during all phases of construction.

Site Location: Project crosses Franklin, Jefferson and Morgan Townships, Greene County.

Enclosed find a location map with the site indicated and the General Permit Registration Form. Please submit any comments concerning this project within 30 days from date of receipt of this letter to:

PA DEP
400 Waterfront Drive
Pittsburgh, Pennsylvania 15222
Phone: (412) 442-4000

Should you have questions regarding this matter, please do not hesitate to contact me at (412) 921-8051 or Heather.Trexler@tetratech.com. In addition, Stephanie Frazier – Supervisor Permitting - Environmental for EQT Corporation can be reached at (412) 553-5798.

Sincerely,

Heather Trexler

Heather Trexler, P.G.
Project Manager

HT/clm

Enclosure (location map and General Permit Registration Form)
cc: File 212IC-PB-00176

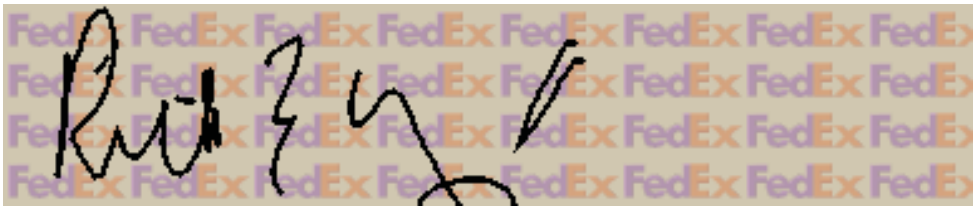
October 21,2015

Dear Customer:

The following is the proof-of-delivery for tracking number **653569430434**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	R.THORNBERG	**Delivery location:**	93 E HIGH ST WAYNESBURG, PA 15370
Service type:	FedEx Priority Overnight	**Delivery date:**	Oct 21, 2015 10:09
Special Handling:	Deliver Weekday Adult Signature Required		



Shipping Information:

Tracking number:	653569430434	**Ship date:**	Oct 20, 2015
		Weight:	0.5 lbs/0.2 kg

Recipient:
COMMISSIONERS
GREENE COUNTY
GREENE COUNTY OFFICE BLDG, 3RD FL.
93 E. HIGH STREET
WAYNESBURG, PA 15370 US
Reference
Purchase order number:
Department number

Shipper:
TETRA TECH
TETRA TECH, INC.
661 ANDERSEN DRIVE
FOSTER PLAZA 7
PITTSBURGH, PA 15220 US
ICPB00176/GREENE COUNTY
212IC-PB-00176
TREXLER/MORRIS

Thank you for choosing FedEx.

SECTION 4.0

PASPGP-4 CUMULATIVE IMPACTS PROJECT SCREENING FORM

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERWAYS ENGINEERING AND WETLANDS

DEP USE ONLY
☐ Category I
☐ Category II
☐ Category III

Applicant / Project Name: Equitrans, LP/ Equitrans Expansion Project	County(s): Allegheny, Greene, Washington

PASPGP-4 CUMULATIVE IMPACTS PROJECT SCREENING FORM

The following questionnaire must be completed and submitted to determine the appropriate Pennsylvania State Programmatic General Permit-4 (PASPGP-4) review procedure. Incomplete submissions will be returned. An "Overall Project," as defined for this form, includes all regulated activities that are reasonably related and necessary to accomplish the "Overall Project" purpose. An "Overall Project" must have a clear purpose, be able to function, and have independent utility. All regulated activities, including the direct and indirect impacts occurring as a result of the regulated activities, which are associated with the "Overall Project", should be considered cumulatively when completing this form. For linear projects, all impacts to waters and wetlands associated with the "Overall Project" should be added together and cumulatively viewed as impacts associated with the "Overall Project", which must have a defined beginning and end point. For linear projects, the application shall include a plan that depicts the location of the beginning and end points of the overall project, and all proposed crossings. See the PASPGP-4 permit document at: www.nab.usace.army.mil/Wetlands%20Permits and Part II, for the definition of Independent Utility and Single and Complete Project (discussion of "Overall Project").

The PASPGP-4authorizes the discharge of dredged or fill materials and/or the placement of structures, for a single and complete project, including all attendant features, both temporary and/or permanent, which individually or cumulatively results in impacts to 1.0 acre or less of waters of the United States including jurisdictional wetlands. These discharges and placement of structures must comply with all the terms, conditions, and processing procedures identified in this PASPGP-4. Refer to the definitions and sketches in PASPGP-4, Part II for calculating the 1.0-acre eligibility threshold for linear projects.

Determination of PASPGP-4 eligibility – For Category I and II Activities, PADEP/County Conservation Districts will review the applications, if applicable, and verify if work is authorized by PASPGP-4. For Category III Activities, the Corps reviews applications and makes a case by case determination that work is eligible for authorization under PASPGP-4.

Applications for activities that individually or cumulatively impact more than 1.0 acre of waters of the United States, including jurisdictional wetlands, including all attendant features, both temporary and permanent, for a single and complete project; or that impact greater than 250 linear feet of streams, rivers, or other watercourses, except fish habitat enhancement structures authorized under PADEP GP-1 and bank rehabilitation and protection, authorized under PADEP GP-3 that affect 500 linear feet or less, are sent to the Corps as a Category III Activity, under PASPGP-4, Part IV, C, 2. The 1.0 acre area measurement includes the sum total of all waters of the United States including both jurisdictional wetlands and streams, rivers, other watercourses.

- For linear projects, the 250 linear foot Category III Activity threshold for stream impacts is applied to the total cumulative impacts of all crossings associated with the overall linear project, regardless of the type of PADEP authorization or combination of authorizations used to approve the overall project.
- Overall linear projects that have cumulative permanent and temporary impacts to waters of the United States, including jurisdictional wetlands, which exceed 1.0 acre, may still be eligible for PASPGP-4 authorization through a Category III review, provided no single and complete project exceeds the 1 acre threshold (see PASPGP-4, Part II for definition of single and complete project and acreage calculations). This verification of eligibility will be made by the Corps of Engineers.
- For phased projects, including phased linear projects, an overall project plan depicting all previously authorized or proposed impacts to waters and/or wetland is required as part of the application. A plan depicting phase I of the overall project would be submitted with any applications associated with phase I. At a later date, when applications associated with phase II are submitted, an overall plan that depicts the impacts for phase I and phase II is required. For example, if a utility line was previously authorized to run from point A to point B, and the permittee now wants to expand the utility line to point C, the plan will depict from point A to point C. In such a case, the overall project has been expanded to extend from point A to point C; the portion from point A to point B is needed for the section from point B to point C to function and meet the overall project purpose. If plan is not submitted as part of application, the application for the purposes of PASPG-4 will be considered incomplete and the application may be sent to the Corps as a Category III Activity.

SECTION A: PROPOSED IMPACTS

Provide the size of impacts to waters and/or wetlands associated with your application, including temporary and/or permanent impacts, and direct and indirect impacts.

Included in this calculation are the areas directly and indirectly affected by the regulated activities, including the area of waters and/or wetlands filled, drained and/or flooded as a result of the regulated activities. See PASPGP-4, Part II, Definitions, for calculation of linear footage of stream impact, and Part IV, C, 2 for thresholds which require a Corps review of application (Category III Activity).

PADEP GP–11 allows for the registration of multiple overall projects at one time through submission of a project/work site table that identifies each of the separate overall projects. For work associated with PADEP GP-11 registrations, impacts associated with each project/work site should be list separately. This can be done through a separate PASPGP-4 Project Screening Form for each project/work site, or submission of a separate document/table that identifies each separate project/work site, the proposed work and impact information, as required by this section.

		square feet	linear feet
Permanent Impacts	**to waters:**	0	0
	to wetlands:	4181	
Temporary Impacts	**to waters:**	16038.5	1370.6
	to wetlands:	48472	

SECTION B: OTHER CHAPTER 105/SECTION 10/404 AUTHORIZATIONS

YES NO

☐ ☒ 1. If known, has any work associated with the Overall Project been previously authorized by the Corps or DEP? If YES, please complete the table below. If additional space is needed, please attach the applicable information. Include the type of authorization or permit, permit or authorization number(s), date(s) of issuance, and permitted impacts (including square feet and/or linear footage), if applicable, with your application/registration form(s).Types of authorizations or permits may be abbreviated and include: Corps Nationwide Permit, Corps Individual Permit, Corps PASPGP, DEP General Permit, DEP Individual Permit (Dam and/or Encroachment) or DEP Environmental Assessment. See PASPGP-4, Part IV, C, 3 for applications which require a Corps review (Category III Activity).

EXAMPLES:

a. If application is associated with the expansion of a residential development, i.e., construction of phase II, the authorizations and impacts, if applicable, associated with construction of phase I are to be identified and listed.

b. If application is associated with a linear project, i.e., sewer line, waterline, utility line, etc., and the proposed work is an extension or additional phase being added to a previous segment, the authorizations, and impacts, if applicable, associated with construction of the previous segment(s) are to be identified and listed. For example, if a utility line is constructed from point A to point B, and a year later an extension of the line to point C is proposed, the authorizations and impacts associated with construction of point A to point B should be listed/identified. In this case, the overall project is from point A to point C, as the portion from point A to point B is needed for the section from point B to point C to function and meet the overall project purpose.

Authorization Type	**Authorization Number**	**Date** (mm/dd/yyyy)	**Permitted Impacts**	
			wetlands	**waters**

YES NO

☐ ☒ 2. Are additional Corps and/or DEP authorizations required for your proposed work to function and have independent utility? If YES, please complete the table below. If additional space is needed, please attach the applicable information.

EXAMPLES:

a. Development of a residential subdivision may require the filling of waters and/or wetlands for the construction of access roads, utility line crossings, and/or lot development. In such a case, if application is only for the utility lines, the work and impacts associated with the road crossings and lot development need to be identified. For the overall development to function, the road crossings and lot development are needed, not just utilities.

b. If widening of a road for construction of a turn lane is needed to facilitate an industrial development, applications associated for the industrial development to construct utility lines and lot development need to include the work and impacts associated with the construction of the turn lane. The construction of the turn lane is needed for the industrial development to function; the two projects are not separate independent projects.

c. If the application is associated with a linear project, such as an underground electric line or waterline, and additional permits are needed for the utility lines to function, i.e., convey electricity or water from source to user, the additional work and impacts need to be identified. For the overall utility line to function the entire line needs to be constructed; a segment that will not function does not have independent utility.

Authorization Type	Date (if known)	Anticipated Impacts	
		wetlands	waters

SECTION C: ACTIVITIES RELATED TO RESIDENTIAL, COMMERCIAL AND INSTITUTIONAL DEVELOPMENTS

The term "Subdivision", for the purposes of this form, is defined as the division or redivision of a lot, tract or parcel of land into two or more lots, tracts, parcels or other divisions of land including changes to existing lot lines.

YES NO

☐ ☐ 1. Does the Overall Project involve the construction or expansion of a residential, commercial or institutional subdivision or development? If YES, proceed to question 2. If NO, leave questions 2 and 3 blank.

☐ ☐ 2. Does greater than 0.25 acres of wetlands exist within the property boundary (not including those being directly impacted as part of this application)? If YES, provide wetland acreage: _____ acres. If NO, leave question 3 blank.

☐ ☐ 3. Are you proposing to protect the wetland area(s) through a deed restriction or conservation easement that follows the Corps' Model Conservation Instruments? If YES, attach a copy of the proposed deed restriction or conservation easement to this form and submit with your application/registration form. Model Conservation Instruments are available at www.nab.usace.army.mil/Wetlands%20Permits/. Failure to submit a proposed deed restriction or conservation easement with permit application/registration form requires a Category III review under PASPGP-4, Part IV, C, 24.

SECTION D: CERTIFICATION

I certify that the information provided on this form is true and correct to the best of my knowledge and information. If any of the information and/or plans is found to be in error, falsified, and/or incomplete, your Chapter 105/PASPGP-4 authorization/verification may be subject to modification, suspension, or revocation in accordance with applicable regulations.

Signature of Applicant

22 Oct 2015

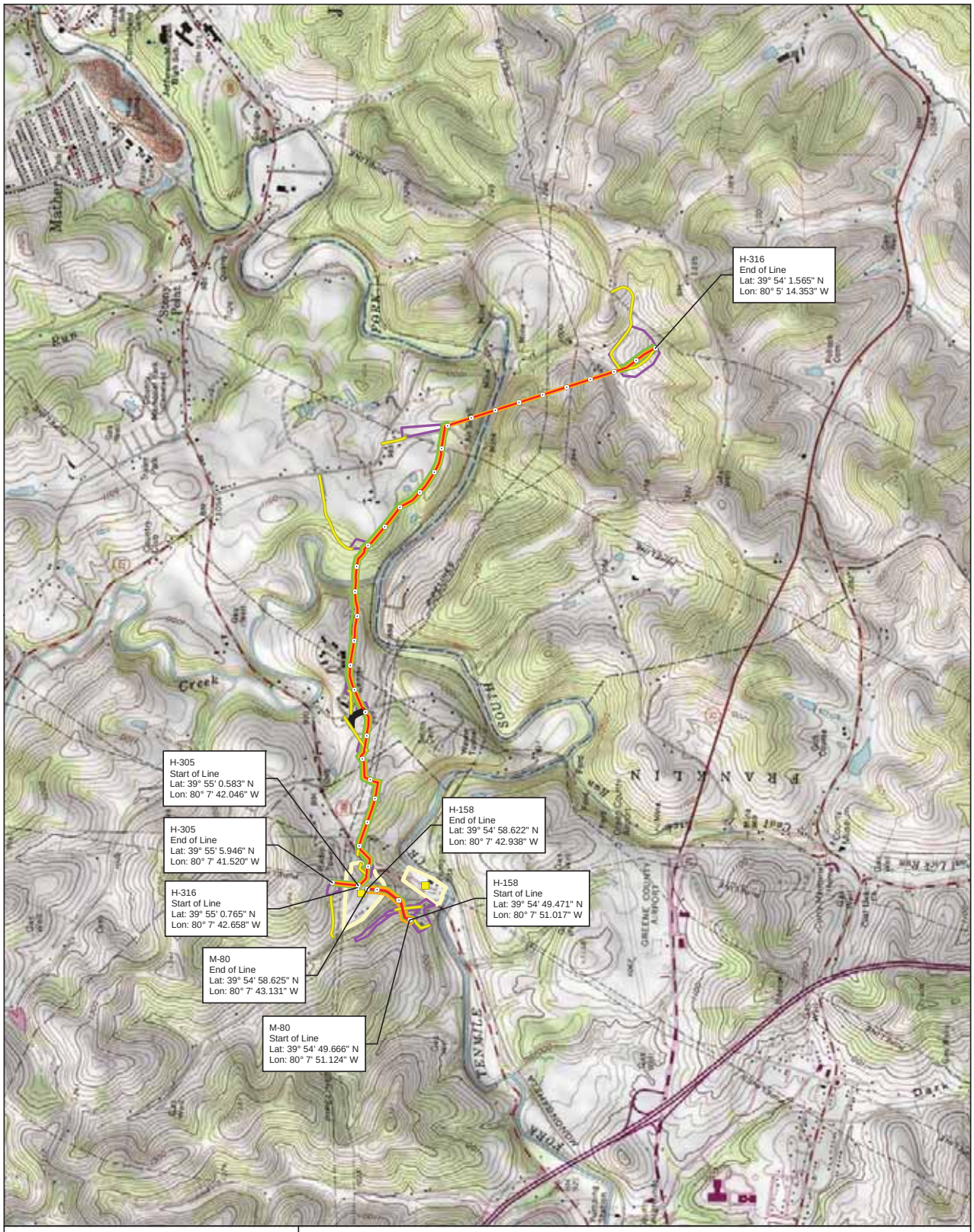
Date

Stephanie Frazier – Supervisor Permitting - Environmental

Name Typed or Printed

SECTION 5.0

LOCATION MAP



Equitrans Expansion Project

1:24,000

0 2,000 4,000 Feet

EQUITRANS

Attachment #: 1-2
USGS Project Location Map
Greene County, Pennsylvania

October 2015

Data Sources: Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station Centroid
- Compressor Station

Document Path: P:\GIS\EQT\MapDocs\eep_pa_greeneCo_usgs.mxd

Equitrans Expansion Project

N

1:24,000

0 2,000 4,000 Feet

EQUITRANS

Attachment #: 1-3
USGS Project Location Map
Greene County, Pennsylvania

October 2015

Data Sources: Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station Centroid
- Compressor Station

Document Path: P:\GIS\EQT\MapDocs\eep_pa_greeneCo_usgs.mxd

SECTION 6.0

COLOR PHOTOGRAPHS

SECTION 6.0 - COLOR PHOTOGRAPHS

Not applicable since General Permit 3 (GP-3) and/or GP-11 registration is not required for Equitrans Expansion Project (Project) activities. Photographs have been provided in the Wetland Identification and Stream Identification Report in Section 15, Attachment 15-A.

SECTION 7.0

STREAM NAME AND CHAPTER 93 CLASSIFICATIONS

Equitrans Expansion Project - Greene County
Impact Summary Table

Waters Name	Stream/ Wetland Type	PA Code 25 Chapter 93 Designated Use	Applicable Permits	Latitude (N)			Longitude (W)			Temporary Stream Impact			Installation Method/Impact	Wetlands Onsite	Wetland Impact
				DD	MM	SS	DD	MM	SS	Length (ft)*	Width (ft)**	Area (ft^2)		Area (ft^2)	Area (ft^2)
S-AA1 - UNT 81118 to South Fork Tenmile Creek	Perennial	WWF	GP-5/8	39	55	0.65	80	7	29.7	10	100	1000	open cut trench and timber mat crossing	N/A	N/A
S-AA1 - UNT 81118 to South Fork Tenmile Creek	Perennial	WWF	GP-8	39	55	0.65	80	7	29.7	N/A	N/A	N/A	timber mat crossing & workspace in floodway	N/A	N/A
S-AA2 - UNT to South Fork Tenmile Creek	Ephemeral	WWF	Waived under 105.12(a)(2)	39	54	56.3	80	7	52.3	1.5	82	123	timber mat crossing	N/A	N/A
W-AA1	PEM	WWF	GP-8	39	54	56.57	80	7	52.73	N/A	N/A	N/A	timber mat crossing	5275	3791
S-N1 - UNT to UNT 81118 to South Fork Tenmile Creek	Intermittent	WWF	Waived under 105.12(a)(2)	39	54	5.45	80	7	41.99	7	16	112	timber mat crossing	N/A	N/A
S-N2 - UNT to UNT 81118 to South Fork Tenmile Creek	Intermittent	WWF	Waived under 105.12(a)(2)	39	54	2.97	80	7	5.84	N/A	N/A	N/A	proposed permanent road in floodway	N/A	N/A
S-AA3 - UNT to South Fork Tenmile Creek	Ephemeral	WWF	Waived under 105.12(a)(2)	39	54	58.93	80	7	34.07	4	125	500	open cut trench and timber mat crossing	N/A	N/A
W-AA2	PEM	WWF	N/A	39	54	58.36	80	7	34.18	N/A	N/A	N/A	open cut trench and timber mat crossing	293	N/A
S-AA4 - UNT to South Fork Tenmile Creek	Perennial	WWF	Waived under 105.12(a)(2)	39	55	0.65	80	7	29.7	5	75	375	open cut trench and timber mat crossing	N/A	N/A
S-AA8 UNT to UNT 23572 to South Fork Tenmile Creek	Ephemeral	WWF	Waived under 105.12(a)(2)	39	55	0.35	80	6	55.5	3	75	225	open cut trench and timber mat crossing	N/A	N/A
W-AA4	PEM	WWF	GP-5/8	39	55	0.35	80	6	55.5	N/A	N/A	N/A	open cut trench and timber mat crossing	9944	4981
S-AA9 UNT to UNT 23572 to South Fork Tenmile Creek	Ephemeral	WWF	Waived under 105.12(a)(2)	39	55	1.72	80	6	50.37	4	75	225	open cut trench and timber mat crossing	N/A	N/A
W-AA7	PEM	WWF	GP-5/8	39	55	1.72	80	6	50.37	N/A	N/A	N/A	open cut trench and timber mat crossing	12464	3234
S-AA10 UNT to South Fork Tenmile Creek	Intermittent	WWF	Waived under 105.12(a)(2)	39	55	3.37	80	6	37.82	5	75	375	open cut trench and timber mat crossing	N/A	N/A
S-AA11 - UNT to Ruff Creek	Ephemeral	WWF	Waived under 105.12(a)(2)	39	55	3.04	80	6	25.22	5	75	375	open cut trench and timber mat crossing	N/A	N/A
S-AA12 - Ruff Creek	Perennial	WWF	GP-5/8	39	55	3.13	80	6	20.06	75	75	5625	open cut trench and timber mat crossing	N/A	N/A
W-AA8	PEM	WWF	N/A	39	55	2	80	6	8.5	N/A	N/A	N/A	within temporary workspace, but avoiding	1186	N/A
S-AA13 - UNT to South Fork Tenmile Creek	Ephemeral	WWF	Waived under 105.12(a)(2)	39	54	45.04	80	5	40.7	3	110	330	open cut trench and timber mat crossing	N/A	N/A
S-AA14 - UNT to South Fork Tenmile Creek	Ephemeral	WWF	Waived under 105.12(a)(2)	39	54	44.92	80	5	39.82	3	75	375	open cut trench and timber mat crossing	N/A	N/A
W-AA9	PEM	WWF	N/A	39	54	53	80	5	38.6	N/A	N/A	N/A	within temporary workspace, but avoiding	275	N/A
S-AA15 - South Fork Tenmile Creek	Perennial	WWF	GP-5	39	54	35.92	80	5	32.94	100	2.5	250	HDD Bore	N/A	N/A

S-AA24 - UNT to UNT 26514 South Fork Tenmile Creek	Intermittent	WWF	Waived under 105.12(a)(2)	39	54	27.23	80	5	28.94	6	2.5	15	HDD Bore	N/A	N/A	
S-AA23 -UNT to UNT 26514 South Fork Tenmile Creek	Ephemeral	WWF	Waived under 105.12(a)(2)	39	54	26.01	80	5	28.38	9	2.5	22.5	HDD Bore	N/A	N/A	
S-AA22 -UNT to UNT 26514 South Fork Tenmile Creek	Ephemeral	WWF	Waived under 105.12(a)(2)	39	54	25.5	80	5	28.15	7	2.5	17.5	HDD Bore	N/A	N/A	
S-AA21 - UNT to UNT 26514 South Fork Tenmile Creek	Intermittent	WWF	Waived under 105.12(a)(2)	39	54	23.69	80	5	27.31	4	2.5	10	HDD Bore	N/A	N/A	
S-AA20 - UNT to UNT 26514 to South Fork Tenmile Creek	Perennial	WWF	Waived under 105.12(a)(2)	39	54	16.3	80	5	23.92	1	2.5	2.5	HDD Bore	N/A	N/A	
W-AA10	PEM	WWF	GP-5	39	54	16.3	80	5	23.92	N/A	N/A	N/A	HDD Bore	1344	31	
S-AA17 - UNT to South Fork Tenmile Creek	Perennial	WWF	GP-5	39	54	10.63	80	5	21.31	12	2.5	30	HDD Bore	N/A	N/A	
S-AA18 - UNT to UNT 26514 to South Fork Tenmile Creek	Intermittent	WWF	Waived under 105.12(a)(2)	39	54	10.22	80	5	21.22	2	2.5	5	HDD Bore	N/A	N/A	
S-AA19 - UNT to UNT 26514 to South Fork Tenmile Creek	Intermittent	WWF	Waived under 105.12(a)(2)	39	54	9.99	80	5	21.56	N/A	N/A	N/A	HDD Bore	N/A	N/A	
S-AA16 - UNT to South Fork Tenmile Creek	Perennial	WWF	existing crossing	39	54	6.91	80	5	7.3	N/A	N/A	N/A	existing permanent road crossing	N/A	N/A	
W-M4	PEM	WWF	N/A	39	54	7.92	80	5	13.2	N/A	N/A	N/A	within temporary workspace, but avoiding	17194	N/A	
W-M6	PEM	WWF	N/A	39	54	5.76	80	5	22.2	N/A	N/A	N/A	within temporary workspace, but avoiding	259	N/A	
					Greene County Totals:					**266.5**	**978**	**9992.5**		**48234**	**12037**	**sf**
														1.11	**0.28**	**acre**
			Greene County Totals (applying for General Permits)							**197**	**180**	**6905**		**48234**	**12037**	**sf**
														1.11	**0.28**	**acre**

Note:
* As measured transversely from top of bank to top of bank
** As measured along centerline of stream from where water is directed out of the stream to where it is returned to the stream

UNT - unnamed tributary
GP - General Permit
WWF - warm water fish
N/A - not applicable

SECTION 8.0

PROJECT DESCRIPTION

SECTION 8.0 - PROJECT DESCRIPTION

8.1 DESCRIPTION

Equitrans, L.P. (Equitrans) proposes the Equitrans Expansion Project (Project) located in Allegheny, Washington and Greene Counties, Pennsylvania and Wetzel County, West Virginia. The Project is designed to transport natural gas from the northern portion of the Equitrans system south to the interconnection with Mountain Valley Pipeline LLC's proposed pipeline, as well as to existing interconnects with Texas Eastern Transmission, LP and Dominion Transmission, Inc. The Project will also increase system reliability, efficiency, and operational flexibility for the benefit of all Equitrans customers.

The portion of the project in Greene County will include the installation four pipelines and new above ground facilities. The H-316 natural gas pipeline will be 1-30" natural gas transmission pipeline, approximately 3 miles long, within a 125' wide construction ROW and 50' wide permanent ROW. The H-316 pipeline will move gas from the new Redhook Compressor Station to Equitrans' existing H-302 pipeline for delivery to Texas Eastern or south on Equitrans' H-302 pipeline to MVP. Also in Greene County, the project involves the installation of three shorter pipelines, the M-80, the H-158, and the H-305 pipelines. The H-305 pipeline will have a 100' wide construction ROW and 50' wide permanent ROW. The M-80 and H-158 pipelines will be constructed within a shared 150' construction ROW and each will have a 50' wide permanent ROW. The M-80 segment is a 6-inch pipeline that currently moves gas to the Pratt Compressor Station, but will be required to be extended to move gas to the Redhook Compressor Station once it is commissioned. The H-158 segment is a 12-inch pipeline that also currently moves gas to the Pratt Compressor Station, but will be required to be extended to move gas to the Redhook Compressor Station once it is commissioned. The H-305 segment is a new 24-inch pipeline extension, approximately 540 feet in length that will move gas from the Redhook Compressor Station to Equitrans' existing H-305 pipeline located at the existing Braden Run Interconnect with Texas Eastern. New above ground facilities for this portion of the project include the Redhook Compressor Station and the H-302 tie-in. The pipeline projects spans Franklin, Jefferson and Morgan Townships, Greene County, PA.

8.2 STREAM AND WETLAND CROSSINGS

Construction activities will include clearing and grubbing within the right of way, trenching, boring, pipe installation, and site restoration. This project will require crossings through numerous streams and wetlands.

The Greene County portion of the project will involve crossing 22 streams, Ruff Creek, South Fork Tenmile Creek, UNTs to South Fork Tenmile Creek and crossing 4 wetlands to install the pipeline. South Fork Tenmile Creek, 8 UNTs to South Fork Tenmile Creek and 1 wetland will be crossed by directional bore and the remaining streams and wetlands will be open cut. Temporary timber bridges will be used to move equipment across the streams and wetlands that are open cut. Construction of the pipeline will result in approximatley 978 linear feet and 9,993 square feet of temporary stream impacts and

12,037 square feet of temporary wetland impacts in Greene County. Waivers are being requested under Chapter 105.12(a)(2) for 18 of the stream crossings as the drainage aras for each of those streams is less than 100 acres. Once the pipeline is installed, the streams and wetlands will be restored to their original topographic condition. BMPs will be used during all phases of construction.

8.3 PENNSYLVANIA NATURAL DIVERSITY INVENTORY PROJECT ENVIRONMENTAL REIVEW

A large project PNDI was submitted to the PA Department of Conservation and Natural Resources (DCNR), PA Fish and Boat Commission, PA Game Commission, and US Fish and Wildlife Service (USFWS) on June 24, 2015 (Section 13.0).

DCNR responded that based on the PNDI review that there was the potential to impact several plant species. Field surveys to identify these species are planned for late spring and summer 2016, during the appropriate flowering time.

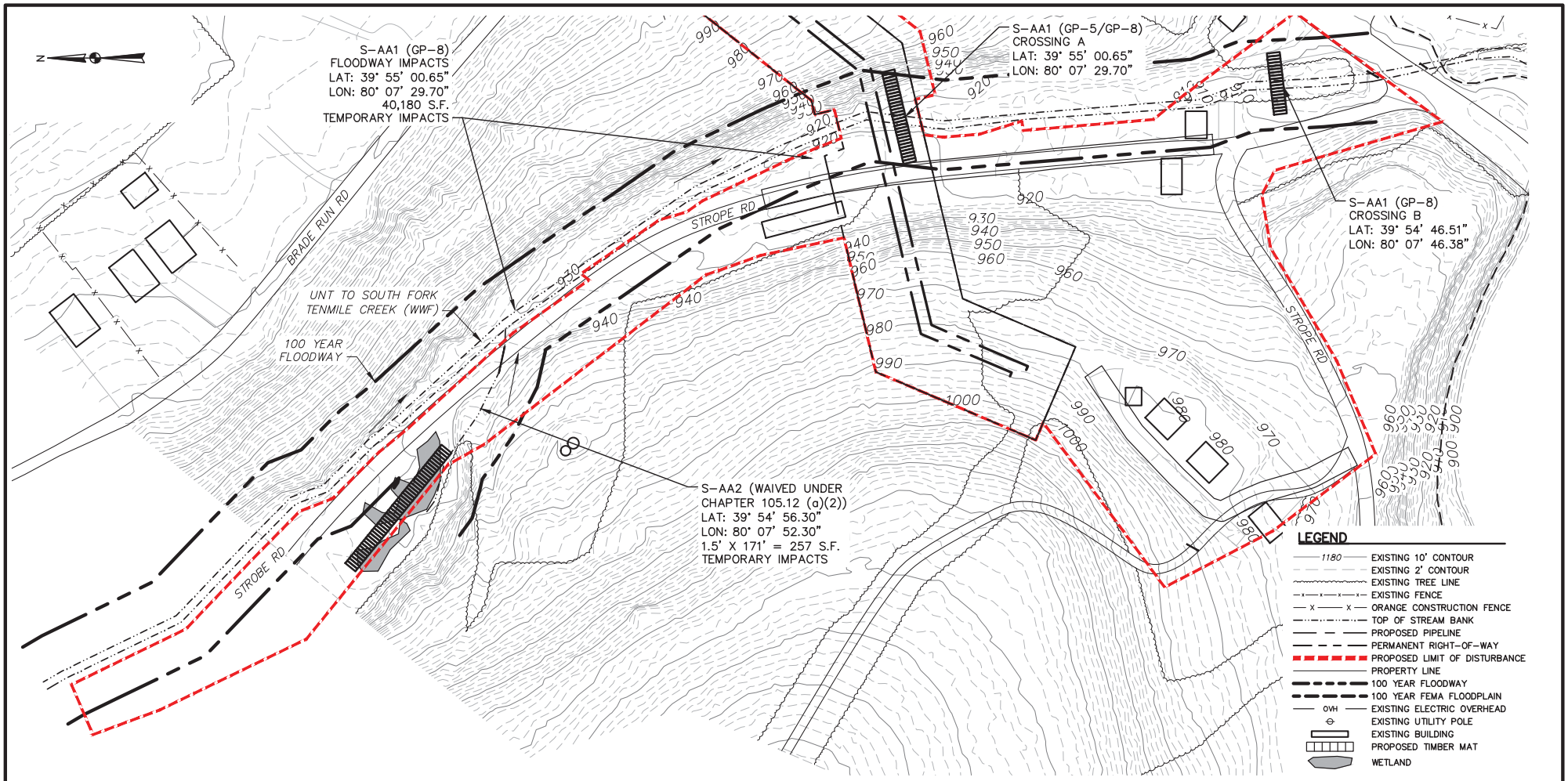
The PA Fish and Boat Commission responded that rare or protected freshwater mussel species are known in the vicinity of the project area in South Fork Tenmile Creek, Greene County. No impacts are proposed since this stream will be crossed by directional bore. A mussel survey of South Fork Tenmile Creek was conducted during October 2015 for the proposed crossing location. Native freshwater mussels were observed (in low abundunce), however, no federally listed mussels were located. A report is being prepared for submittal to PA Fish and Boat.

The PA Game Commission responded that they have no records that indicate species or resources of concern are locoated in the vicinity of the project.

The USFWS responded that the proposed project is located within the range of two bat species. Mist netting was conducted from July 26 to August 9, 2015 at 10 sites for a total of 60 complete net nights. Netting resulted in the capture of 94 bats representing three species: big brown bat (*Eptesicus fuscus*), eastern red bat (*Lasiurus borealis*), and eastern pipistrelle (*Pipistrellus subflavus*). No federally listed or state-listed bats were captured. Searches for summer bat habitat (roost trees) were completed in the Project area. Searches for underground (winter) bat habitat are on-going. Potential habitats (i.e., portals) were identified in the Project area. Portal searches along the project alignment have been completed. A report is being prepared for submittal to USFWS.

SECTION 9.0

SITE-SPECIFIC AND/OR STANDARD DRAWINGS



0 120 240
SCALE IN FEET

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EQUITRANS, LP
EQUITRANS EXPANSION PROJECT

M80/H158 PIPELINE – GREENE COUNTY
GP-5/GP-8 FOR S-AA1
PLAN

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	DZ
DRAWN BY:	DZ
CHECKED BY:	HT
SHEET:	1 OF 5

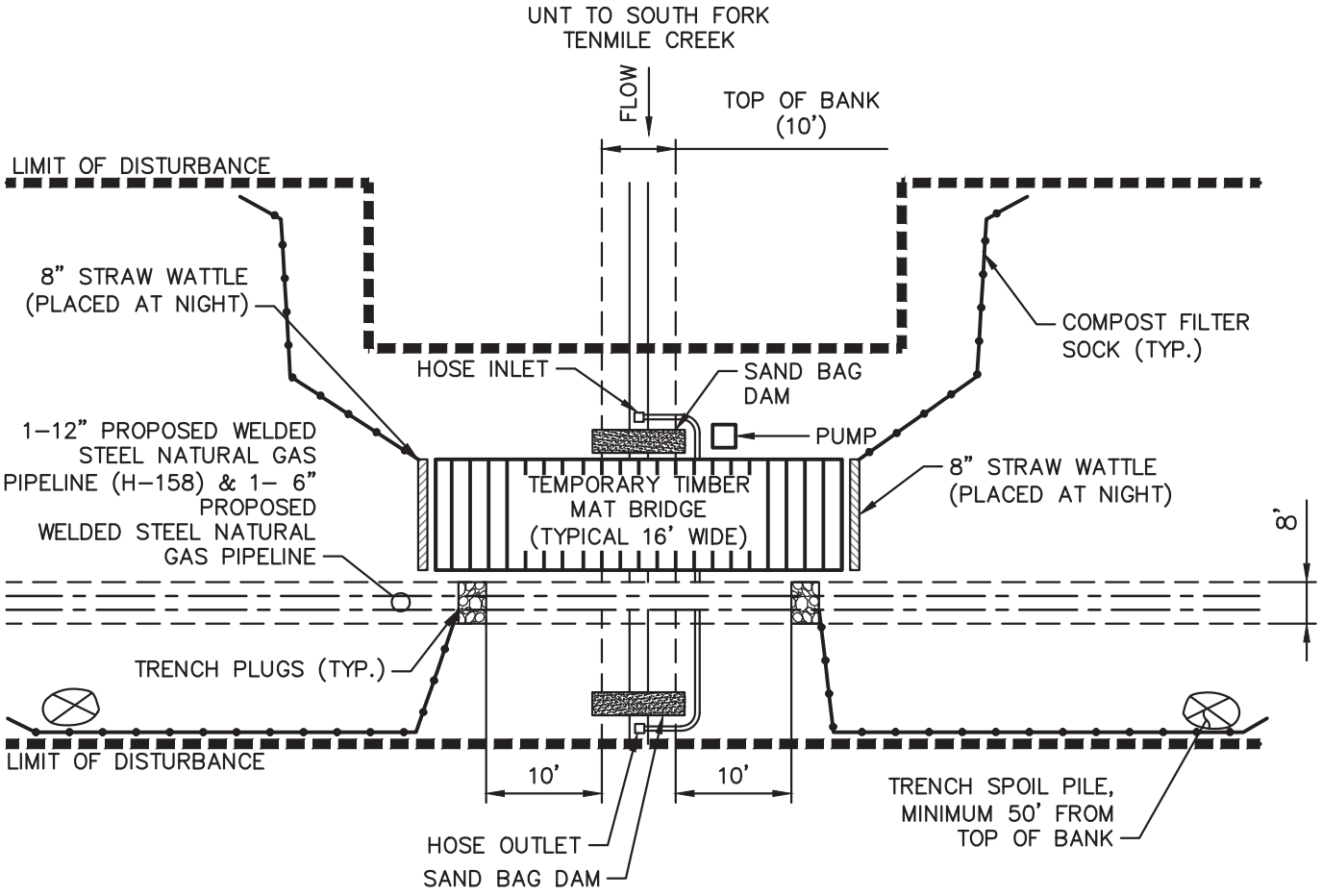
FIGURE 1

NOTES:

1. TOPO AND SITE FEATURE CREATED USING http:\\www.pasda.psu.edu.

2. TOPSOIL STOCKPILES SHALL BE LOCATED A MINIMUM OF 50' AWAY FROM THE EDGE OF THE WETLAND.

3. THE RIGHTS-OF-WAY AND EASEMENTS SHOWN ON THIS PLAN ARE THE RESPONSIBILITY OF EQUITRANS, LP TO SECURE WITH THE INDIVIDUAL PROPERTY OWNER. THE RIGHTS-OF-WAYS AND EASEMENTS SHOWN ON THIS PERMIT DRAWING REPRESENT THE BEST AVAILABLE PROPERTY INFORMATION AS PROVIDED TO TETRA TECH NUS, INC. BY EQUITRANS, LP. THE RIGHTS-OF-WAYS AND EASEMENTS SHALL BE VERIFIED AND LOCATED IN THE FIELD BY EQUITRANS, LP.



STREAM IMPACTS:
LENGTH: 10'
WIDTH: 100'
TOTAL AREA: 1,000 S.F.

PLAN
NOT TO SCALE

PENNSYLVANIA ONE CALL SYSTEM INC. 1-800-242-1776 STOP! CALL BEFORE YOU DIG!

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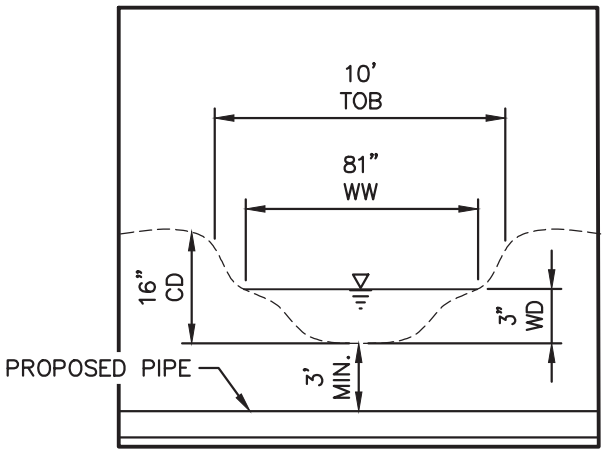
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
M80/H158 PIPELINE – GREENE COUNTY
GP-5/GP-8 FOR S-AA1
PLAN
SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 4

FIGURE 2

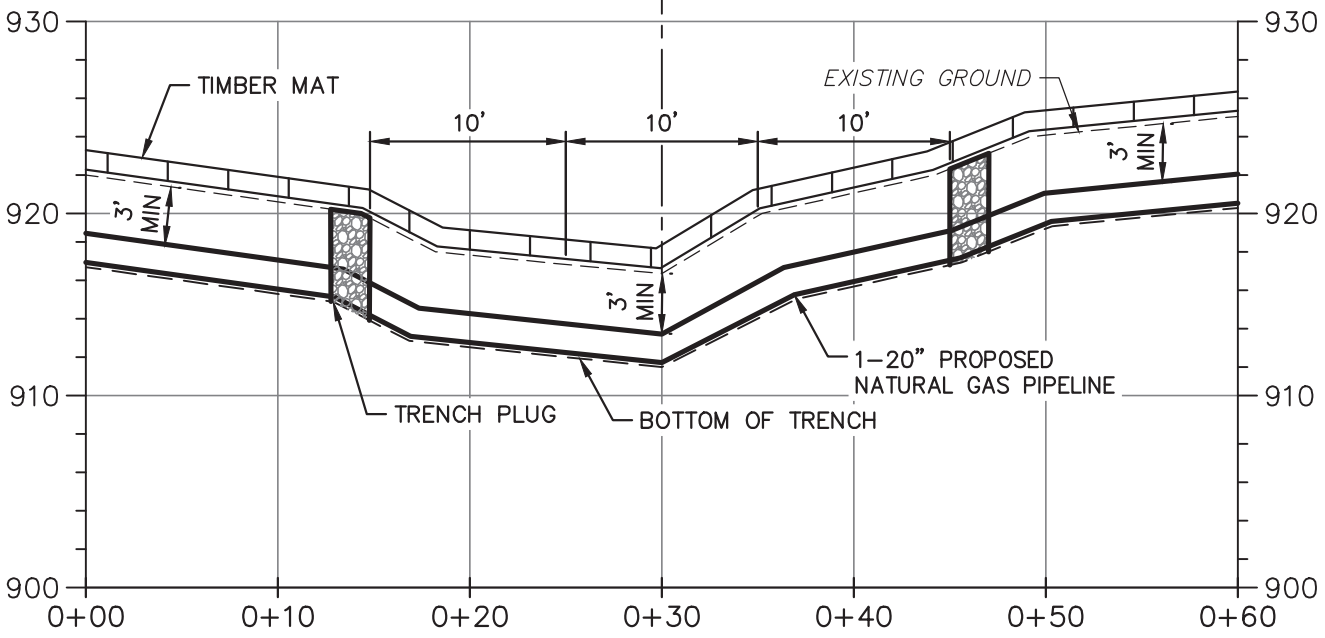
R:_212 - OGA\O&G\EQT\00176 - EEP\GPs\M80-H158\M80_H158 - 00176GP002.dwg PIT DAN.ZINDREN 10/26/2015 2:20:17 PM



NOT TO SCALE

S–AA1 CHANNEL WIDTH = 10'
S–AA1 CHANNEL DEPTH = 16"
S–AA1 WATER WIDTH = 81"
S–AA1 WATER DEPTH = 3"

S–AA1
UNT TO SOUTH FORK
TENMILE CREEK



PROFILE FOR S–AA1 OPEN–CUT TRENCH PROFILE

SCALE: HORIZ: 1" = 10'
VERT: 1" = 10'

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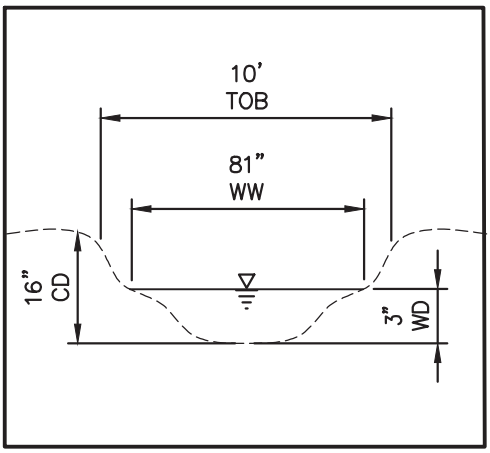
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
M80/H158 PIPELINE – GREENE COUNTY
GP–5/GP–8 FOR S–AA1
PROFILE
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	212IC–PB–00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 4

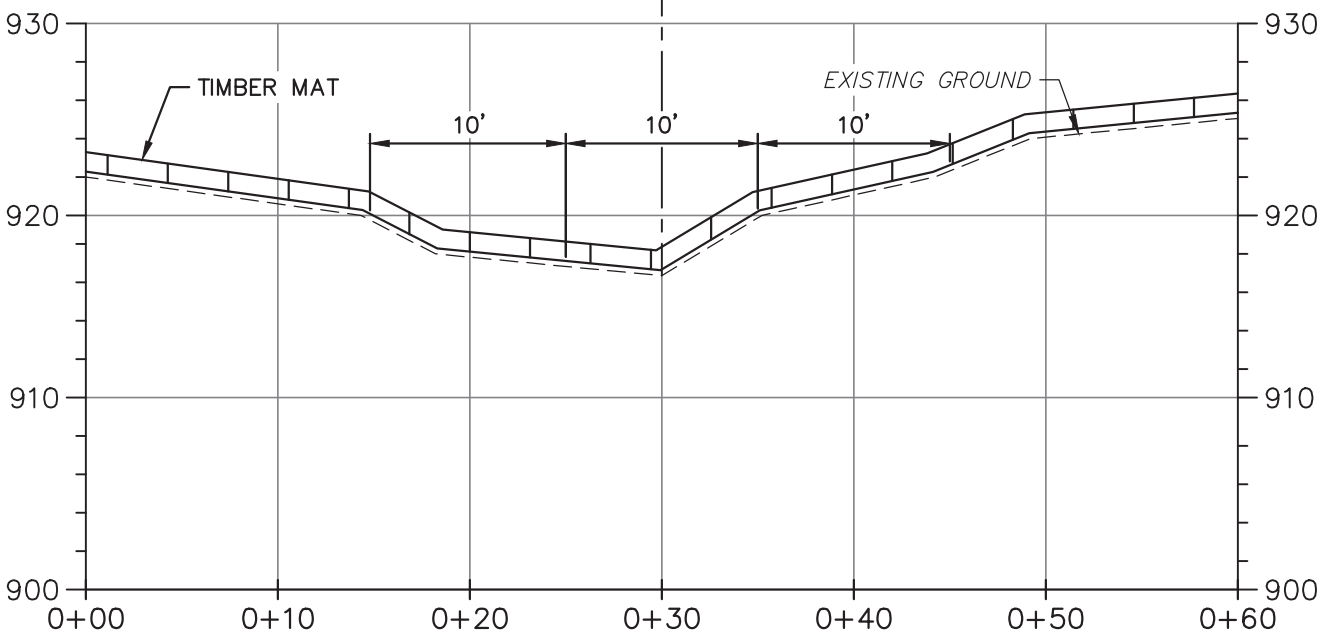
FIGURE 3A



NOT TO SCALE

S–AA1 CHANNEL WIDTH = 10'
S–AA1 CHANNEL DEPTH = 16"
S–AA1 WATER WIDTH = 81"
S–AA1 WATER DEPTH = 3"

S–AA1
UNT TO SOUTH FORK
TENMILE CREEK



PROFILE FOR S–AA1 ROAD CROSSING PROFILE

SCALE: HORIZ: 1" = 10'
VERT: 1" = 10'

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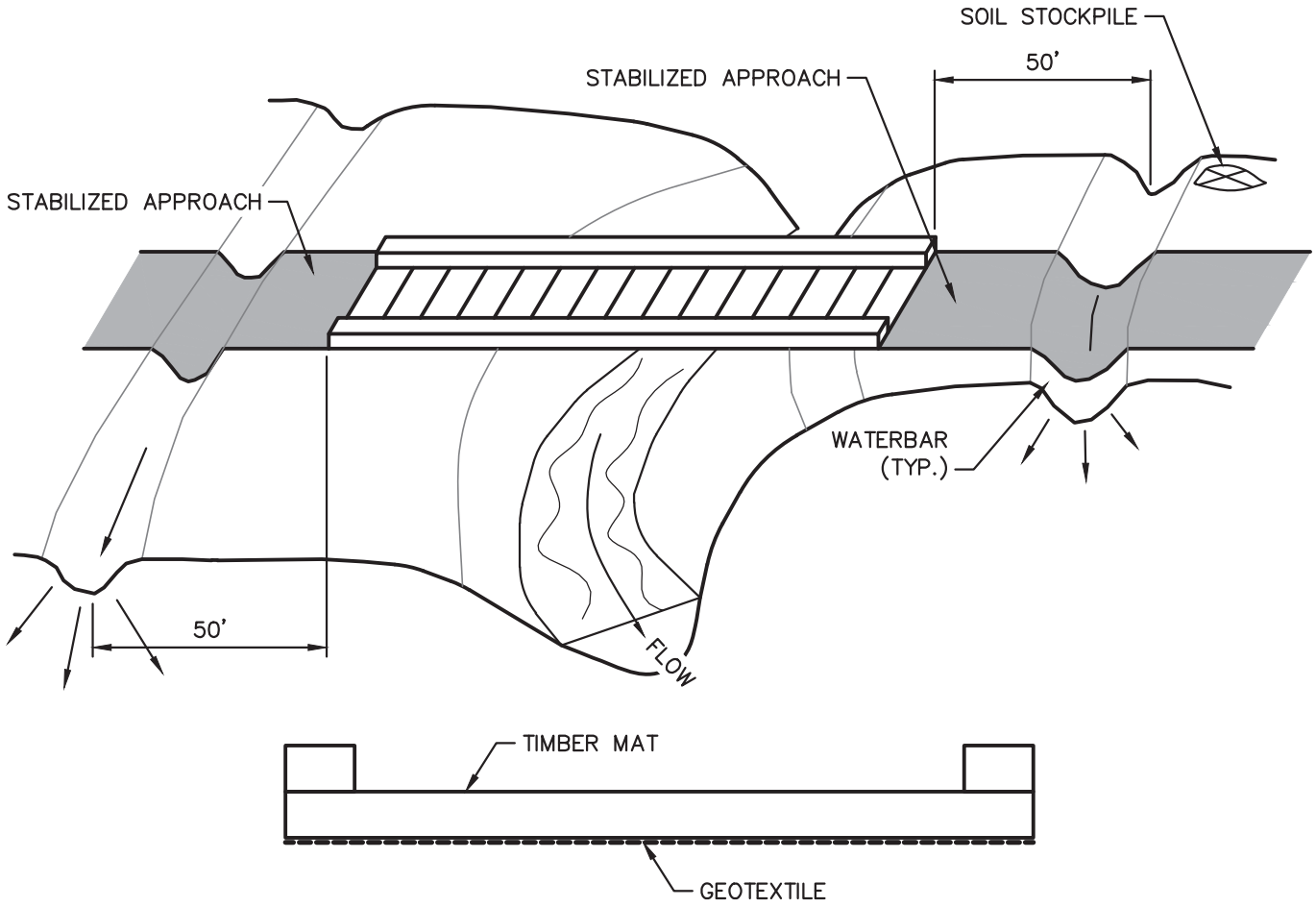
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
M80/H158 PIPELINE – GREENE COUNTY
GP–8 FOR S–AA1
PROFILE
SCALE: AS NOTED

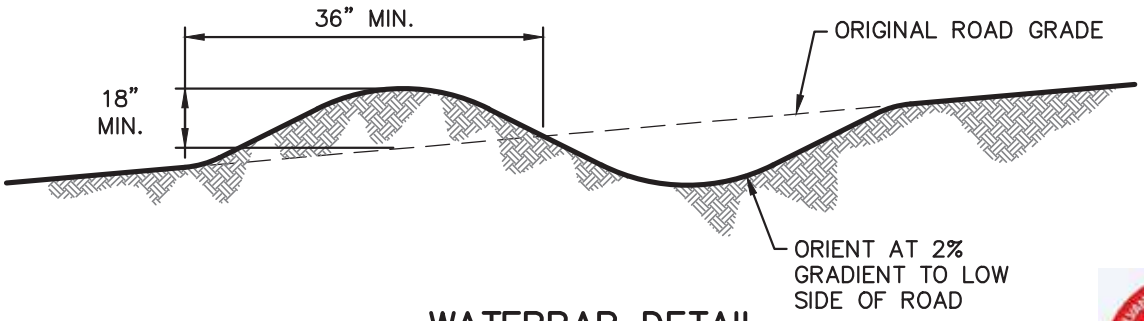
DATE:	10/23/15
PROJECT NO.:	212IC–PB–00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 4

FIGURE 3B



TEMPORARY STREAM CROSSING

NOT TO SCALE



WATERBAR DETAIL

NOT TO SCALE

NOTE:
APPROACH TO CROSSING NOT TO EXCEED A DEPTH OF 6" ABOVE ORIGINAL GRADE

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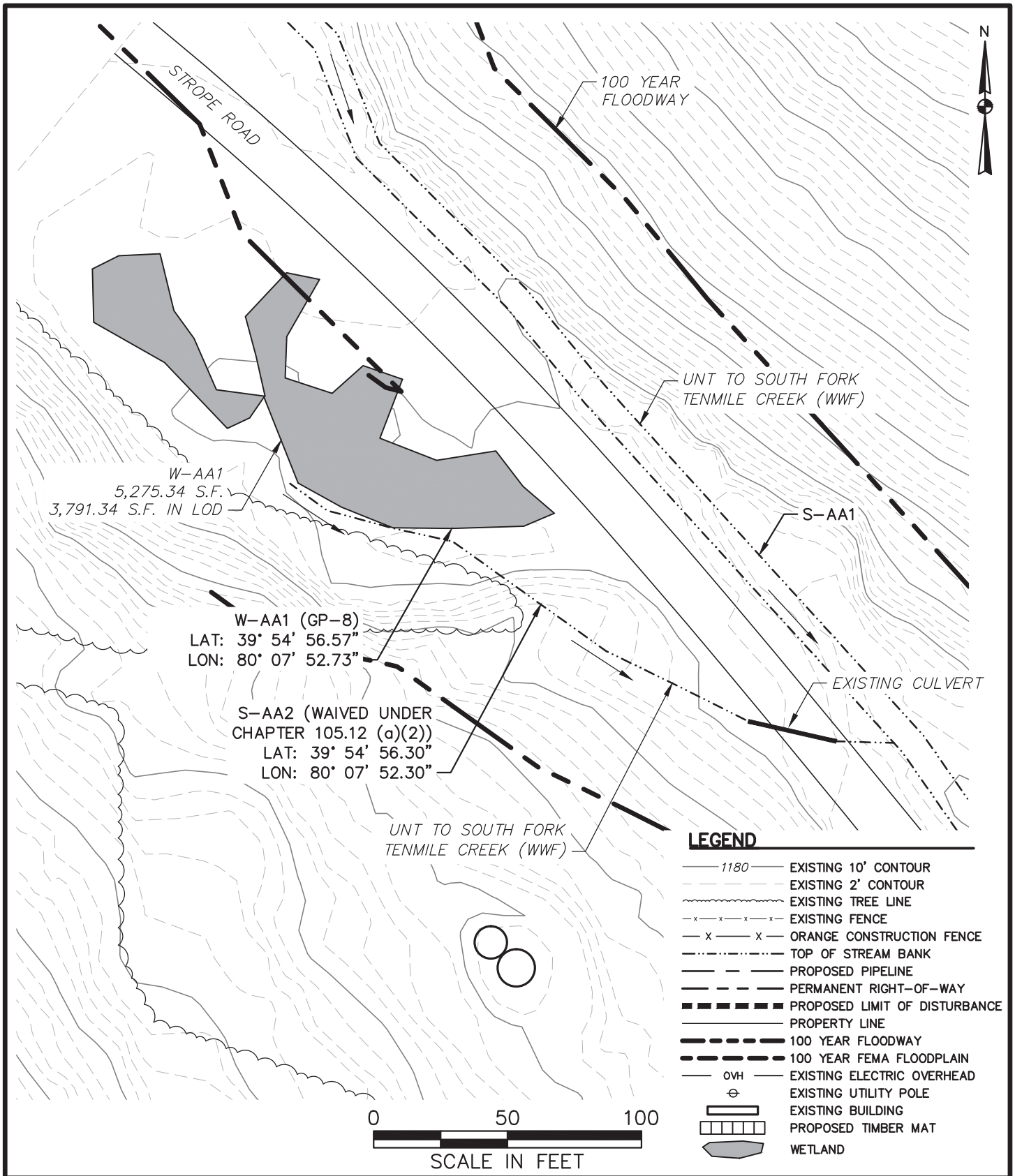
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
M80/H158 PIPELINE – GREENE COUNTY
GP-8 FOR S-AA1
STREAM CROSSING
SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	4 OF 4

FIGURE 4



TETRA TECH
WWW.TETRATECH.COM
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
M80/H158 PIPELINE – GREENE COUNTY
GP-8 FOR W-AA1 – PLAN
S-AA2 (WAIVED UNDER CHAPTER 105.12 (a)(2))

SCALE: 1" = 50'

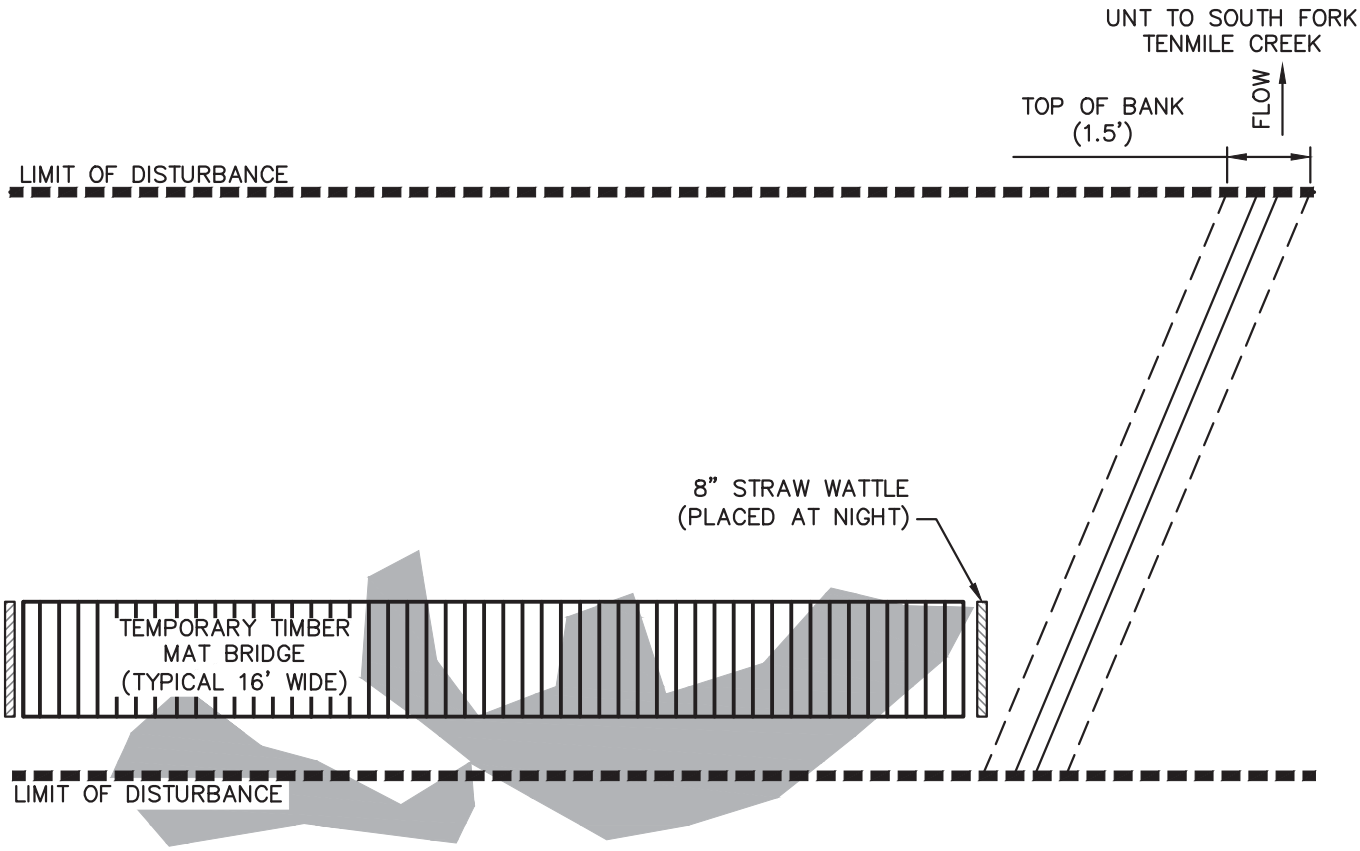
DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

FIGURE 1

R:_212 – OGA\O&G\EQT\00176 – EEP\GPs\M80-H158\M80_H158 – 001766P005.dwg PIT DAN.ZINDREN 10/26/2015 3:41:07 PM

NOTES:

1. TOPO AND SITE FEATURE CREATED USING http:\\www.pasda.psu.edu.
2. TOPSOIL STOCKPILES SHALL BE LOCATED A MINIMUM OF 50' AWAY FROM THE EDGE OF THE WETLAND.
3. THE RIGHTS-OF-WAY AND EASEMENTS SHOWN ON THIS PLAN ARE THE RESPONSIBILITY OF EQUITRANS, LP TO SECURE WITH THE INDIVIDUAL PROPERTY OWNER. THE RIGHTS-OF-WAYS AND EASEMENTS SHOWN ON THIS PERMIT DRAWING REPRESENT THE BEST AVAILABLE PROPERTY INFORMATION AS PROVIDED TO TETRA TECH NUS, INC. BY EQUITRANS, LP. THE RIGHTS-OF-WAYS AND EASEMENTS SHALL BE VERIFIED AND LOCATED IN THE FIELD BY EQUITRANS, LP.



WETLAND IMPACTS:
TOTAL AREA: 3,791.34 S.F.

STREAM IMPACTS:
LENGTH: 1.5'
WIDTH: 82'
TOTAL AREA: 123 S.F.

PLAN
NOT TO SCALE

TETRA TECH
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PITTSBURGH, PA 15220
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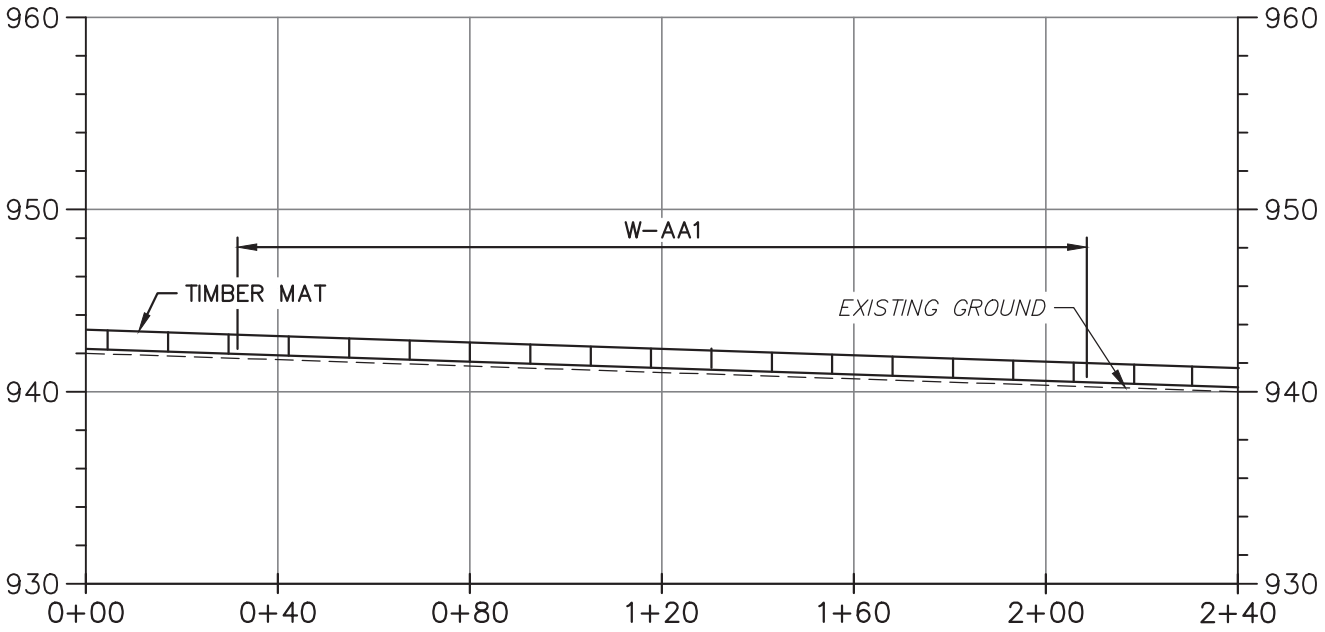
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
M80/H158 PIPELINE – GREENE COUNTY
GP-8 FOR W-AA1 – PLAN
S-AA2 WAIVED UNDER CHAPTER 105.12 (a)(2)
SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 4

FIGURE 2



PROFILE FOR W–AA1 OPEN–CUT TRENCH PROFILE

SCALE: HORIZ: 1" = 40'
VERT: 1" = 10'

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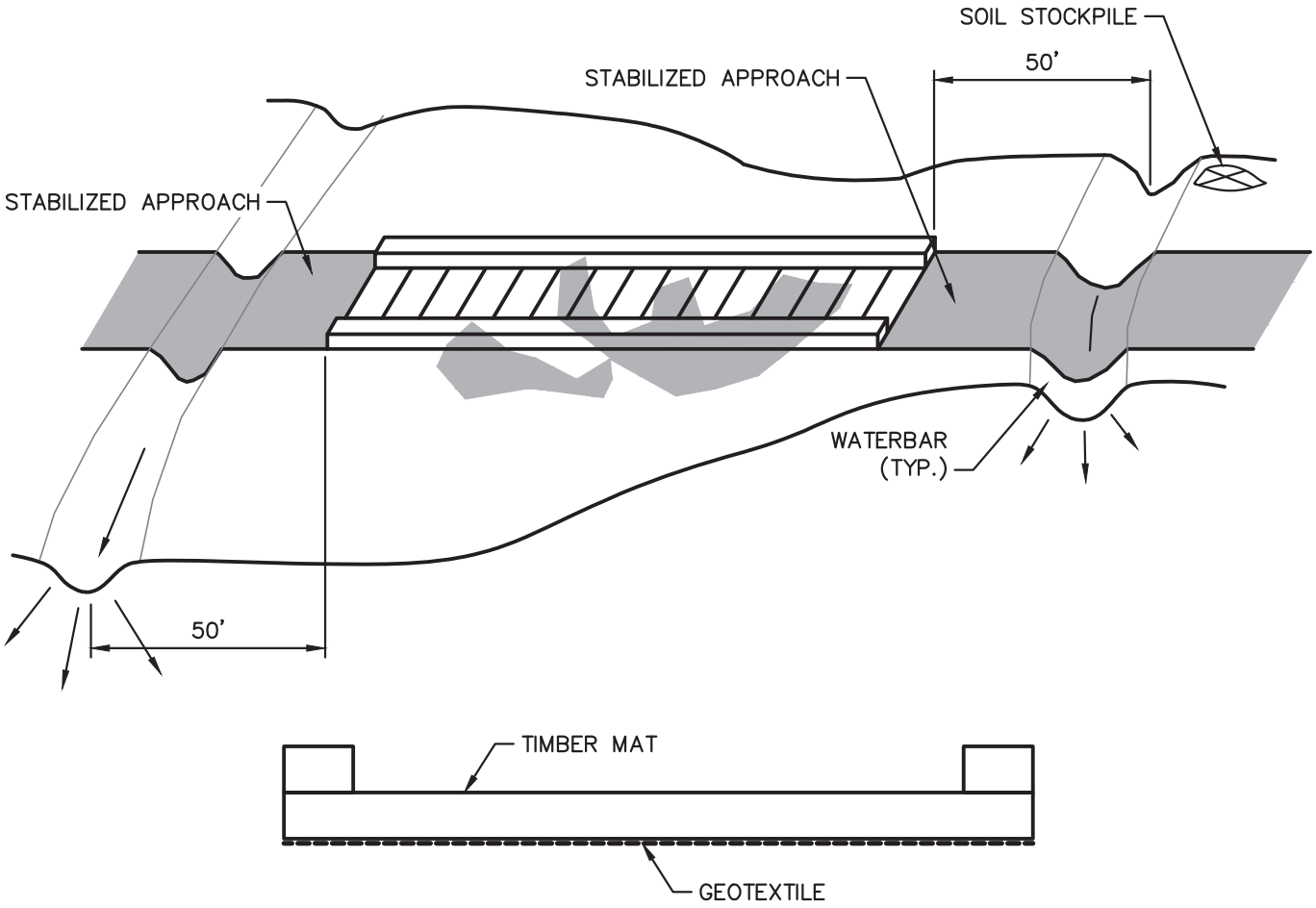
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
M80/H158 PIPELINE – GREENE COUNTY
GP–8 FOR W–AA1
PROFILE
SCALE: AS NOTED

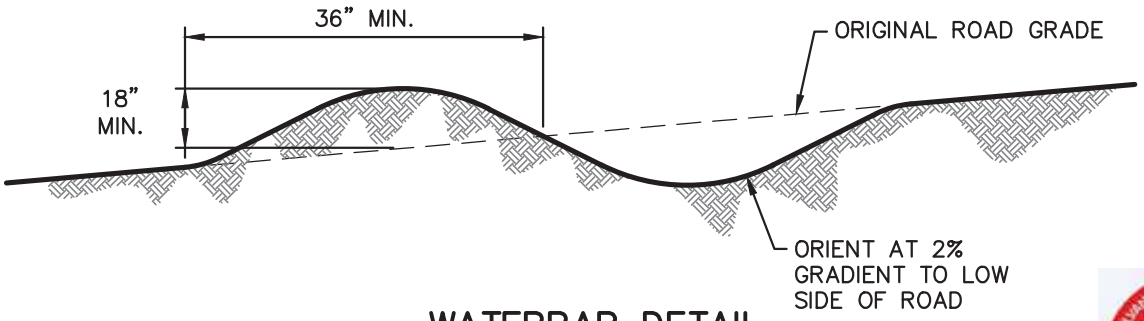
DATE:	10/23/15
PROJECT NO.:	212IC–PB–00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 4

FIGURE 3



TEMPORARY WETLAND CROSSING

NOT TO SCALE



WATERBAR DETAIL

NOT TO SCALE

NOTE:
APPROACH TO CROSSING NOT TO EXCEED A DEPTH OF 6" ABOVE ORIGINAL GRADE

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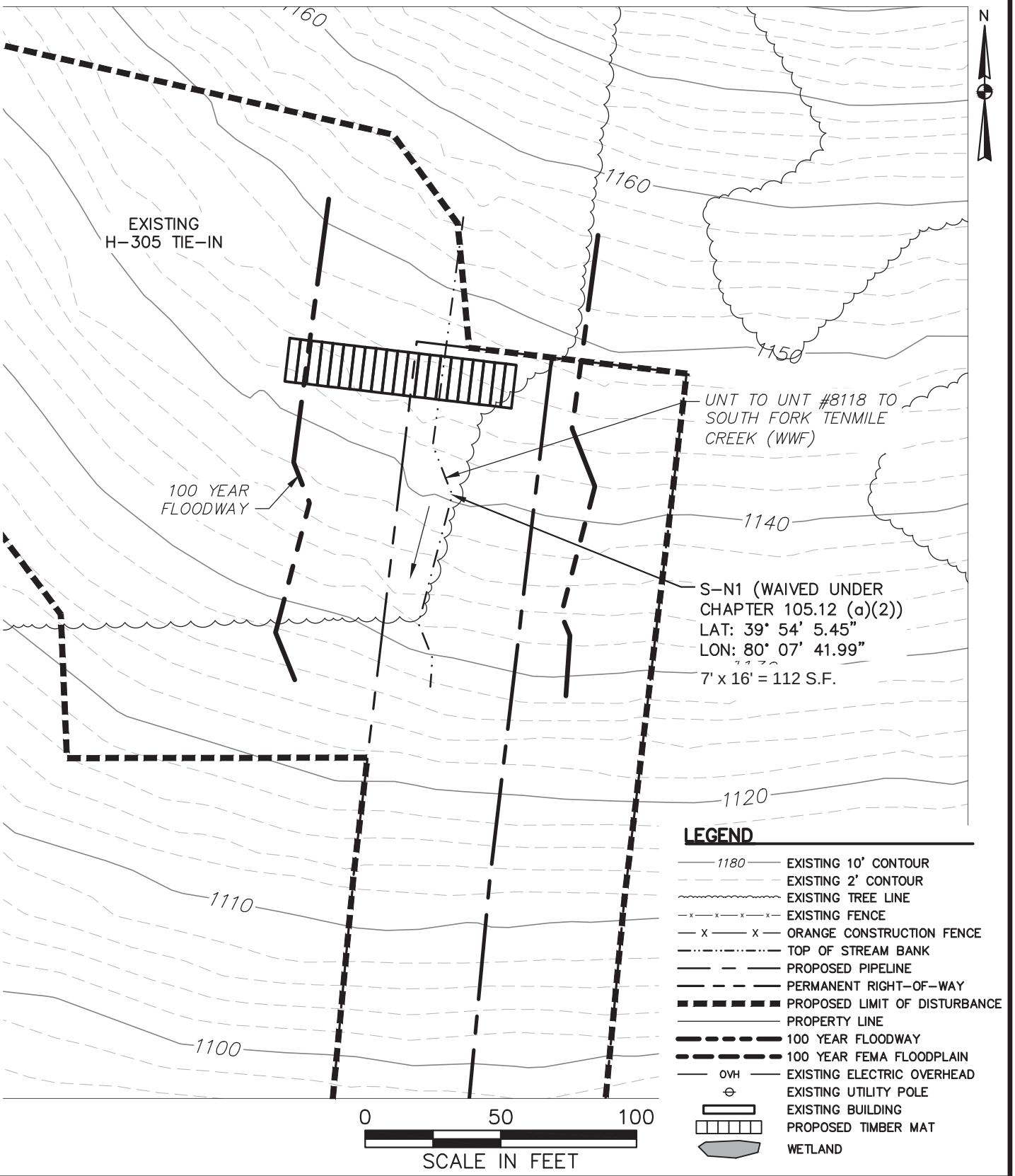
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
M80/H158 PIPELINE – GREENE COUNTY
GP-8 FOR W-AA1
WETLAND CROSSING

SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	4 OF 4

FIGURE 4



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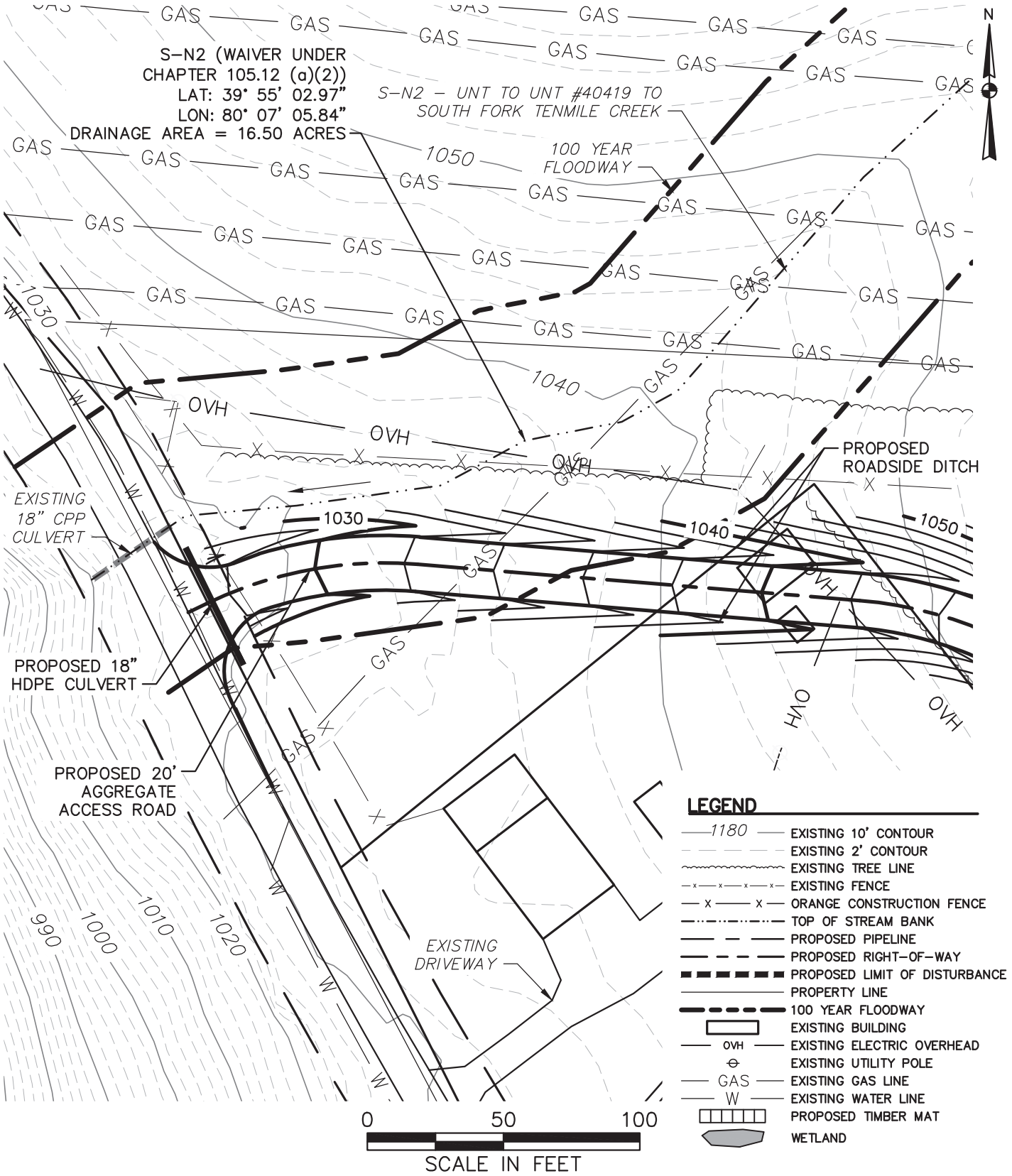
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H305 PIPELINE – GREENE COUNTY
S-N1 WAIVED UNDER CHAPTER 105.12 (a)(2) – PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 1

FIGURE 1



TETRA TECH
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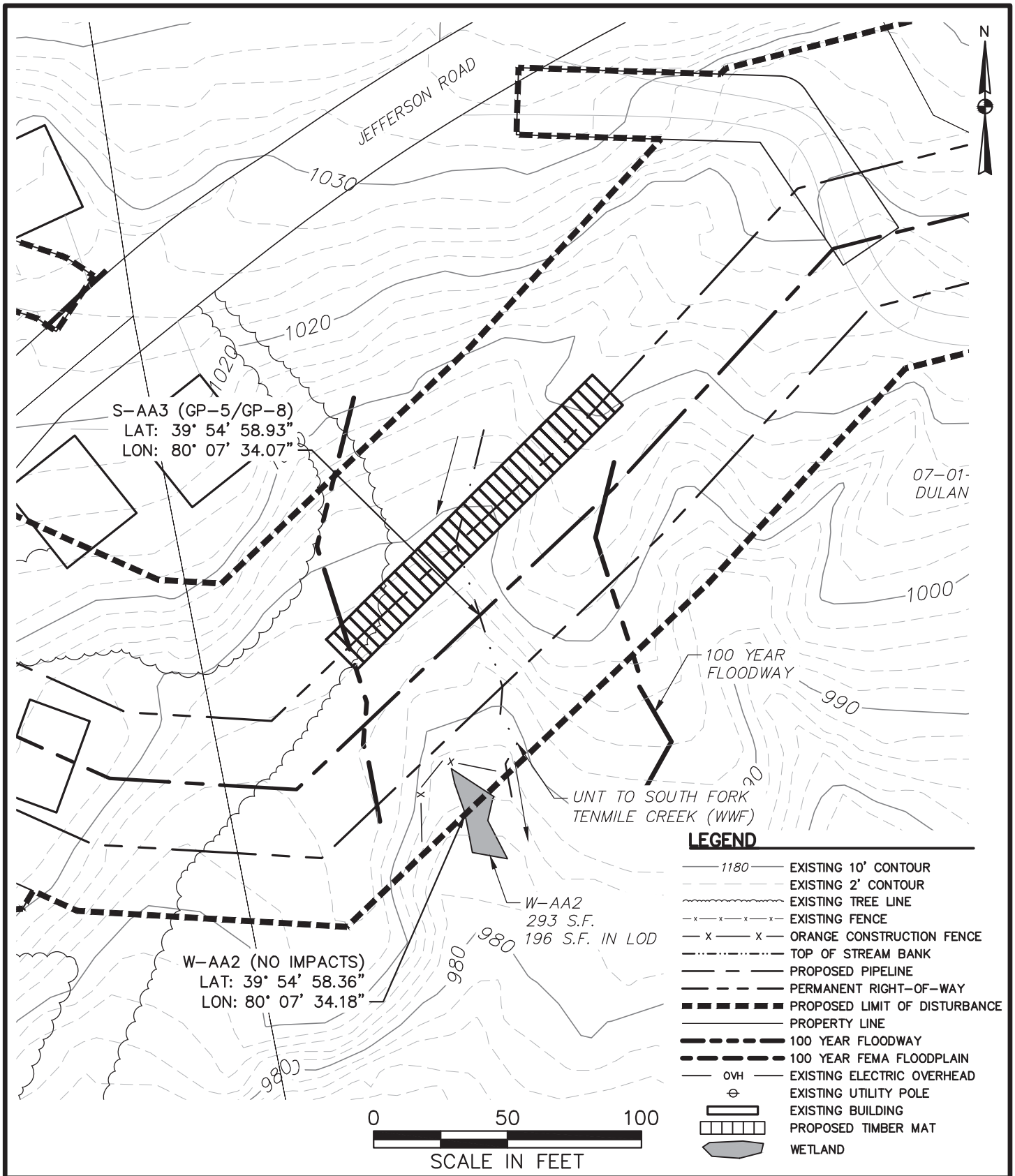
661 ANDERSEN DRIVE - FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
RED HOOK COMPRESSOR STATION- GREENE COUNTY
WAIVER UNDER CHAPTER 105.12 (A)(2) FOR S-N2
PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	DZ
DRAWN BY:	DZ
CHECKED BY:	JS
SHEET:	1 OF 1

FIGURE 1



TETRA TECH
WWW.TETRATECH.COM
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
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EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP-5/GP-8 FOR S-AA3/W-AA2
PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

FIGURE 1

NOTES:

1. TOPO AND SITE FEATURE CREATED USING http:\\www.pasda.psu.edu.

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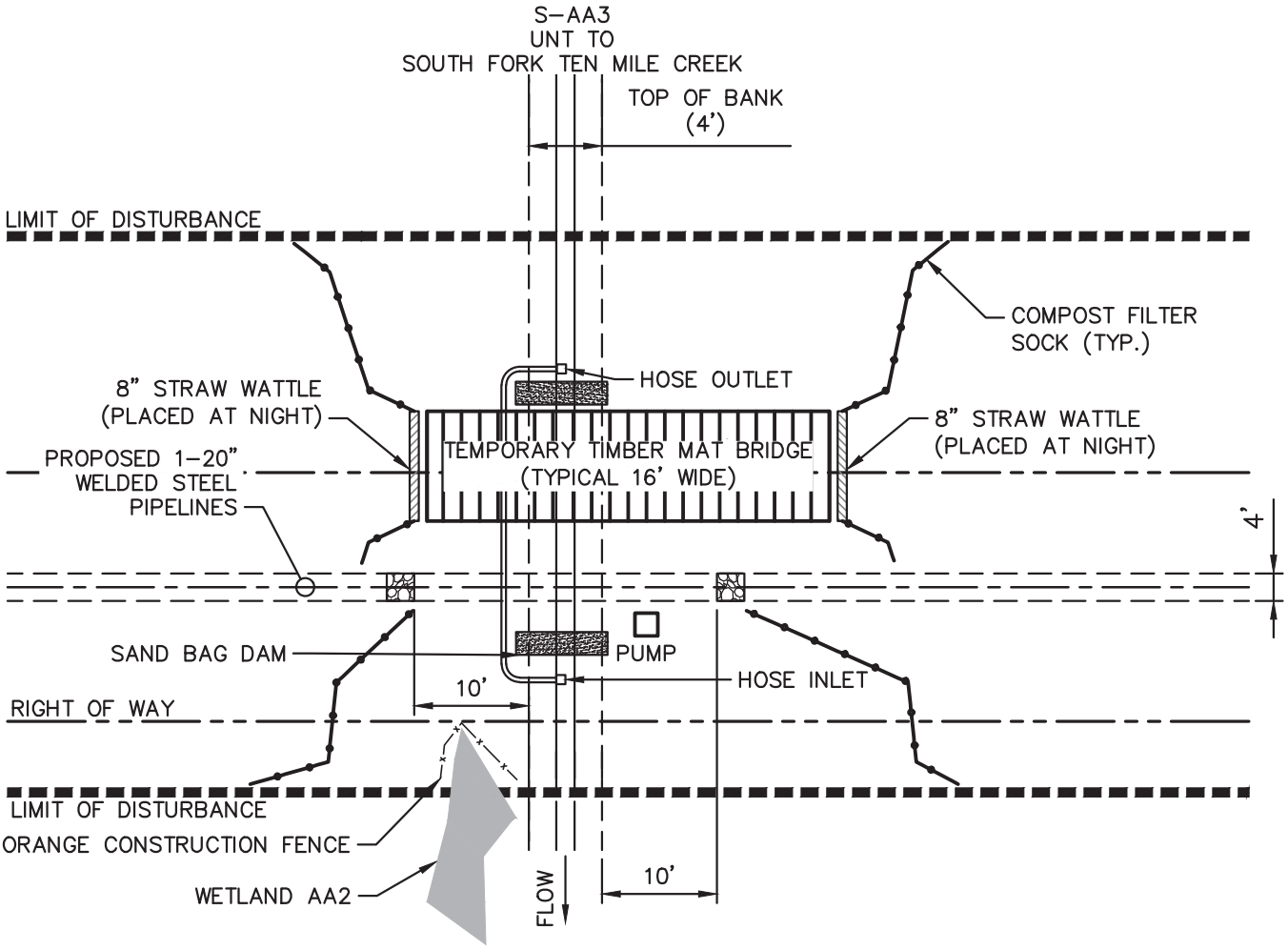

STREAM AA3 IMPACTS:
LENGTH: 4'
WIDTH: 125'
TOTAL AREA: 500 S.F.

NO WETLAND IMPACTS

PLAN
NOT TO SCALE

TETRA TECH
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PITTSBURGH, PA 15220
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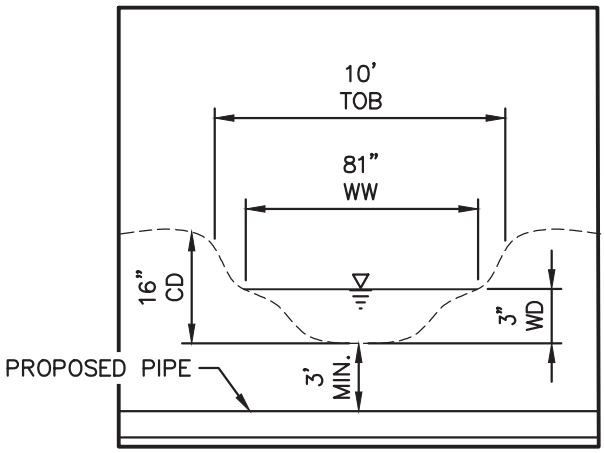
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP-5/GP-8 FOR S-AA3 & W-AA2
PLAN
SCALE: NOT TO SCALE

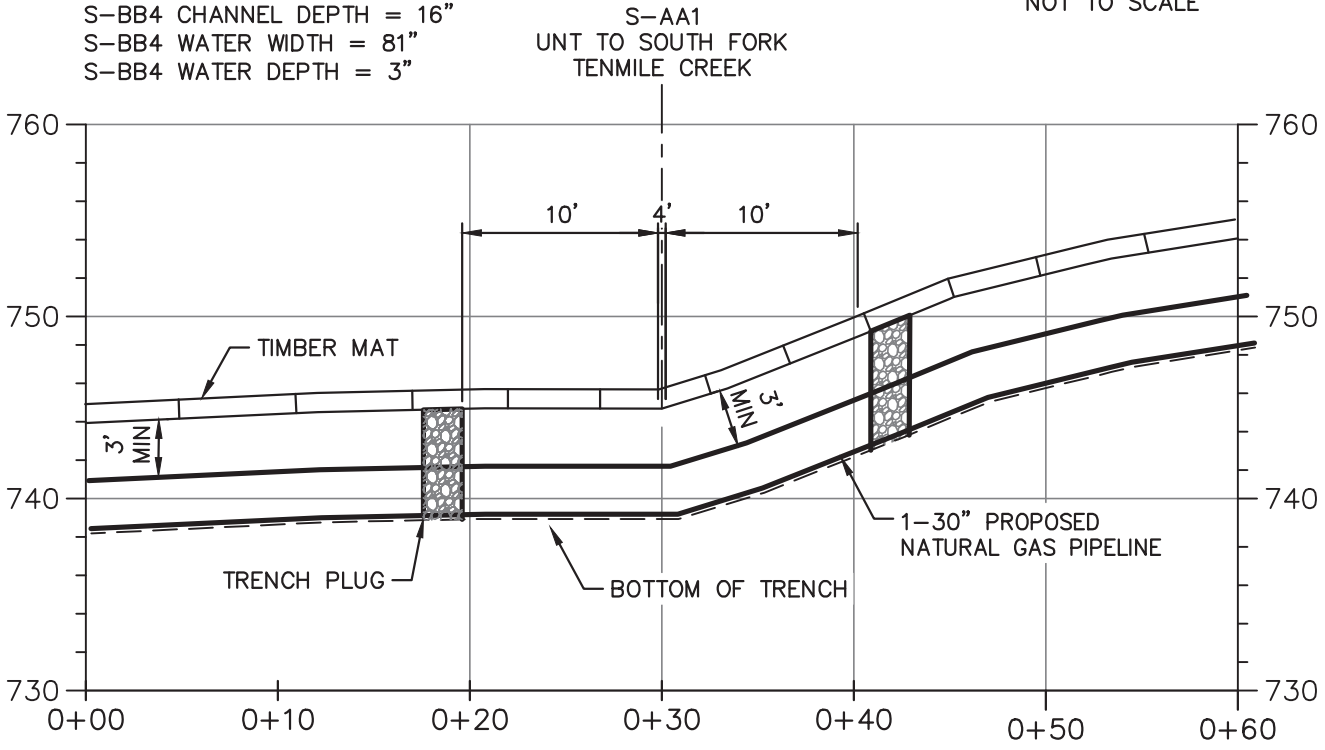
DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 4

FIGURE 2



NOT TO SCALE

S–BB4 CHANNEL WIDTH = 10'
S–BB4 CHANNEL DEPTH = 16"
S–BB4 WATER WIDTH = 81"
S–BB4 WATER DEPTH = 3"



PROFILE FOR S–AA3 OPEN–CUT TRENCH PROFILE

SCALE: HORIZ: 1" = 10'
VERT: 1" = 10'

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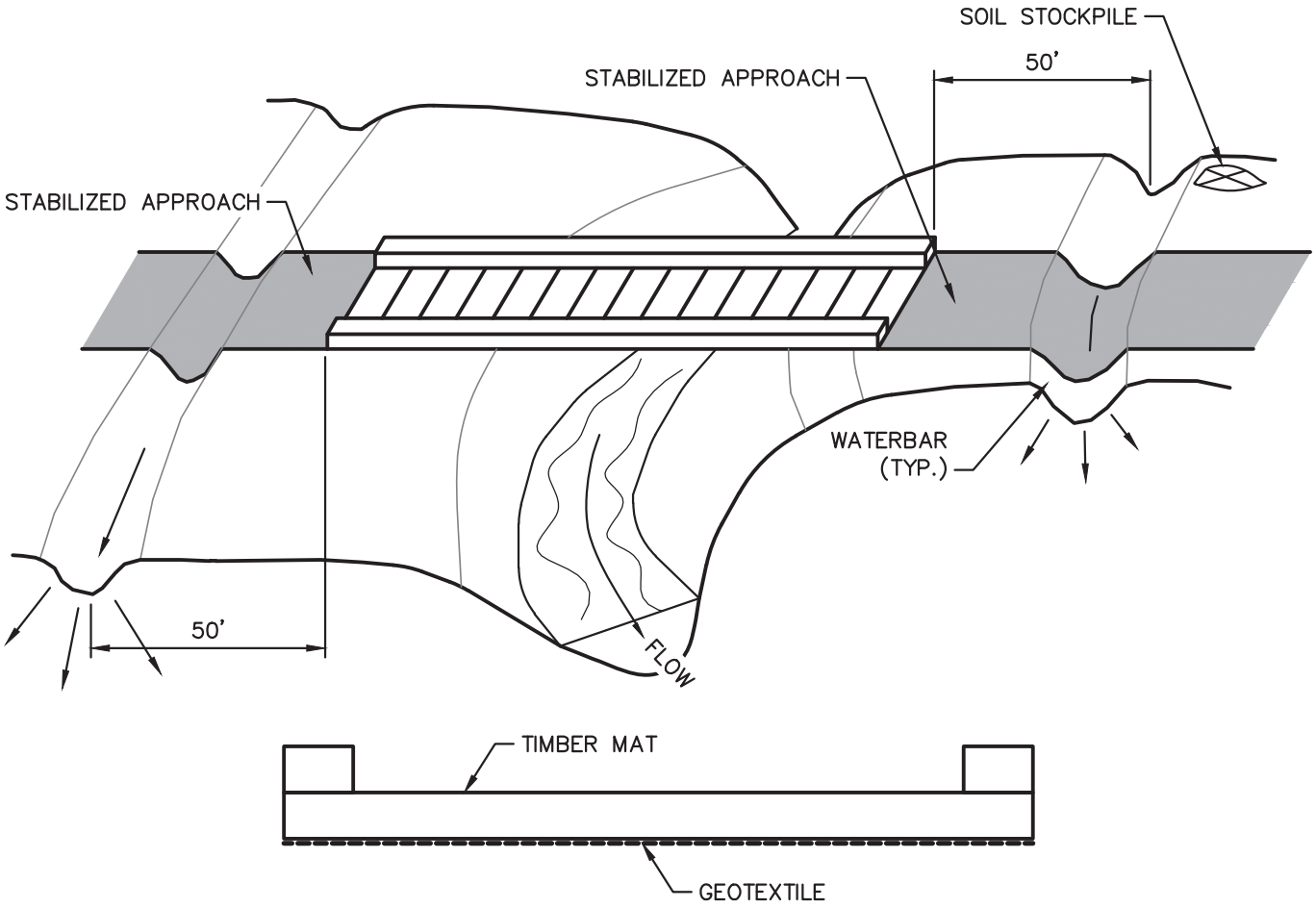
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP–5/GP–8 FOR S–AA3
PROFILE
SCALE: AS NOTED

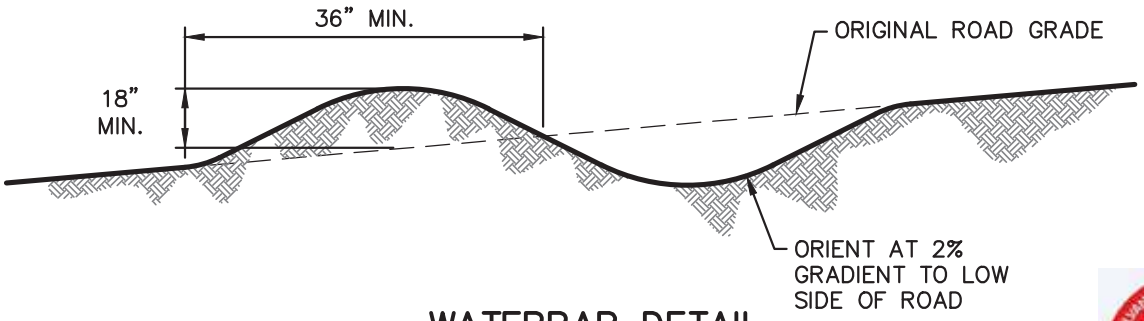
DATE:	10/23/15
PROJECT NO.:	212IC–PB–00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 4

FIGURE 3



TEMPORARY STREAM CROSSING

NOT TO SCALE



WATERBAR DETAIL

NOT TO SCALE

NOTE:
APPROACH TO CROSSING NOT TO EXCEED A DEPTH OF 6" ABOVE ORIGINAL GRADE

TETRA TECH
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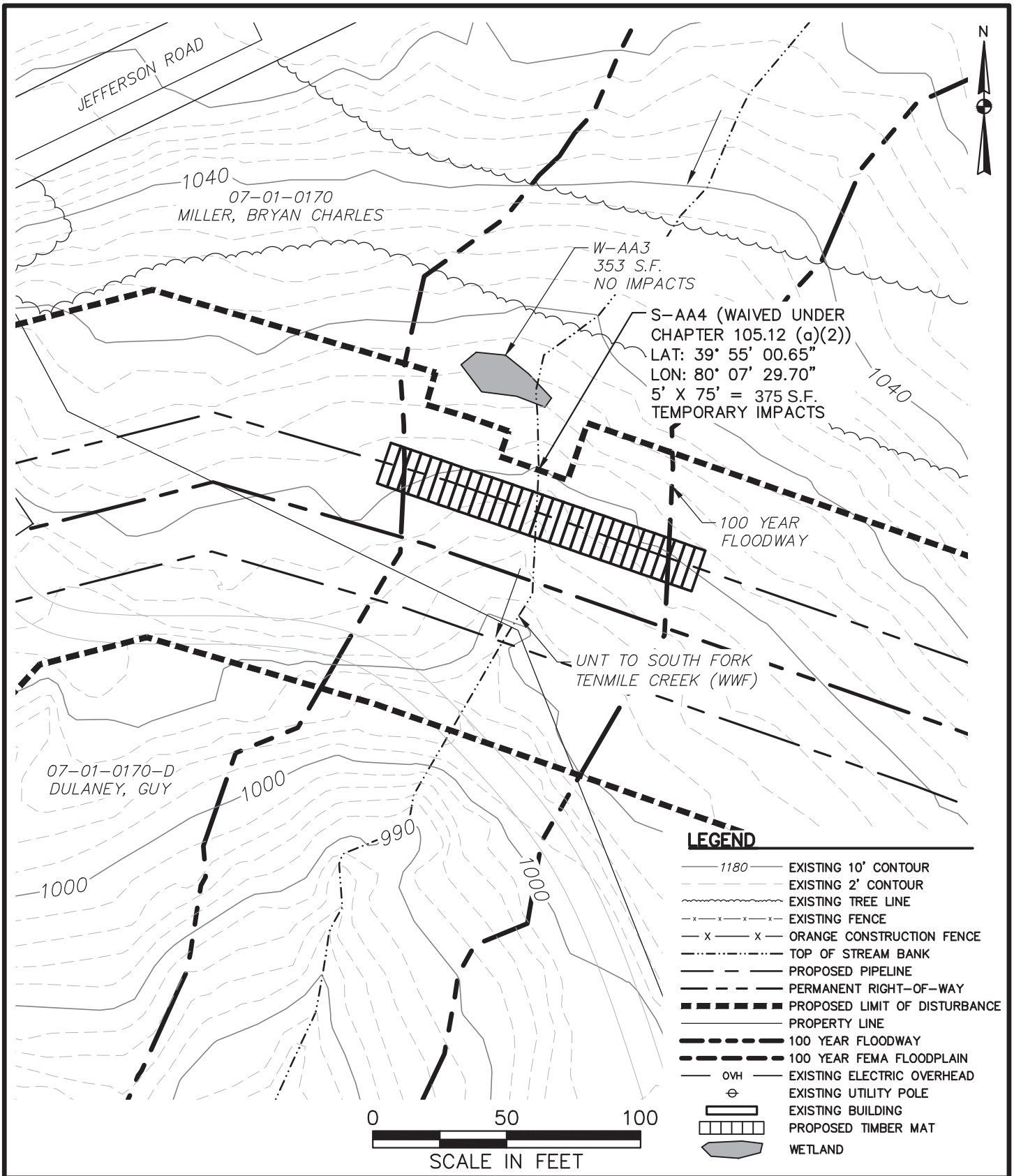
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP-8 FOR S-AA3/W-AA2
STREAM AND WETLAND CROSSING

SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	4 OF 4

FIGURE 4



TETRA TECH
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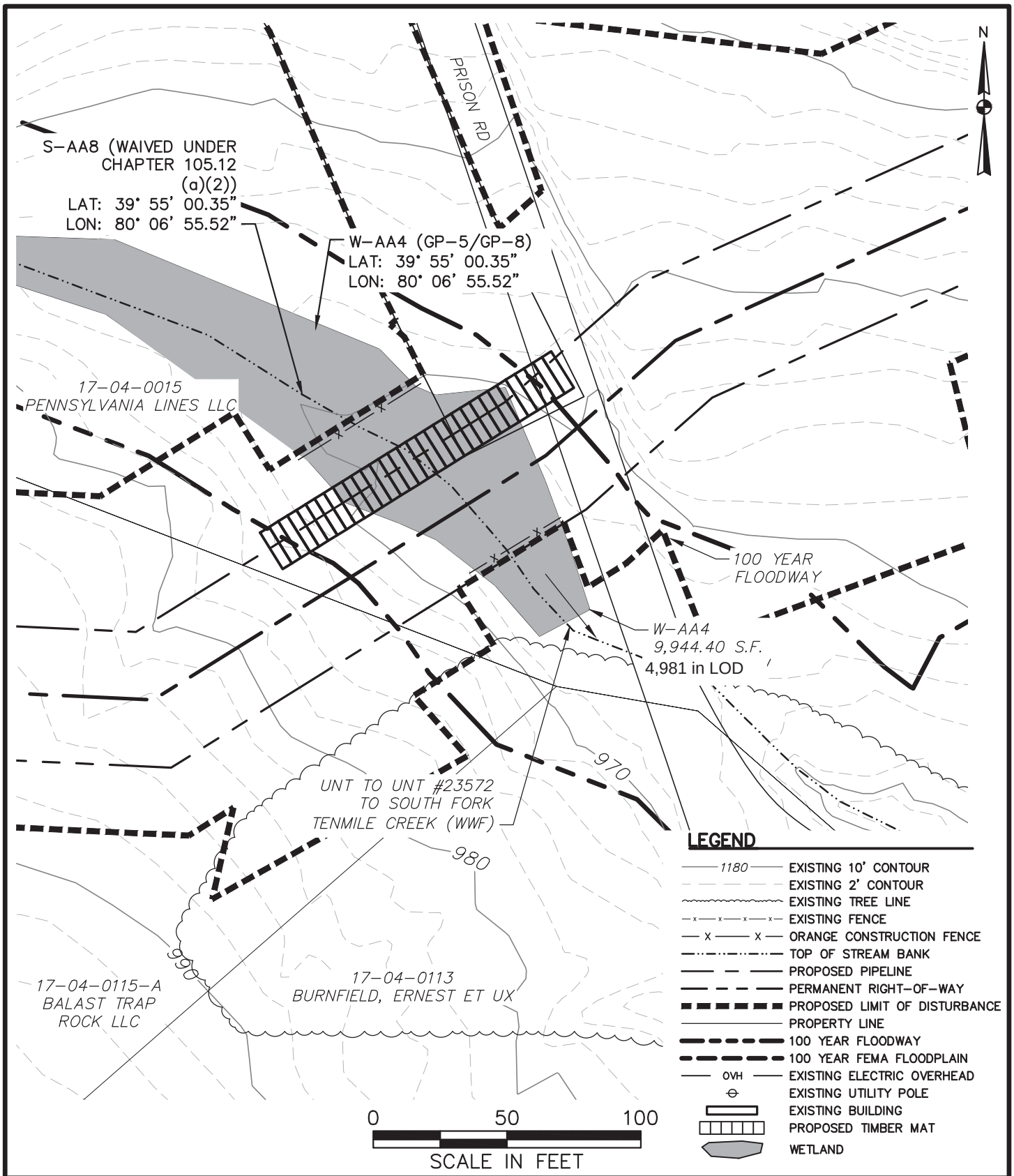
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
S-AA4 WAIVED UNDER CHAPTER 105.12 (a)(2) – PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

FIGURE 1



r:_212 - oga\O&G\EQT\00176 - eep\GPs\H316\H316 - 00176GP005.dwg PIT DAN.ZINDREN 10/26/2015 10:11:08 AM

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PITTSBURGH, PA 15220
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EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE - GREENE COUNTY
GP-5/GP-8 FOR W-AA4 - PLAN
S-AA8 WAIVED UNDER CHAPTER 105.12 (a)(2)

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

FIGURE 1

NOTES:

1. TOPO AND SITE FEATURE CREATED USING http:\\www.pasda.psu.edu.

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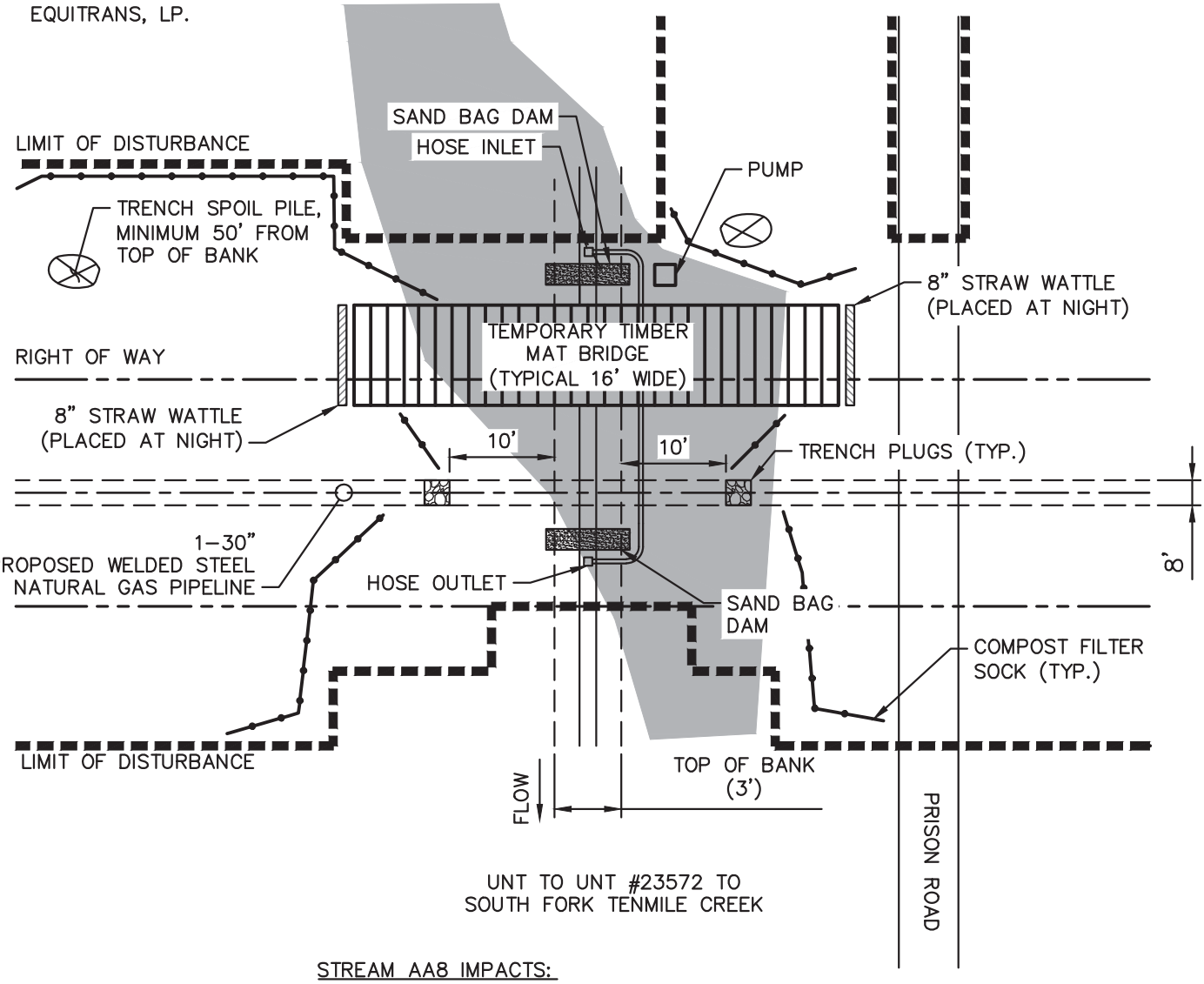

STREAM AA8 IMPACTS:
LENGTH: 3'
WIDTH: 75'
TOTAL AREA: 225 S.F.

WETLAND AA4 IMPACTS:
4,981 S.F.

PLAN
NOT TO SCALE

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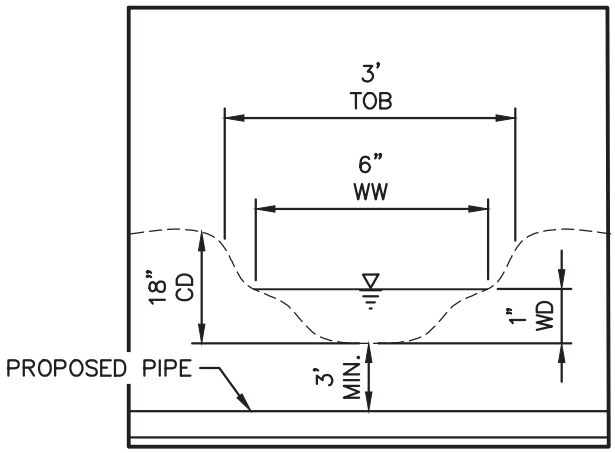
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE - GREENE COUNTY
GP-5/GP-8 FOR S-AA8/W-AA4
PLAN
SCALE: NOT TO SCALE

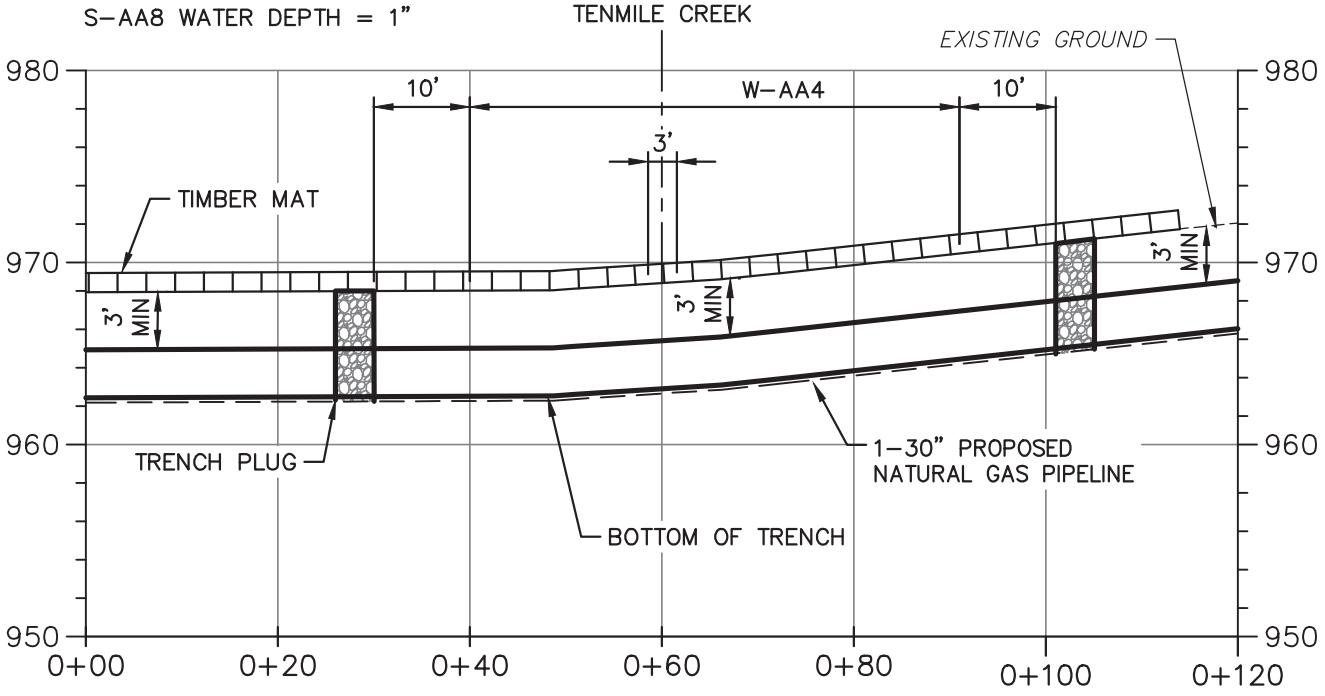
DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 4

FIGURE 2



NOT TO SCALE

S–AA8 CHANNEL WIDTH = 3'
S–AA8 CHANNEL DEPTH = 18"
S–AA8 WATER WIDTH = 6"
S–AA8 WATER DEPTH = 1"



PROFILE FOR S–AA8/W–AA4 OPEN–CUT TRENCH PROFILE

SCALE: HORIZ: 1" = 20'
VERT: 1" = 10'

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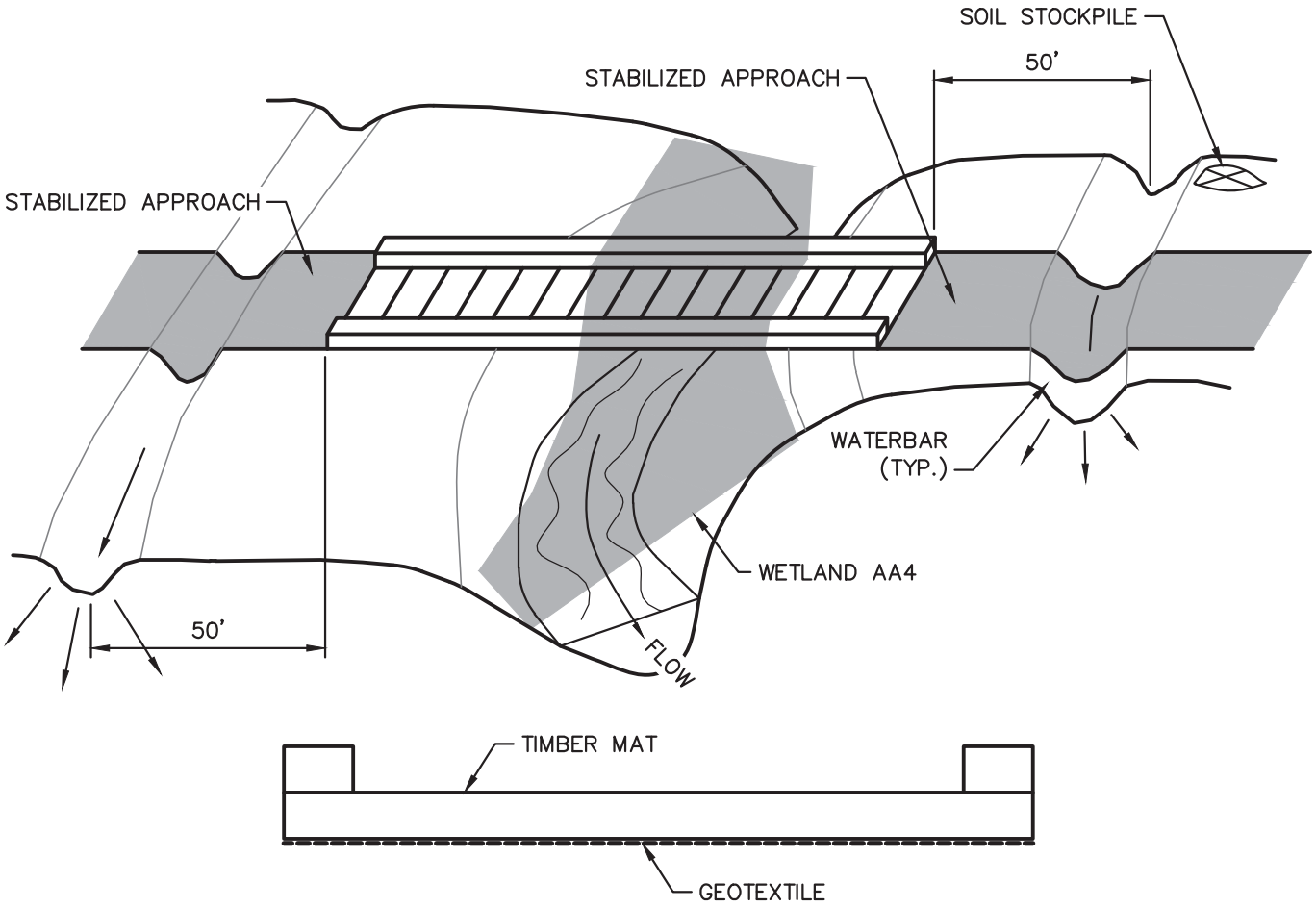
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP–5/GP–8 FOR S–AA8/W–AA4
PROFILE
SCALE: AS NOTED

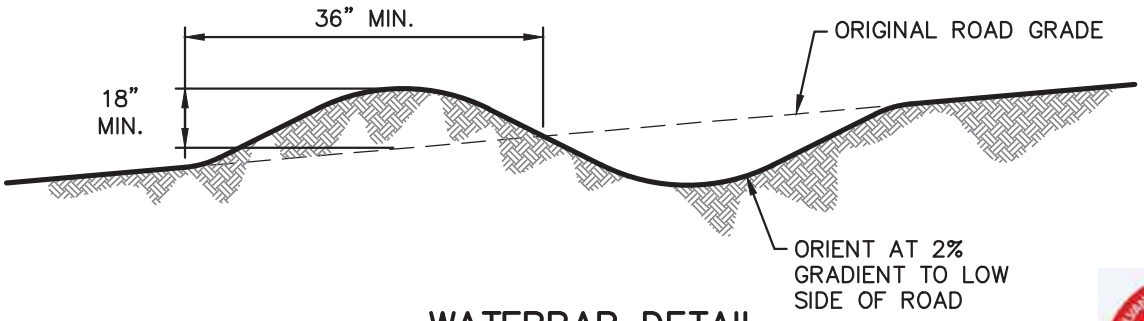
DATE:	10/23/15
PROJECT NO.:	212IC–PB–00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 4

FIGURE 3



TEMPORARY STREAM & WETLAND CROSSING

NOT TO SCALE



WATERBAR DETAIL

NOT TO SCALE

NOTE:
APPROACH TO CROSSING NOT TO EXCEED A DEPTH OF 6" ABOVE ORIGINAL GRADE

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PITTSBURGH, PA 15220
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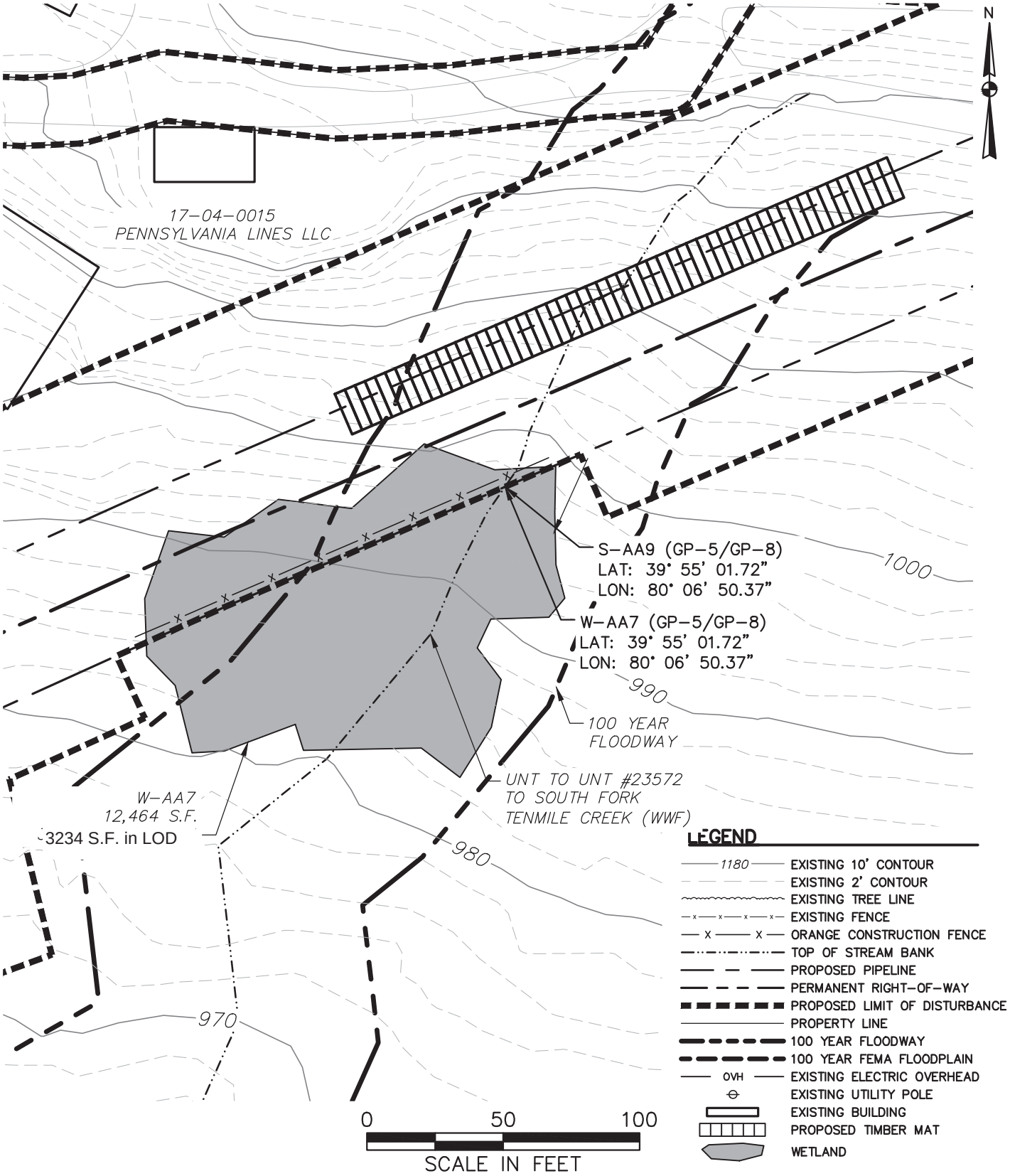
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP-8 FOR S-AA8/W-AA4
STREAM AND WETLAND CROSSING

SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	4 OF 4

FIGURE 4



TETRA TECH
WWW.TETRATECH.COM
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PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP-5/GP-8 FOR S-AA9/W-AA7
PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

FIGURE 1

NOTES:

1. TOPO AND SITE FEATURE CREATED USING http:\\www.pasda.psu.edu.

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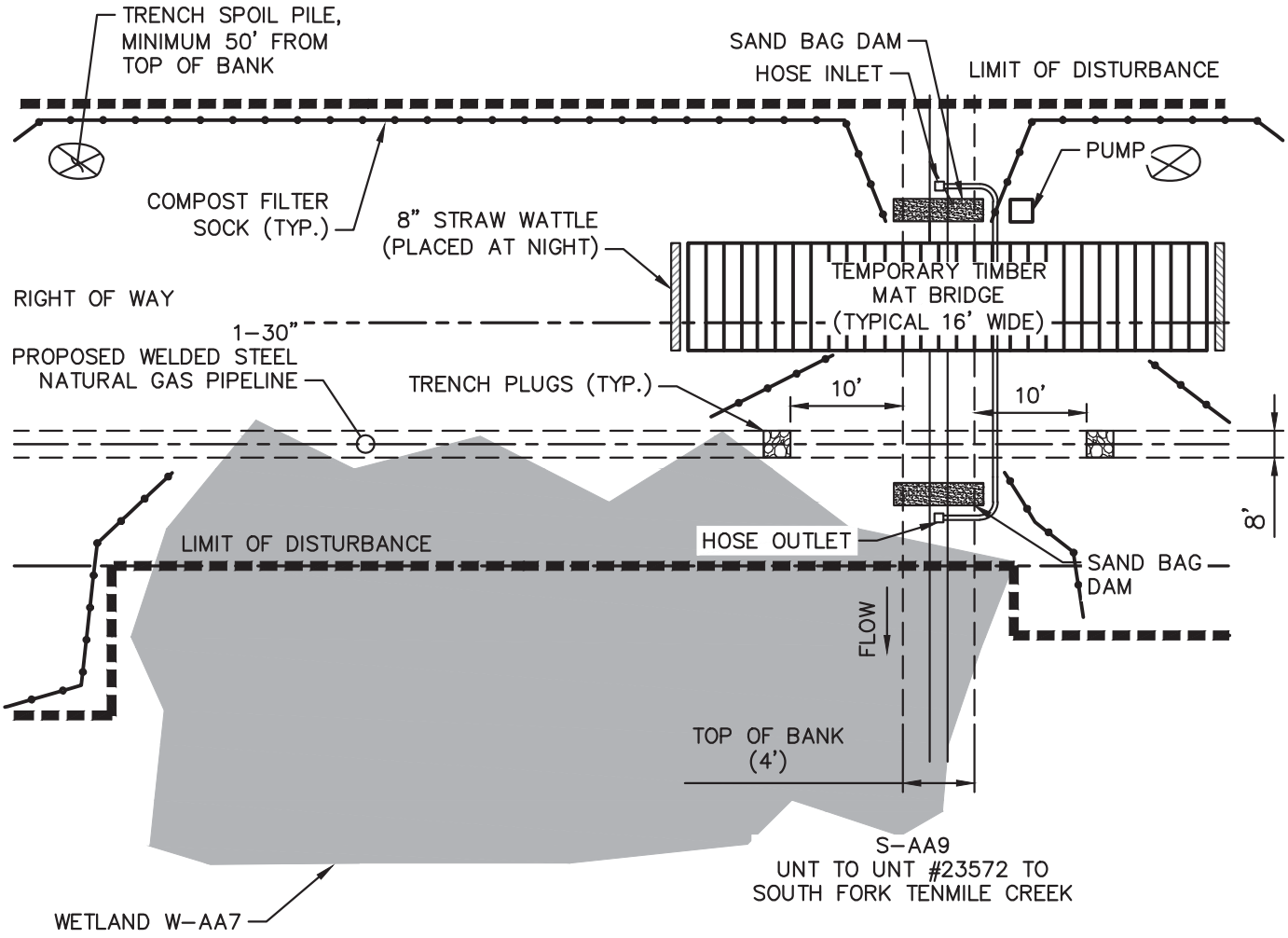


STREAM AA8 IMPACTS:
LENGTH: 4'
WIDTH: 75'
TOTAL AREA: 225 S.F.

WETLAND AA7 MPACTS:
3,234 S.F.

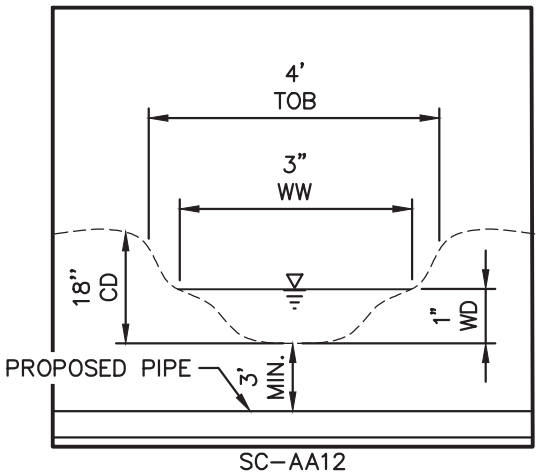
PLAN
NOT TO SCALE

TETRA TECH
WWW.TETRATECH.COM
661 ANDERSEN DRIVE - FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE - GREENE COUNTY
GP-5/GP-8 FOR S-AA9/W-AA7
PLAN
SCALE: NOT TO SCALE

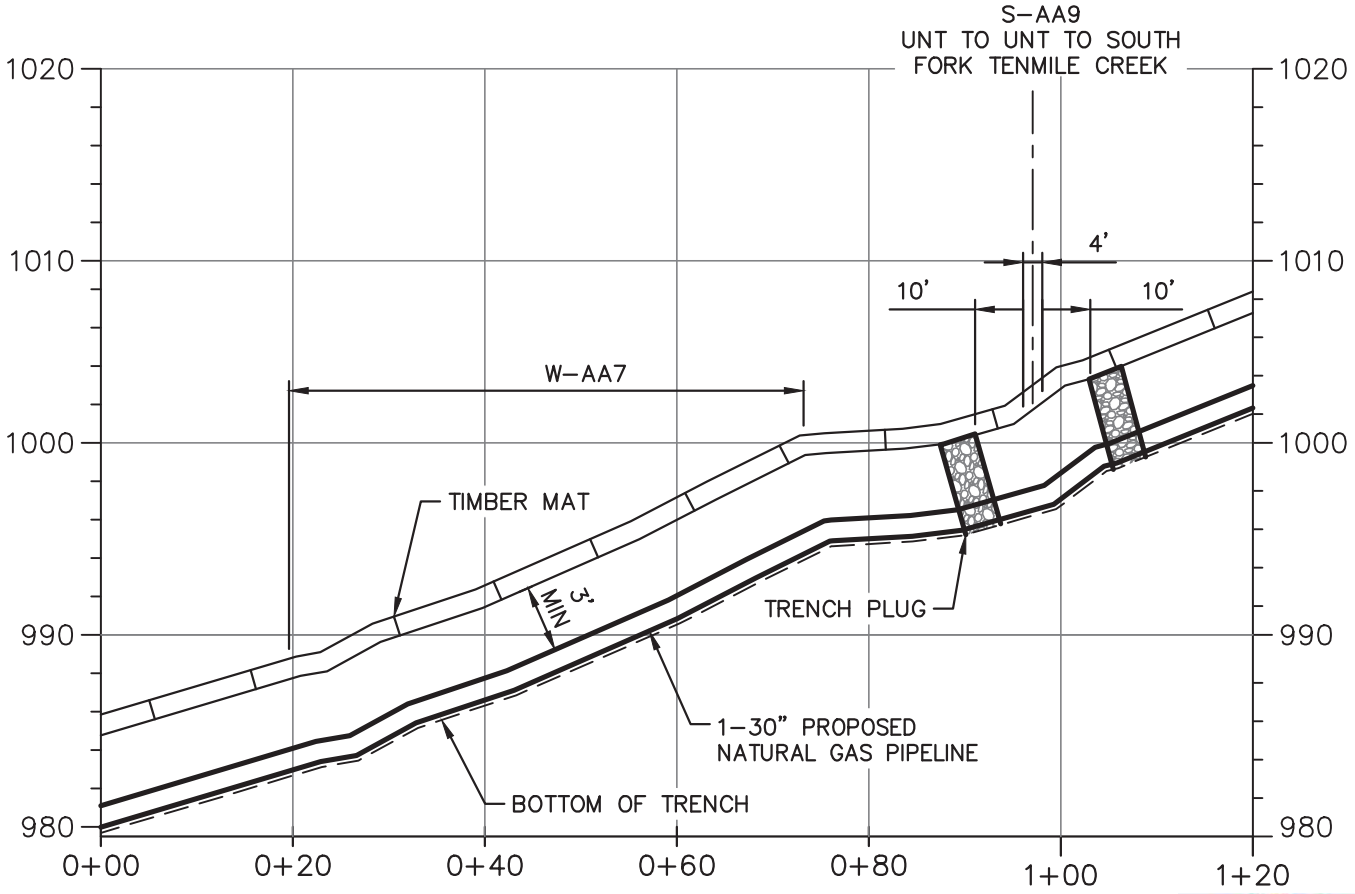
DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 4

FIGURE 2



SC–AA12
NOT TO SCALE

SC–AA9 CHANNEL WIDTH = 4'
SC–AA9 CHANNEL DEPTH = 18"
SC–AA9 WATER WIDTH = 3"
SC–AA9 WATER DEPTH = 1"



PROFILE FOR S–AA9 & W–AA7 OPEN–CUT TRENCH PROFILE

SCALE: HORIZ: 1" = 40'
VERT: 1" = 10'

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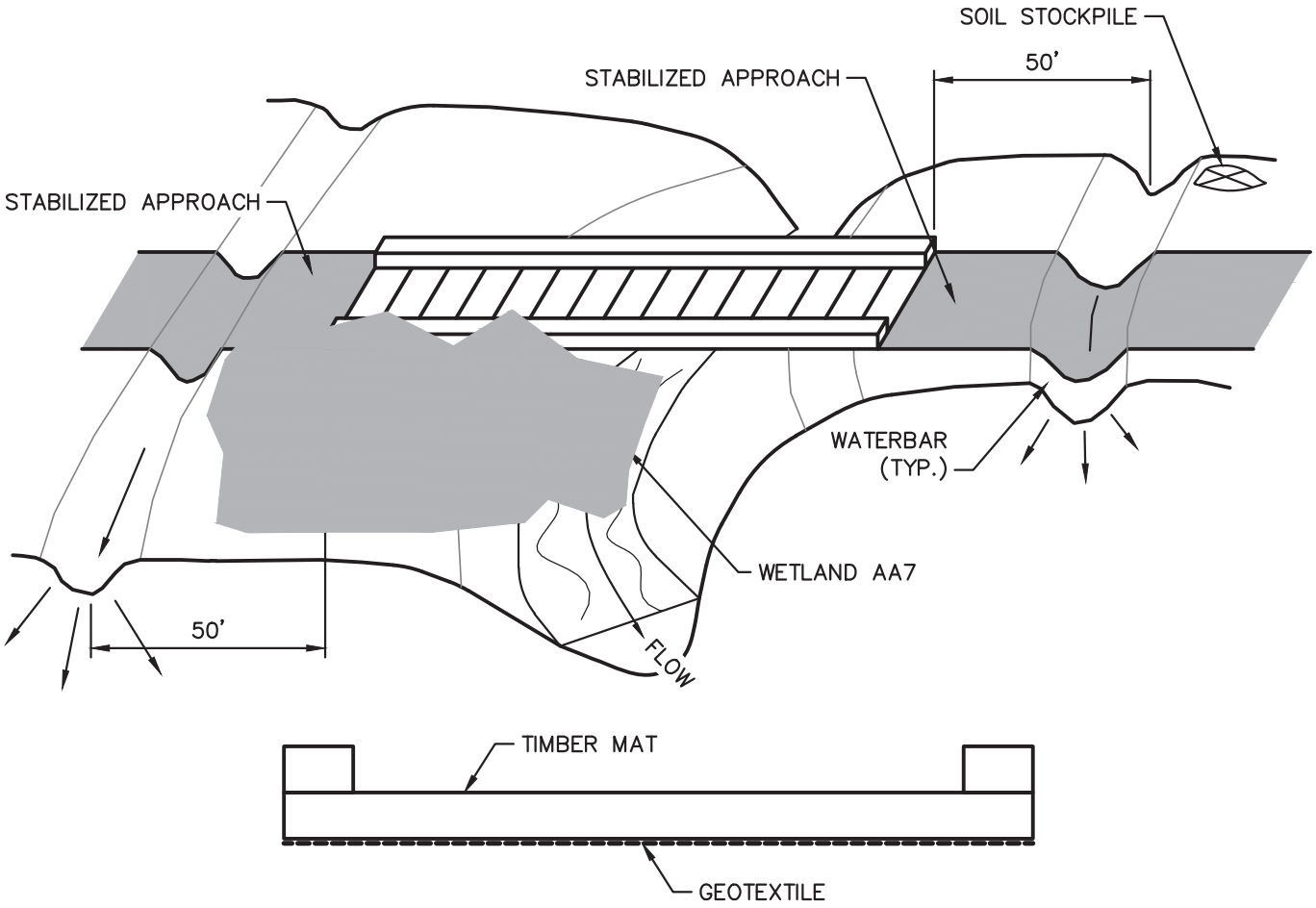
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP–5/GP–8 FOR S–AA9 & W–AA7
PROFILE
SCALE: AS NOTED

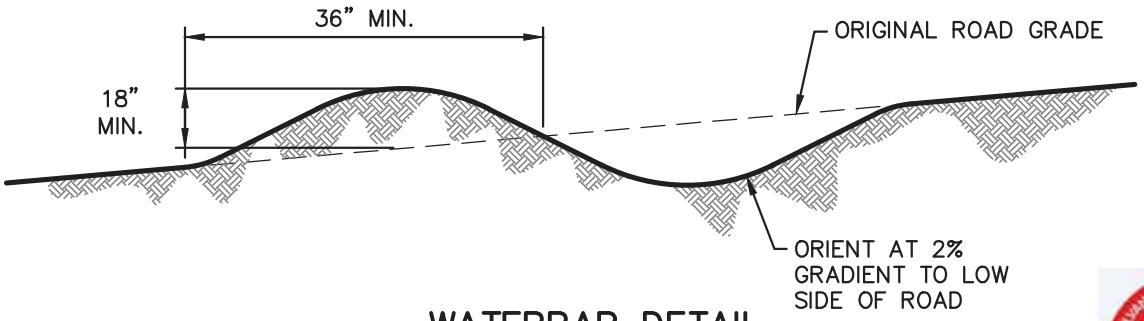
DATE:	10/23/15
PROJECT NO.:	212IC–PB–00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 4

FIGURE 3



TEMPORARY STREAM & WETLAND CROSSING

NOT TO SCALE



WATERBAR DETAIL

NOT TO SCALE

NOTE:
APPROACH TO CROSSING NOT TO EXCEED A DEPTH OF 6" ABOVE ORIGINAL GRADE

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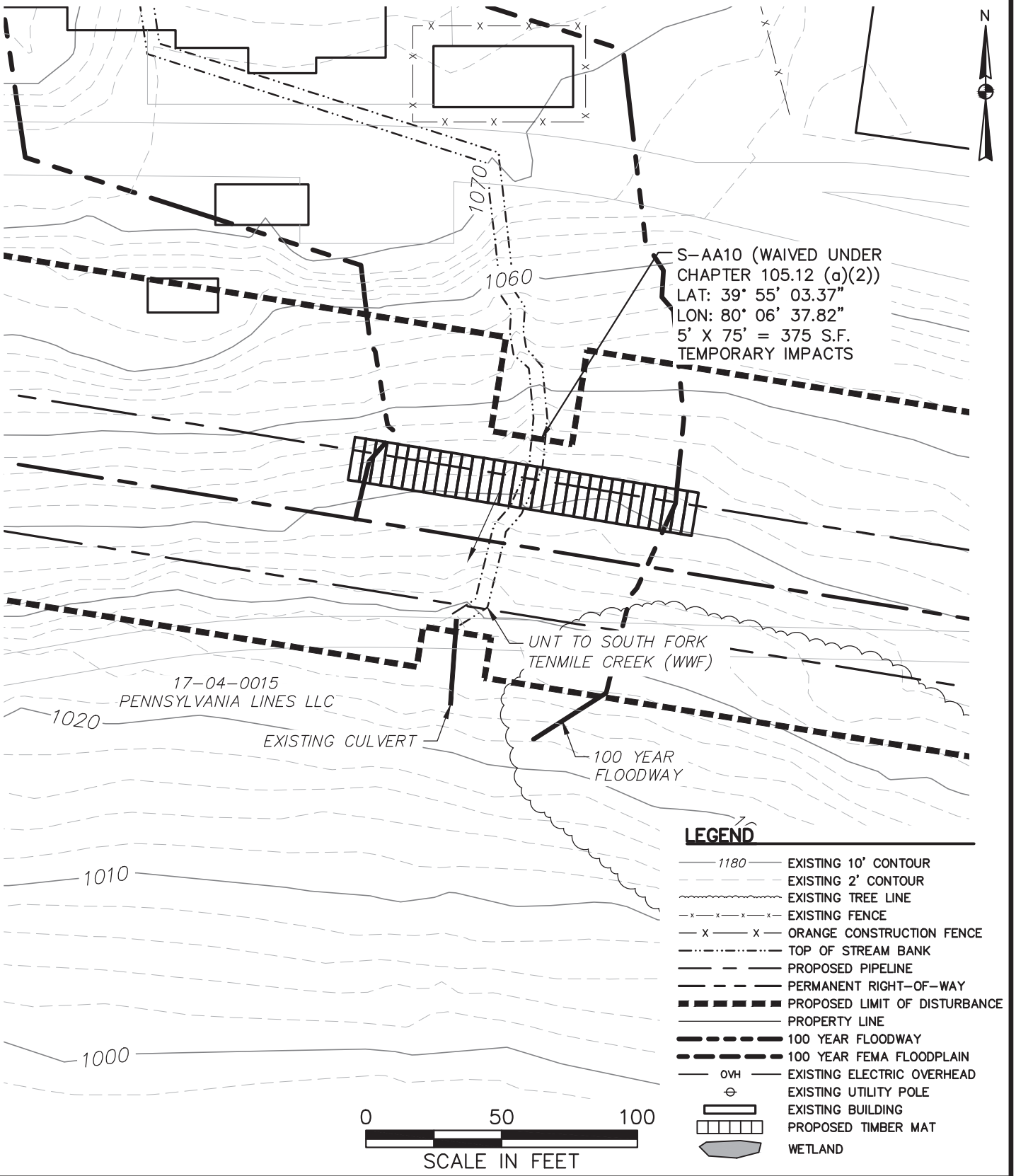
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP-8 FOR S-AA9/W-AA7
STREAM AND WETLAND CROSSING

SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	4 OF 4

FIGURE 4



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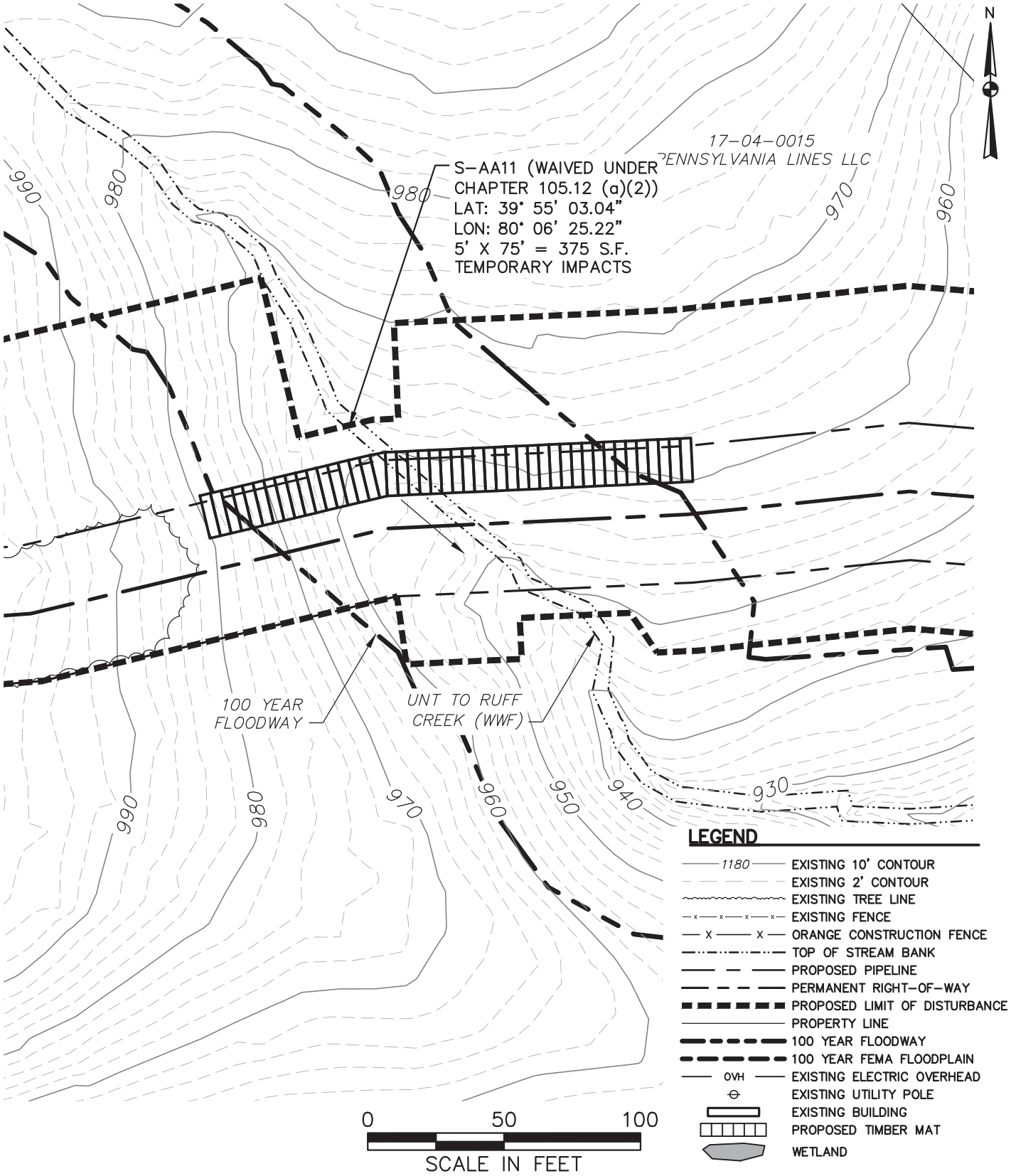
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
WAIVED UNDER CHAPTER 105.12(a)(2)
FOR S-AA10 – PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 1

FIGURE 1



r:_212 - oga\O&G\EQT\00176 - eep\GPs\H316\H316 - 00176GP017.dwg PIT DAN.ZINDREN 10/26/2015 12:52:55 PM

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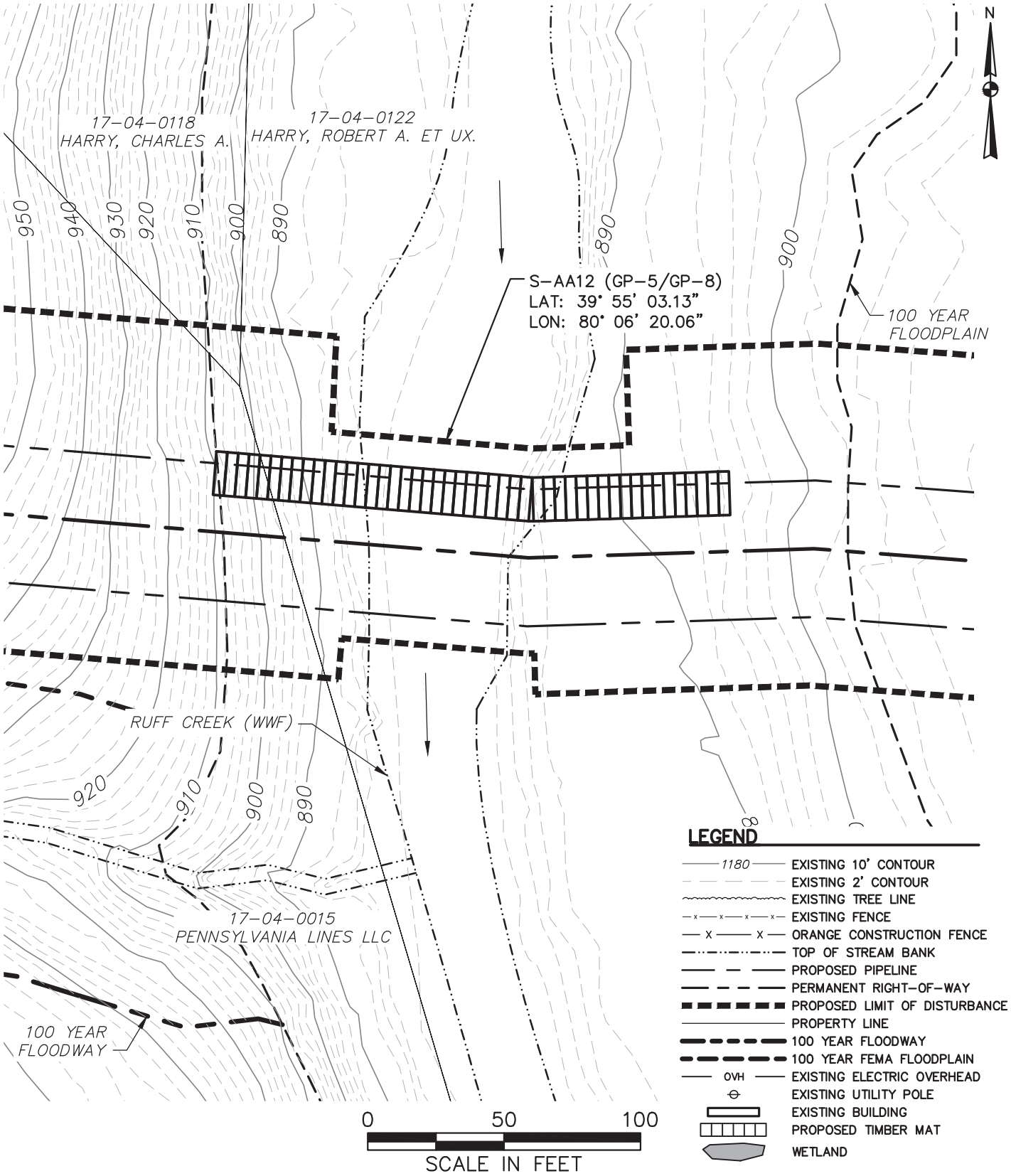
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE - GREENE COUNTY
WAIVED UNDER CHAPTER 105.12 (a)(2)
FOR S-AA11 - PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 1

FIGURE 1



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EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP-5/GP-8 FOR S-AA12
PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

FIGURE 1

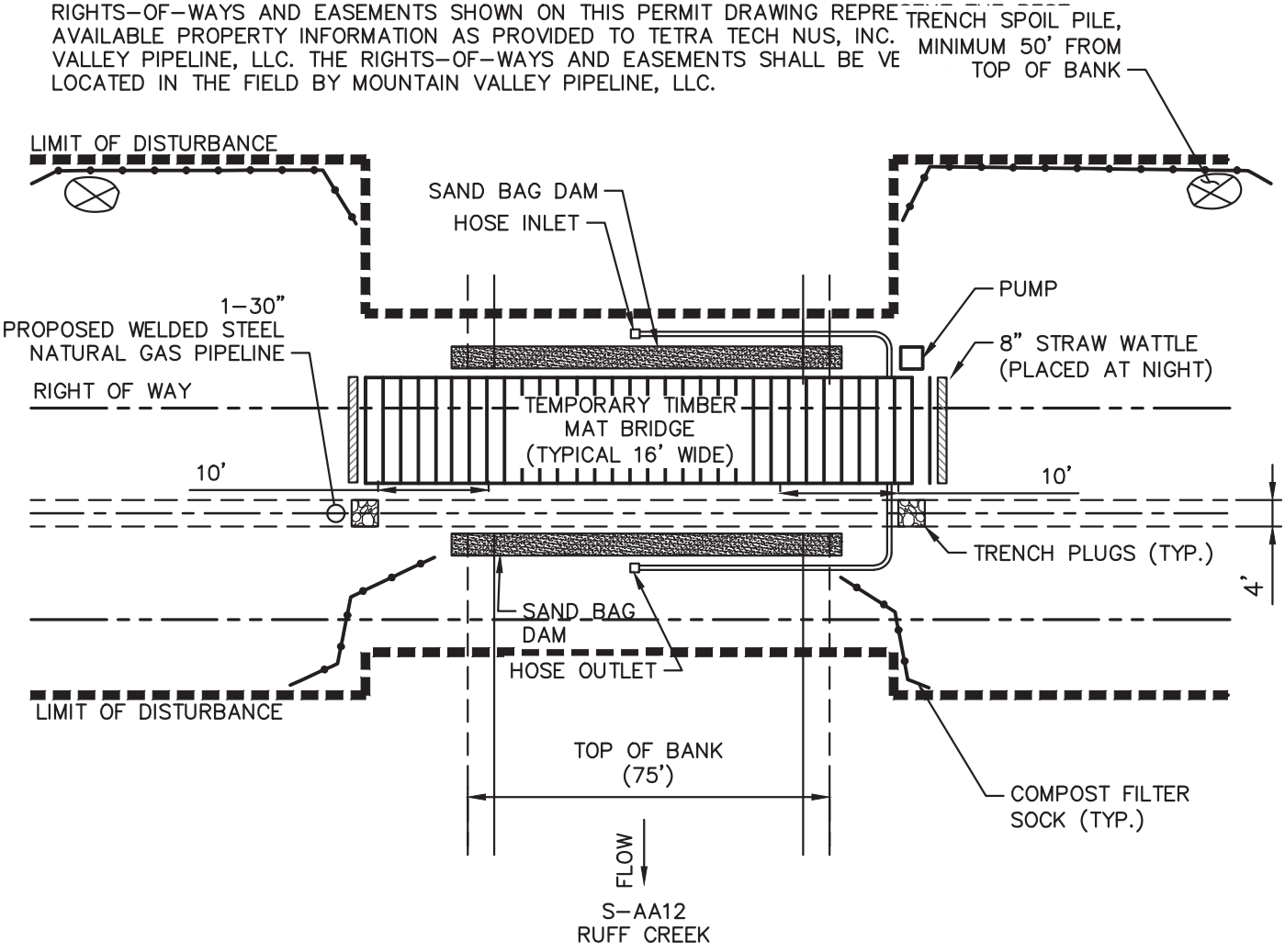
r:_212 – oga\O&G\EQT\00176 – eep\GPs\H316\H316 – 00176GP021.dwg PIT DAN.ZINDREN 10/22/2015 9:18:13 AM

NOTES:

1. TOPO AND SITE FEATURE CREATED USING http:\\www.pasda.psu.edu.

2. TOPSOIL STOCKPILES SHALL BE LOCATED A MINIMUM OF 50' AWAY FROM THE EDGE OF THE WETLAND.

3. THE RIGHTS-OF-WAY AND EASEMENTS SHOWN ON THIS PLAN ARE THE RESPONSIBILITY OF MOUNTAIN VALLEY PIPELINE, LLC TO SECURE WITH THE INDIVIDUAL PROPERTY OWNER. THE RIGHTS-OF-WAYS AND EASEMENTS SHOWN ON THIS PERMIT DRAWING REPRE[illegible] AVAILABLE PROPERTY INFORMATION AS PROVIDED TO TETRA TECH NUS, INC. VALLEY PIPELINE, LLC. THE RIGHTS-OF-WAYS AND EASEMENTS SHALL BE VE LOCATED IN THE FIELD BY MOUNTAIN VALLEY PIPELINE, LLC.



STREAM AA12 IMPACTS:	
LENGTH:	75'
WIDTH:	75'
TOTAL AREA:	5,625 S.F.

FLOODPLAIN IMPACTS	
LENGTH:	229'
WIDTH:	75'
TOTAL AREA:	17,175 S.F.

PLAN
NOT TO SCALE

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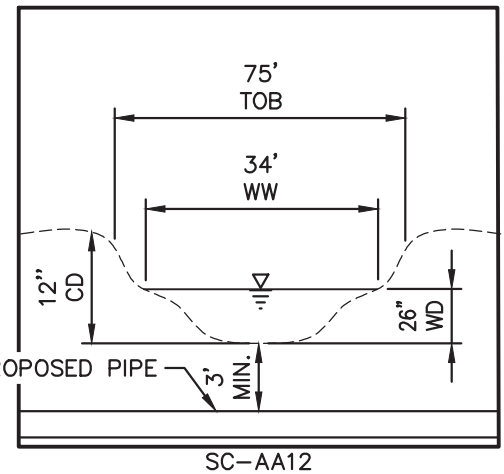
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP-5/GP-8 FOR SC-AA12
PLAN
SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 4

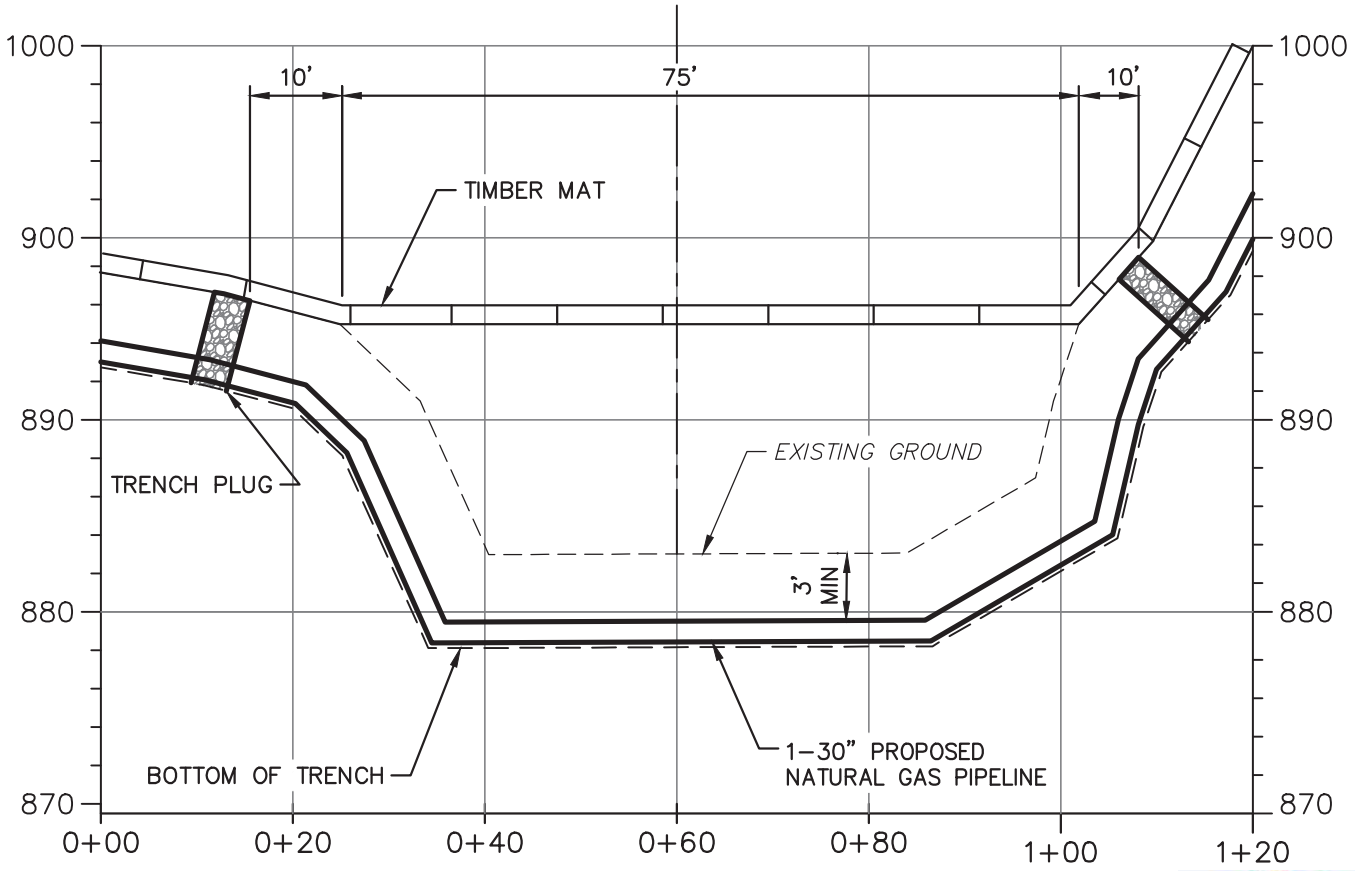
FIGURE 2



SC-AA12
NOT TO SCALE

SC-AA12 CHANNEL WIDTH = 75'
SC-AA12 CHANNEL DEPTH = 12'
SC-AA12 WATER WIDTH = 34'
SC-AA12 WATER DEPTH = 26"

S-AA12
RUFF CREEK



PROFILE FOR S-AA12 OPEN-CUT TRENCH PROFILE

SCALE: HORIZ: 1" = 20'
VERT: 1" = 10'

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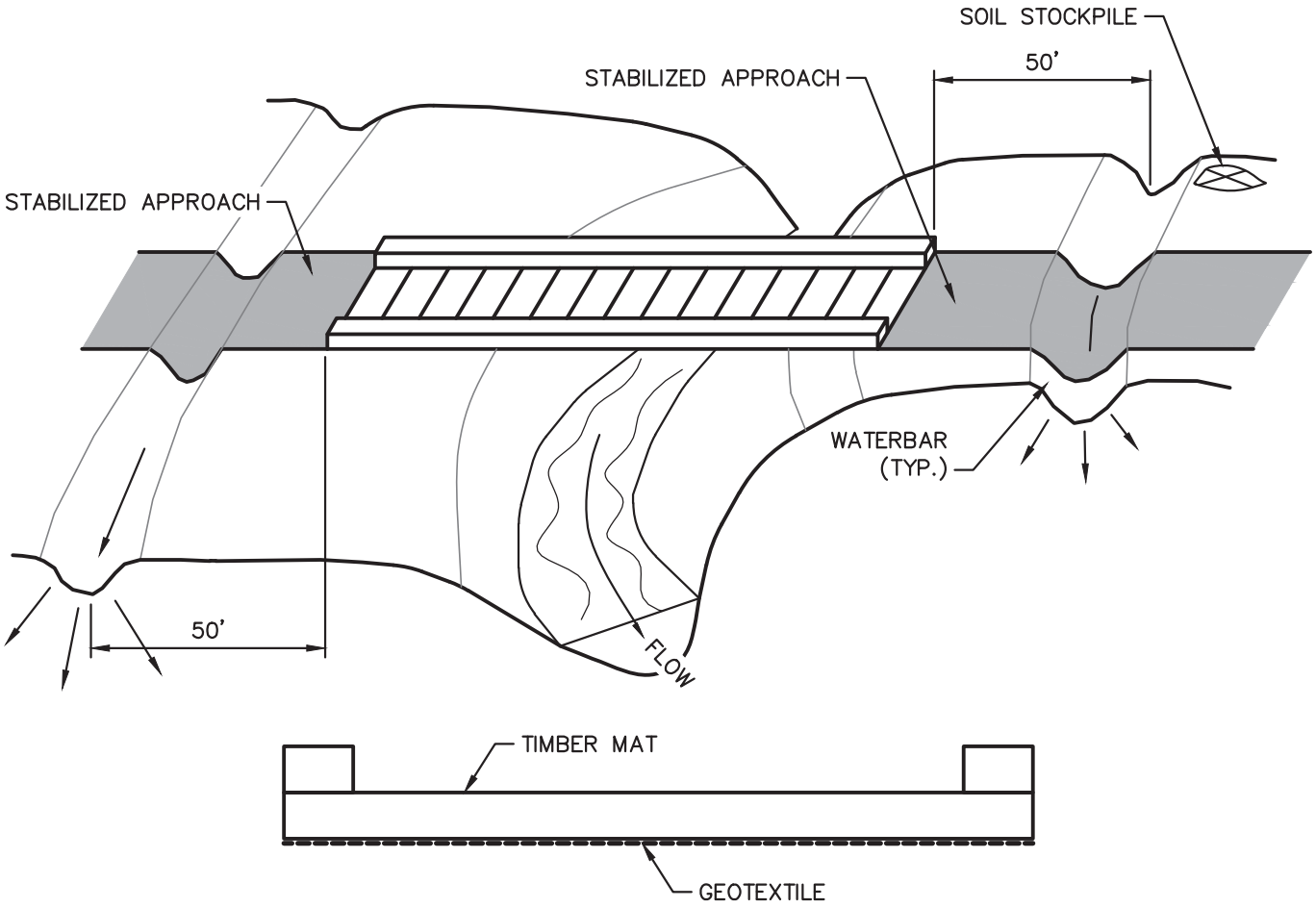
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE - GREENE COUNTY
GP-5/GP-8 FOR S-AA12
PROFILE
SCALE: AS NOTED

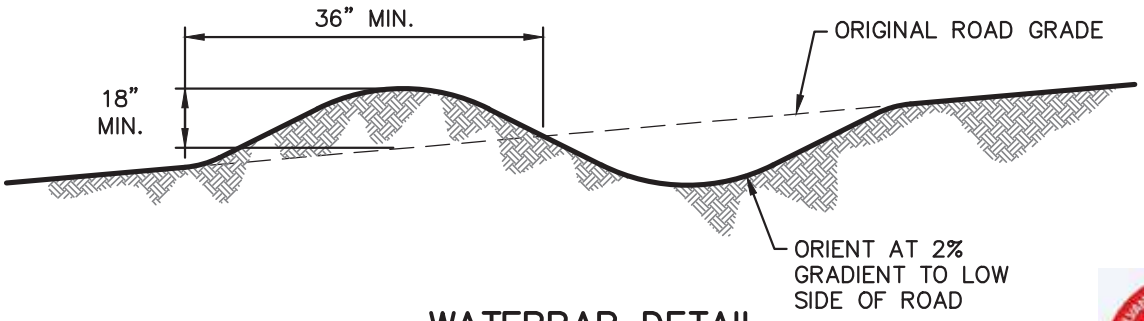
DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 4

FIGURE 3



TEMPORARY STREAM CROSSING

NOT TO SCALE



WATERBAR DETAIL

NOT TO SCALE

NOTE:
APPROACH TO CROSSING NOT TO EXCEED A DEPTH OF 6" ABOVE ORIGINAL GRADE

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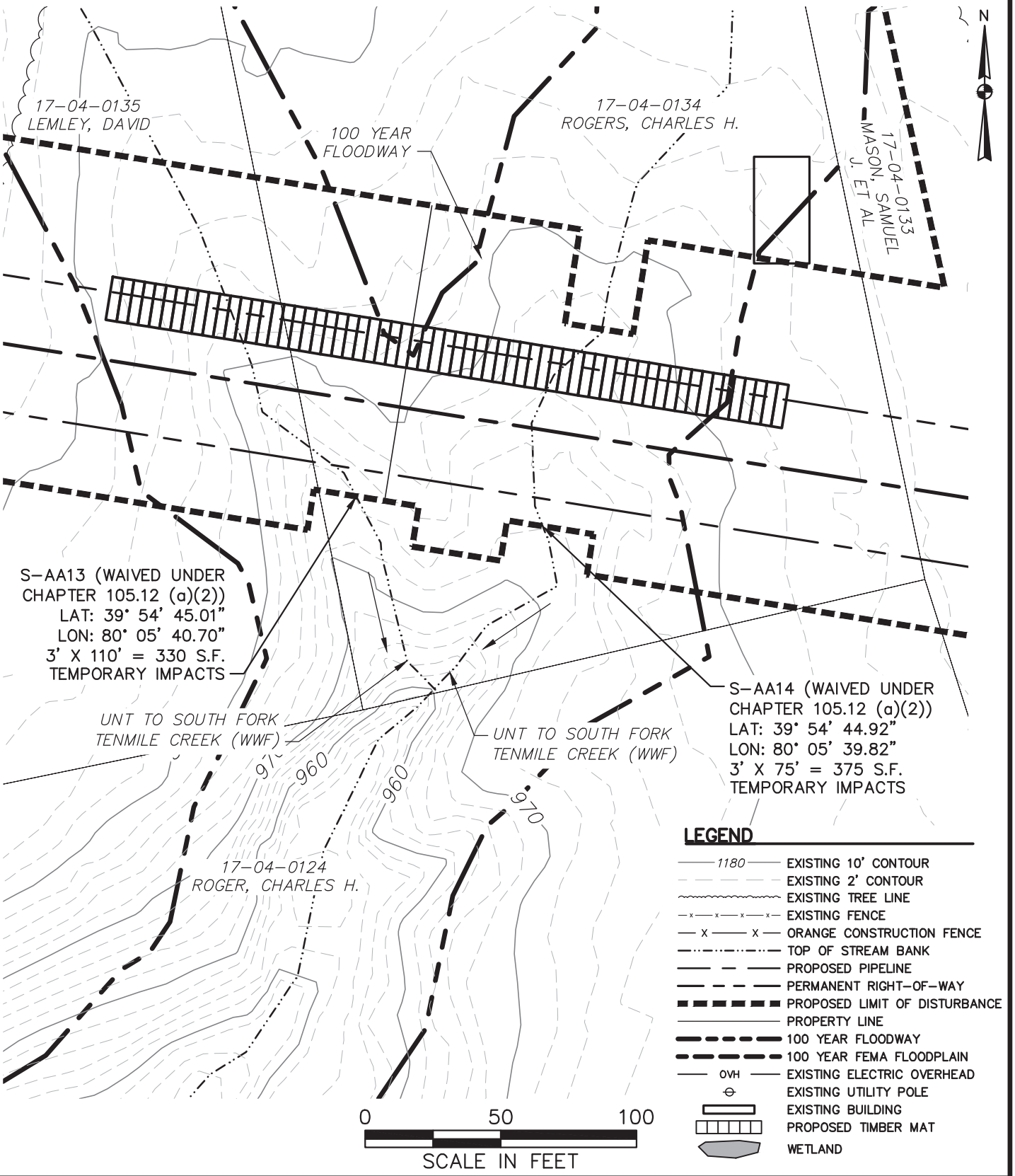
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP-8 FOR S-AA12
STREAM CROSSING
SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	4 OF 4

FIGURE 4



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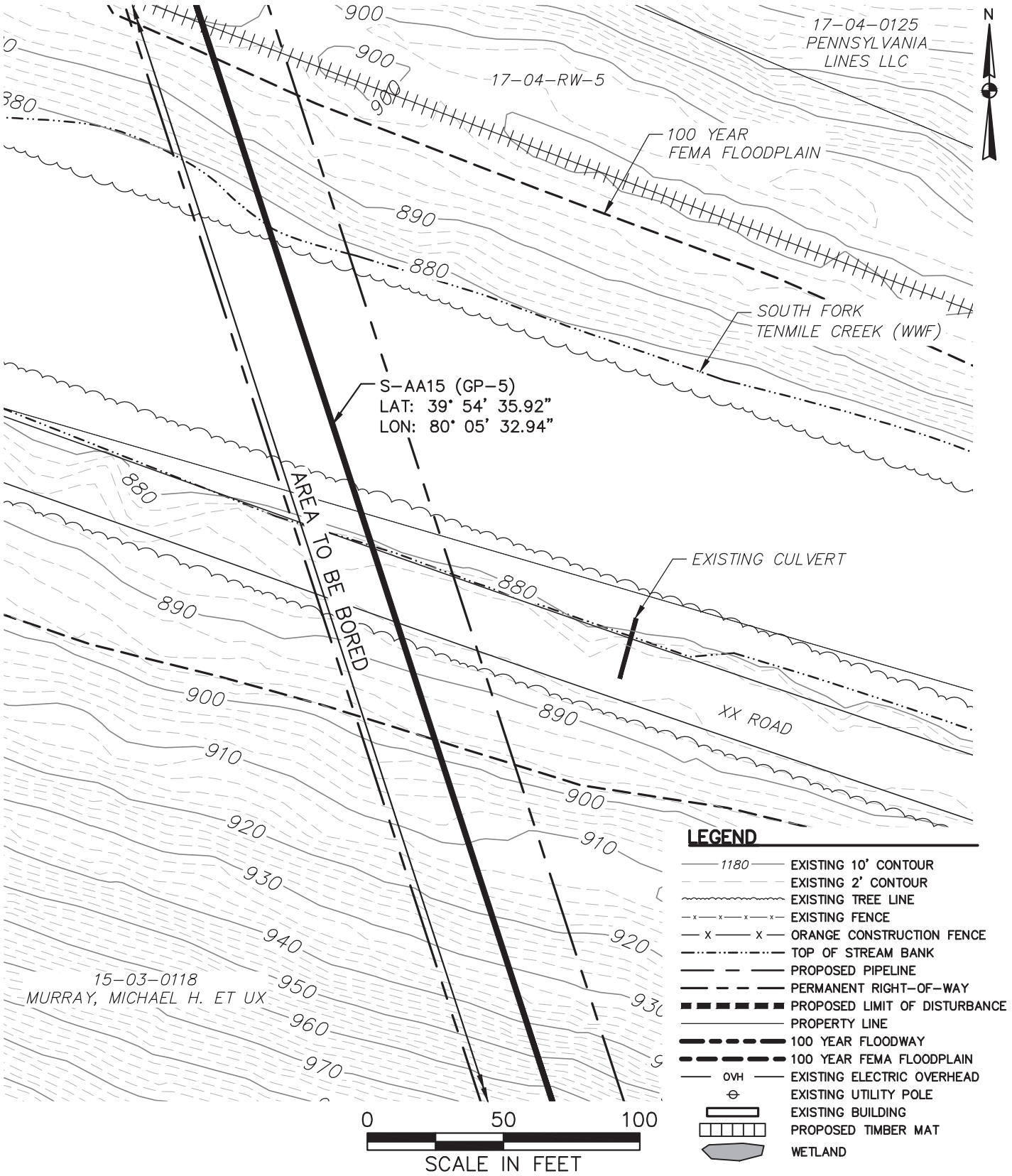
H316 PIPELINE – GREENE COUNTY
WAIVED UNDER CHAPTER 105.12 (a)(2)
FOR S-AA13/S-AA14 – PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 1

FIGURE 1



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EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP-5 FOR S-AA15
PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

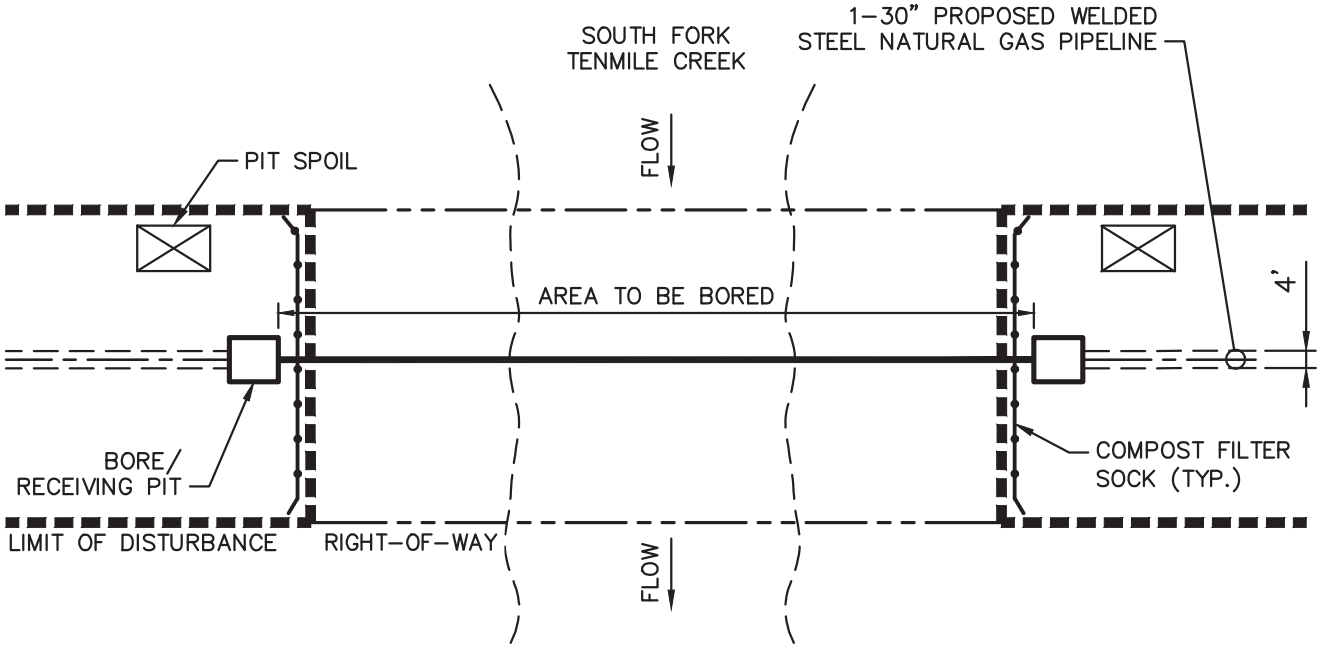
FIGURE 1

NOTES:

1. TOPO AND SITE FEATURE CREATED USING http:\\www.pasda.psu.edu.

2. TOPSOIL STOCKPILES SHALL BE LOCATED A MINIMUM OF 50' AWAY FROM THE EDGE OF THE WETLAND.

3. THE RIGHTS-OF-WAY AND EASEMENTS SHOWN ON THIS PLAN ARE THE RESPONSIBILITY OF EQUITRANS, LP TO SECURE WITH THE INDIVIDUAL PROPERTY OWNER. THE RIGHTS-OF-WAYS AND EASEMENTS SHOWN ON THIS PERMIT DRAWING REPRESENT THE BEST AVAILABLE PROPERTY INFORMATION AS PROVIDED TO TETRA TECH NUS, INC. BY EQUITRANS, LP. THE RIGHTS-OF-WAYS AND EASEMENTS SHALL BE VERIFIED AND LOCATED IN THE FIELD BY EQUITRANS, LP.



STREAM AA15 IMPACTS:
LENGTH: 100'
WIDTH: 2.5'
TOTAL AREA: 250 S.F.

FLOODPLAIN IMPACTS:
LENGTH: 263'
WIDTH: 2.5'
TOTAL AREA: 657.5 S.F.

PLAN
NOT TO SCALE

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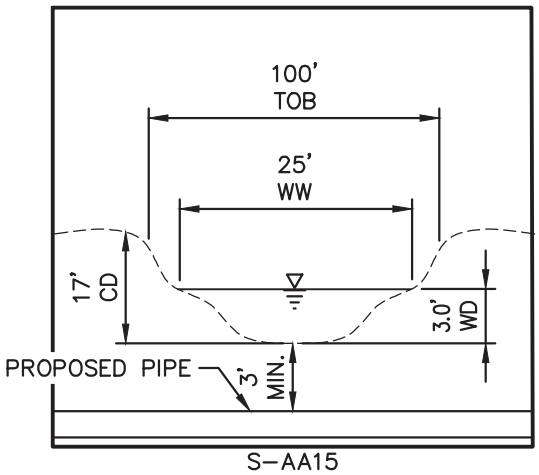
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE - GREENE COUNTY
GP-5 FOR S-AA15
PLAN
SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 3

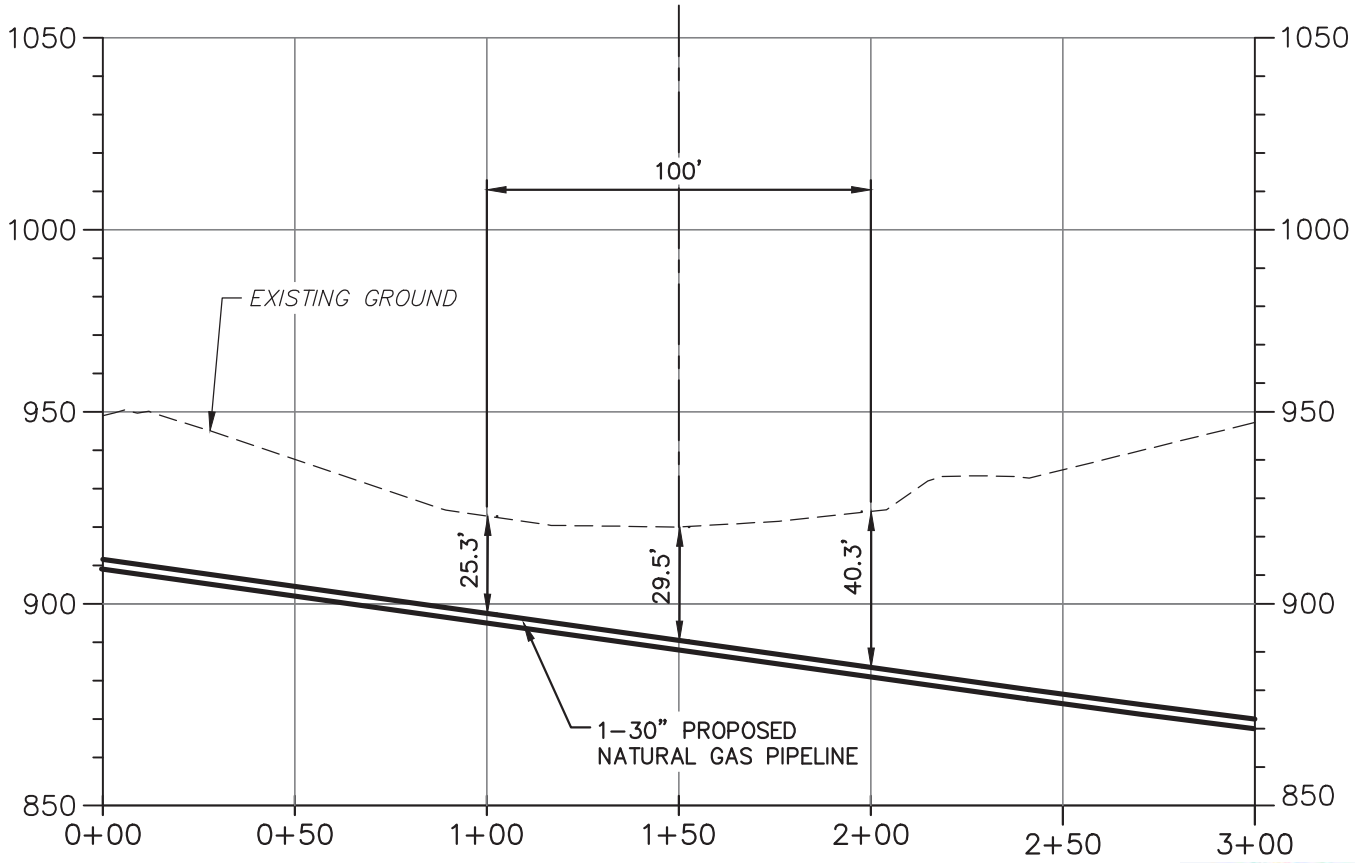
FIGURE 2



S-AA15
NOT TO SCALE

S-AA15 CHANNEL WIDTH = 100'
S-AA15 CHANNEL DEPTH = 17'
S-AA15 WATER WIDTH = 25'
S-AA15 WATER DEPTH = 3.0'

S-AA15
SOUTH FORK
CROSS CREEK



PROFILE FOR S-AA15 HDD PROFILE

SCALE: HORIZ: 1" = 50'
VERT: 1" = 50'

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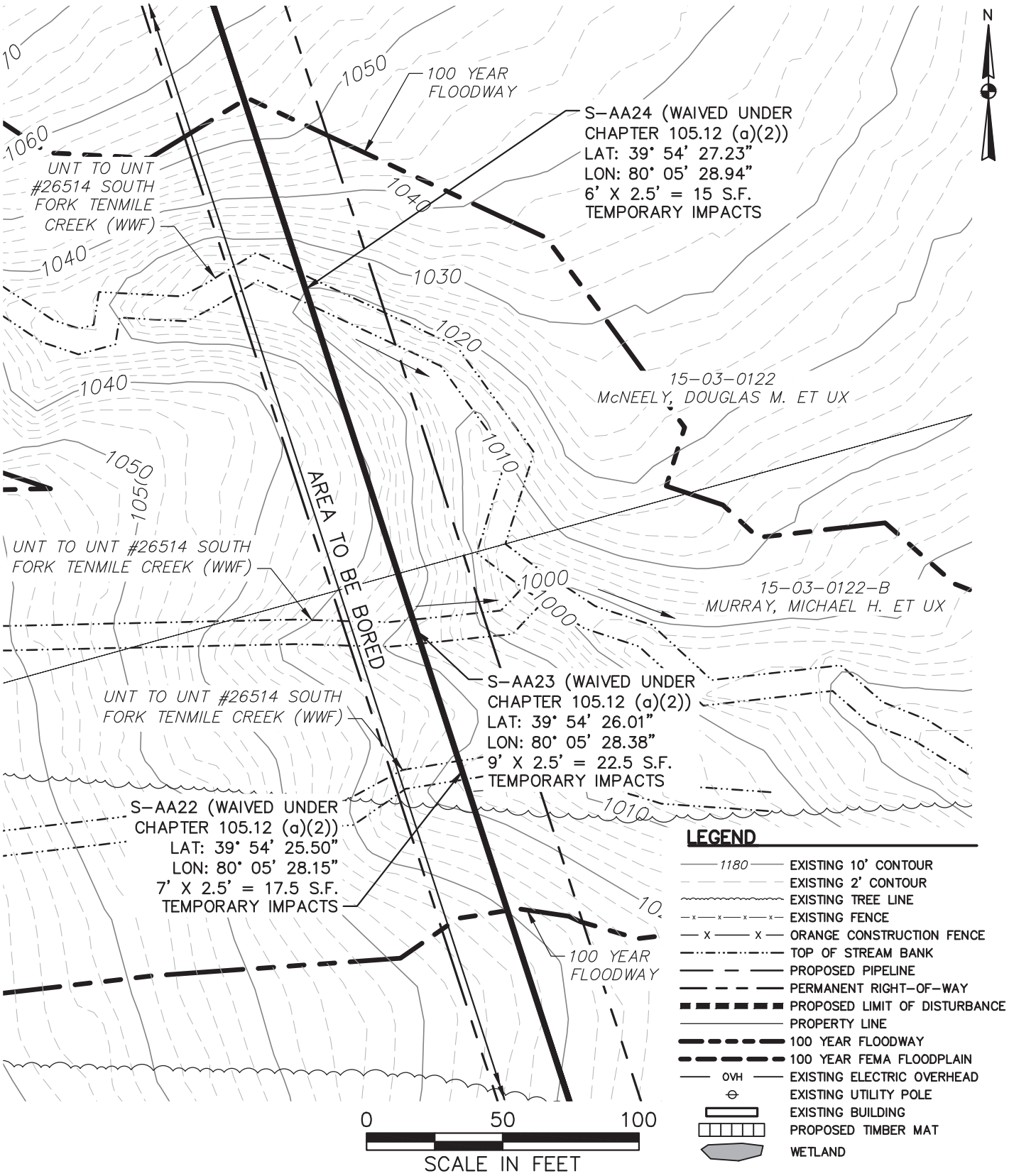
H316 PIPELINE - GREENE COUNTY
GP-5 FOR S-AA15
PROFILE
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 4

FIGURE 3



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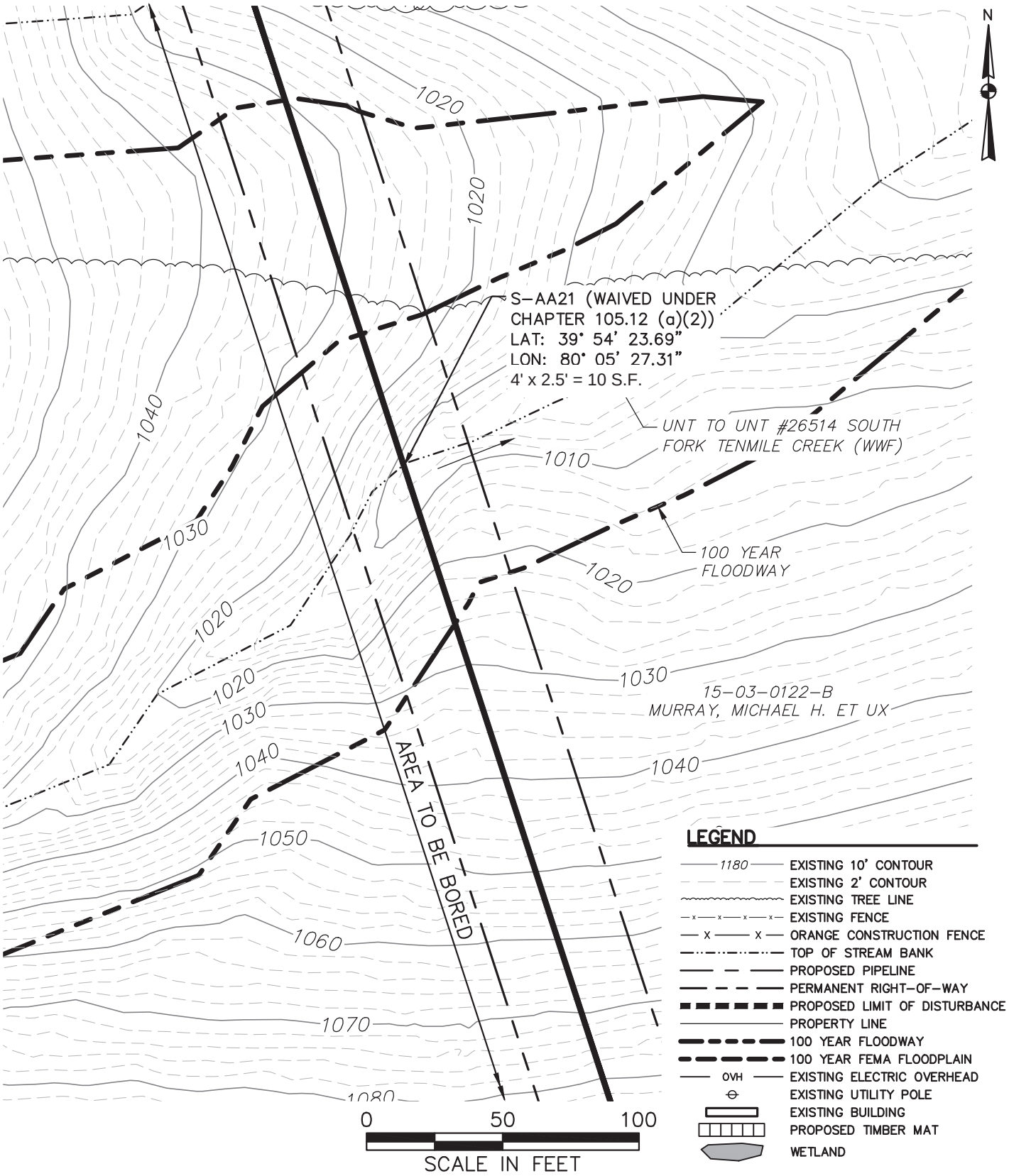
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
WAIVED UNDER CHAPTER 105.12 (a)(2)
FOR S-AA24/S-AA23/S-AA22 – PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 1

FIGURE 1



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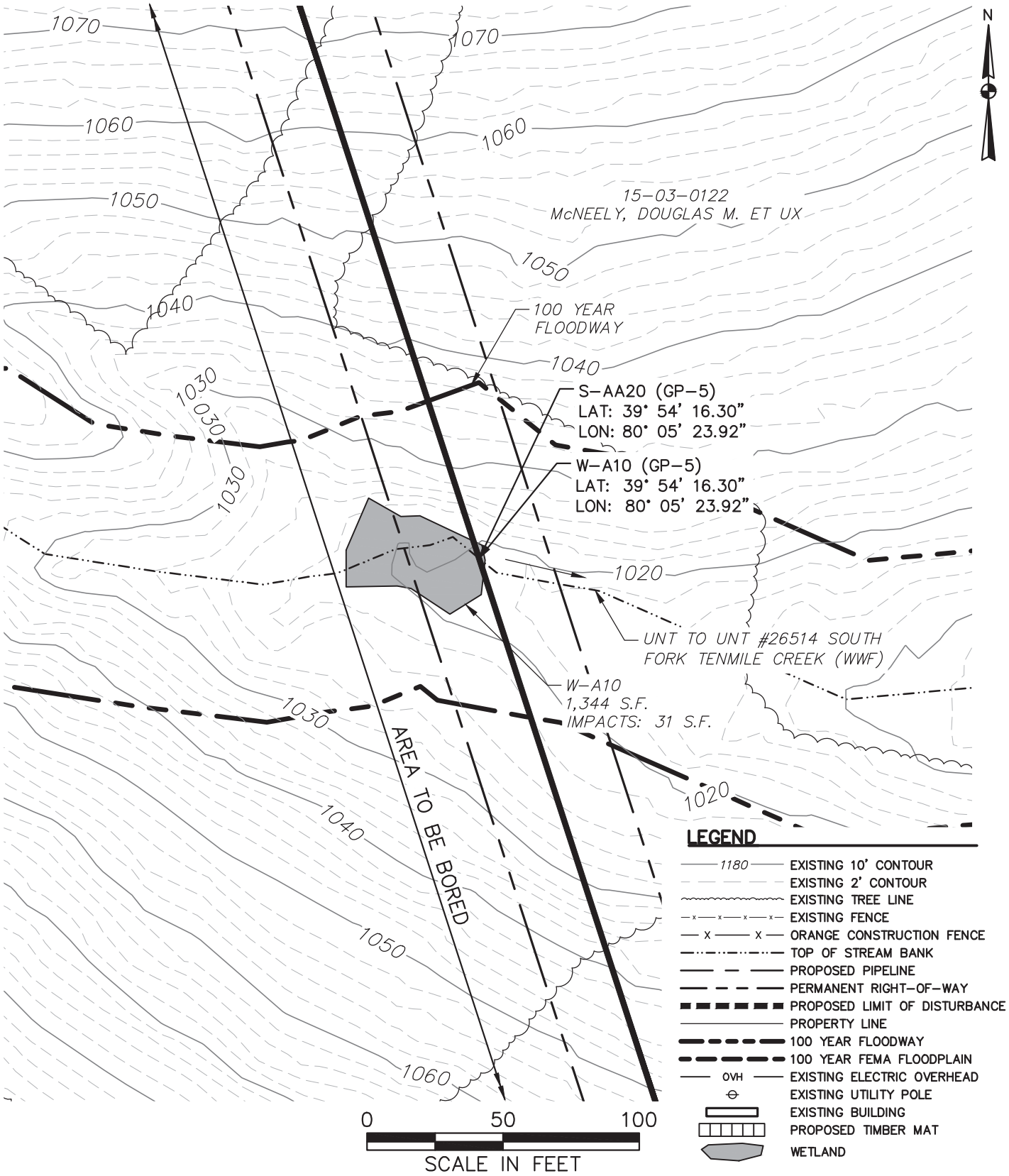
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
WAIVED UNDER CHAPTER 105.12 (a)(2)
FOR S-AA21 – PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 1

FIGURE 1



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EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP-5 FOR S-AA20/W-AA10
PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

FIGURE 1

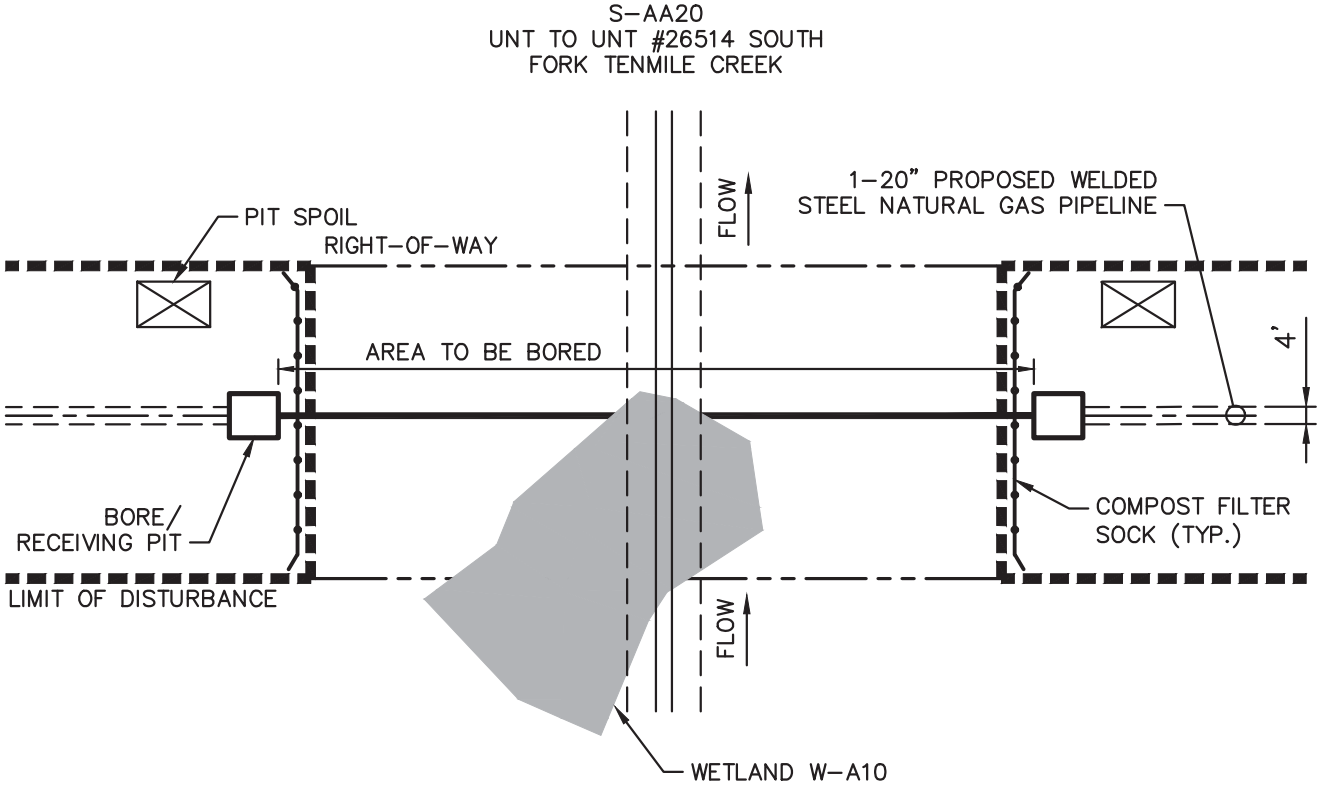
r:_212 – oga\O&G\EQT\00176 – eep\GPs\H316\H316 – 00176GP041.dwg PIT NICHOLE.NAJESKI 10/22/2015 8:32:06 AM

NOTES:

1. TOPO AND SITE FEATURE CREATED USING http:\\www.pasda.psu.edu.

2. TOPSOIL STOCKPILES SHALL BE LOCATED A MINIMUM OF 50' AWAY FROM THE EDGE OF THE WETLAND.

3. THE RIGHTS-OF-WAY AND EASEMENTS SHOWN ON THIS PLAN ARE THE RESPONSIBILITY OF EQUITRANS, LP TO SECURE WITH THE INDIVIDUAL PROPERTY OWNER. THE RIGHTS-OF-WAYS AND EASEMENTS SHOWN ON THIS PERMIT DRAWING REPRESENT THE BEST AVAILABLE PROPERTY INFORMATION AS PROVIDED TO TETRA TECH NUS, INC. BY EQUITRANS, LP. THE RIGHTS-OF-WAYS AND EASEMENTS SHALL BE VERIFIED AND LOCATED IN THE FIELD BY EQUITRANS, LP.



STREAM S-AA20 IMPACTS:
LENGTH: 1'
WIDTH: 2.5'
TOTAL AREA: 2.5 S.F.

WETLAND W-A10 IMPACTS:
LENGTH: 12.4'
WIDTH: 2.5'
TOTAL AREA: 31 S.F.

FLOODPLAIN IMPACTS:
LENGTH: 100'
WIDTH: 2.5'
TOTAL AREA: 250 S.F.

PLAN
NOT TO SCALE

TETRA TECH
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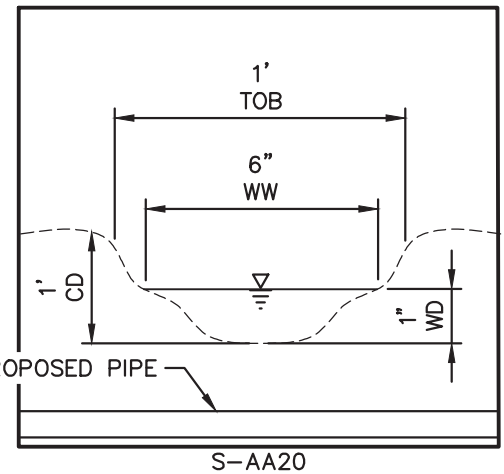
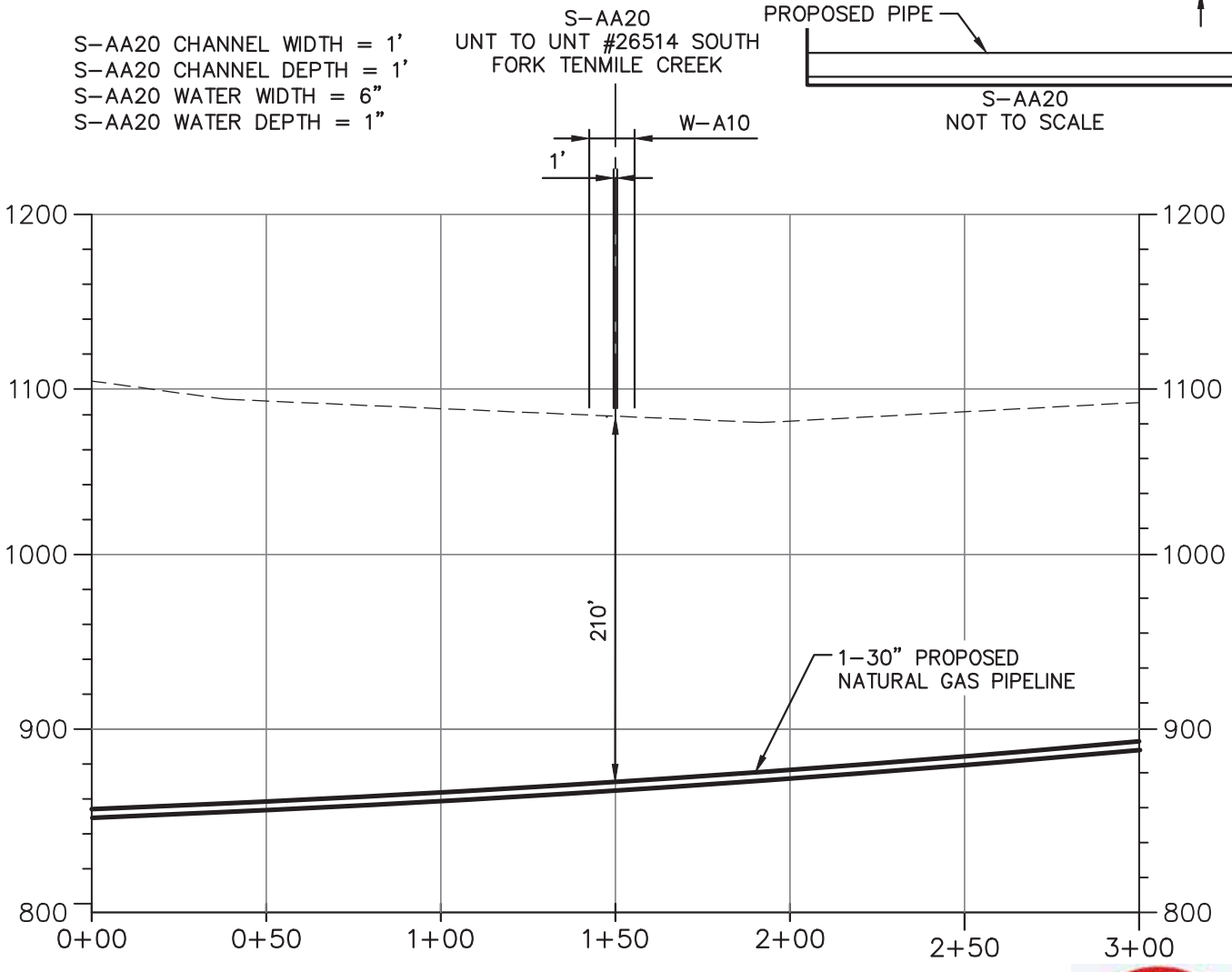
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE - GREENE COUNTY
GP-5 FOR S-AA20 & W-A10
PLAN
SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 3

FIGURE 2



S-AA20 CHANNEL WIDTH = 1'
S-AA20 CHANNEL DEPTH = 1'
S-AA20 WATER WIDTH = 6"
S-AA20 WATER DEPTH = 1"



PROFILE FOR S-AA20 & W-A10 HDD PROFILE

SCALE: HORIZ: 1" = 50'
VERT: 1" = 100'

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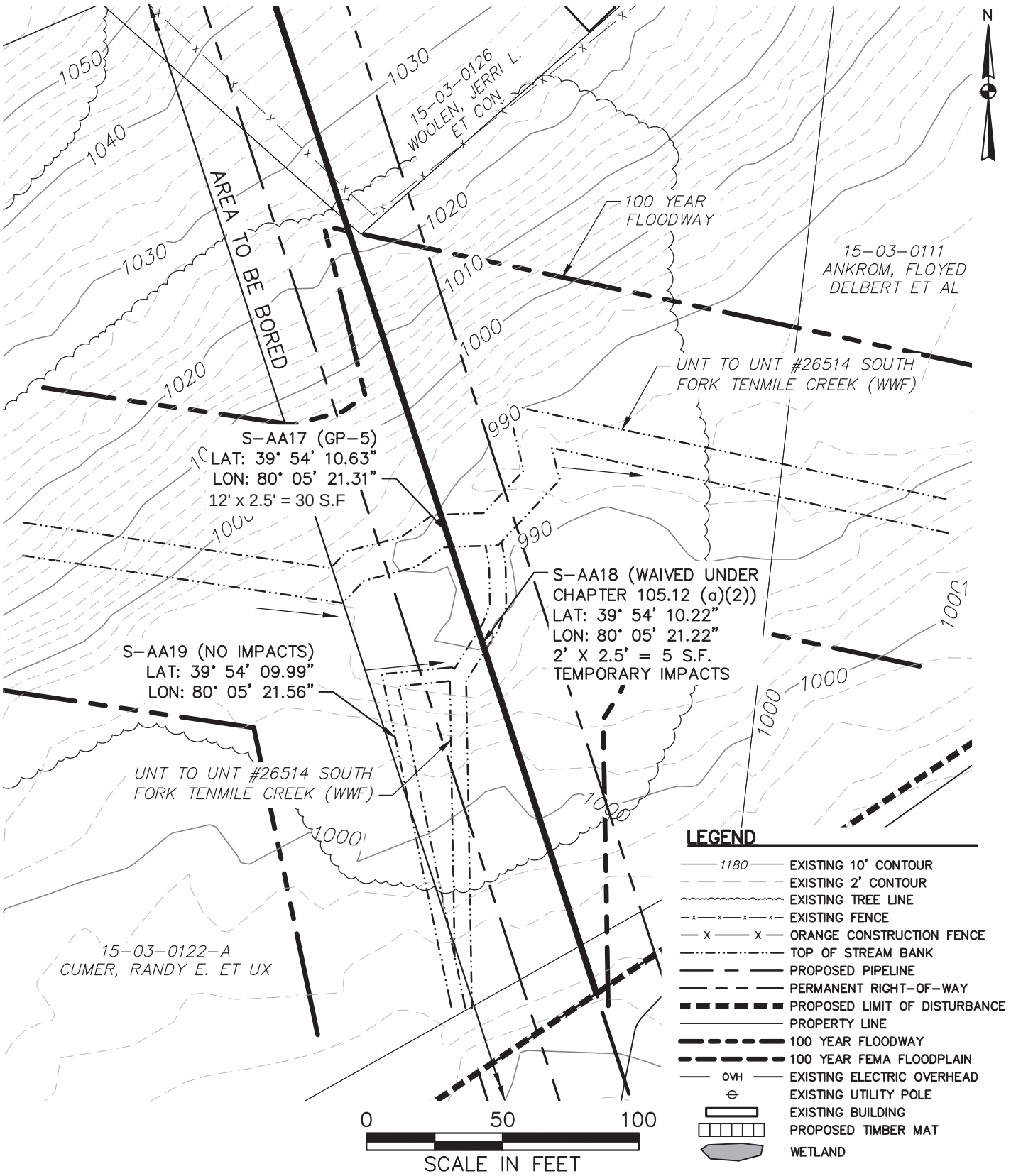
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE - GREENE COUNTY
GP-5 FOR S-AA20 & W-A10
PROFILE
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 4

FIGURE 3



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PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP-5 FOR S-AA17 -PLAN
WAIVED UNDER CHAPTER 105.12 (a)(2) S-AA18

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 4

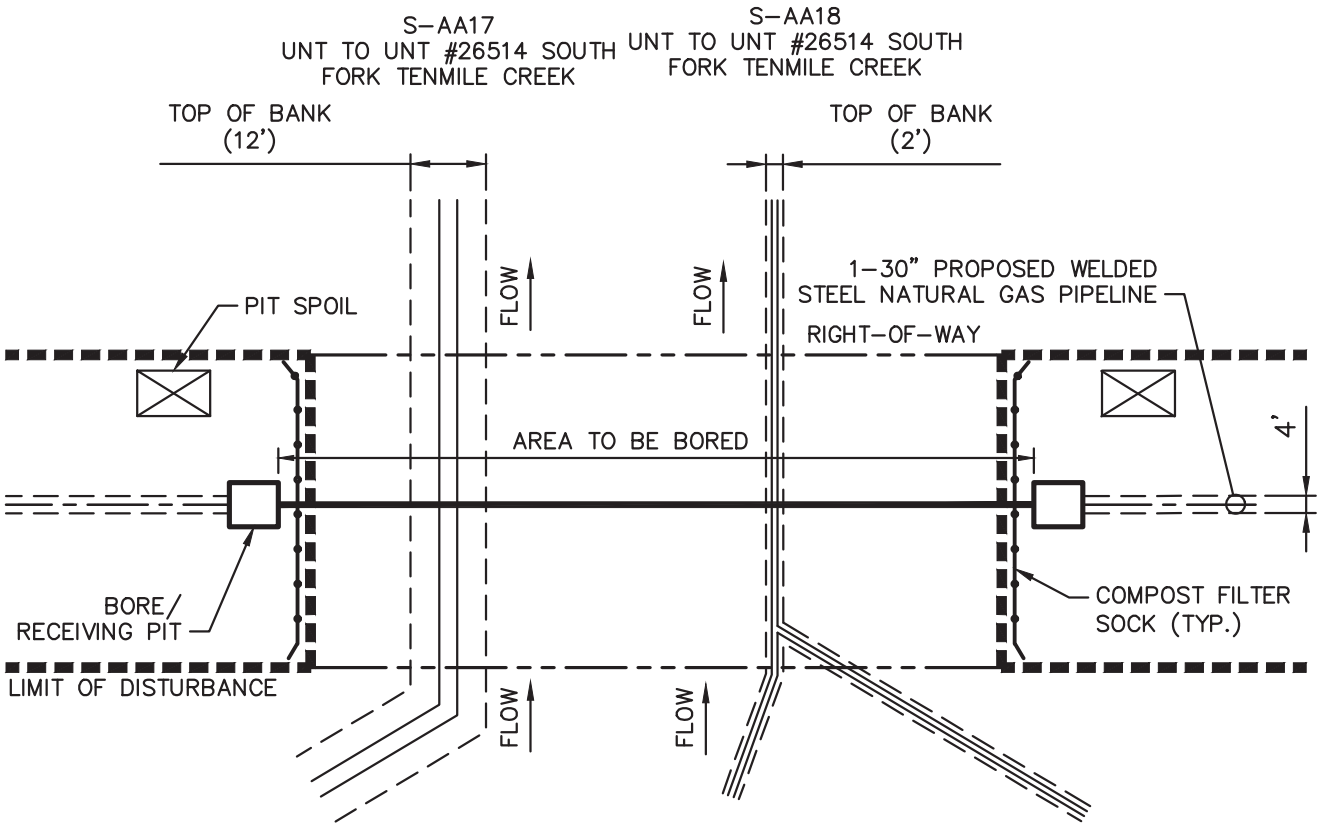
FIGURE 1

NOTES:

1. TOPO AND SITE FEATURE CREATED USING http:\\www.pasda.psu.edu.

2. TOPSOIL STOCKPILES SHALL BE LOCATED A MINIMUM OF 50' AWAY FROM THE EDGE OF THE WETLAND.

3. THE RIGHTS-OF-WAY AND EASEMENTS SHOWN ON THIS PLAN ARE THE RESPONSIBILITY OF EQUITRANS, LP TO SECURE WITH THE INDIVIDUAL PROPERTY OWNER. THE RIGHTS-OF-WAYS AND EASEMENTS SHOWN ON THIS PERMIT DRAWING REPRESENT THE BEST AVAILABLE PROPERTY INFORMATION AS PROVIDED TO TETRA TECH NUS, INC. BY EQUITRANS, LP. THE RIGHTS-OF-WAYS AND EASEMENTS SHALL BE VERIFIED AND LOCATED IN THE FIELD BY EQUITRANS, LP.



S-AA17 STREAM IMPACTS:
LENGTH: 12'
WIDTH: 2.5'
TOTAL AREA: 30 S.F.

S-AA18 STREAM IMPACTS:
LENGTH: 2'
WIDTH: 2.5'
TOTAL AREA: 5 S.F.

PENNSYLVANIA ONE CALL SYSTEM INC. 1-800-242-1776 STOP! CALL BEFORE YOU DIG!

PLAN
NOT TO SCALE

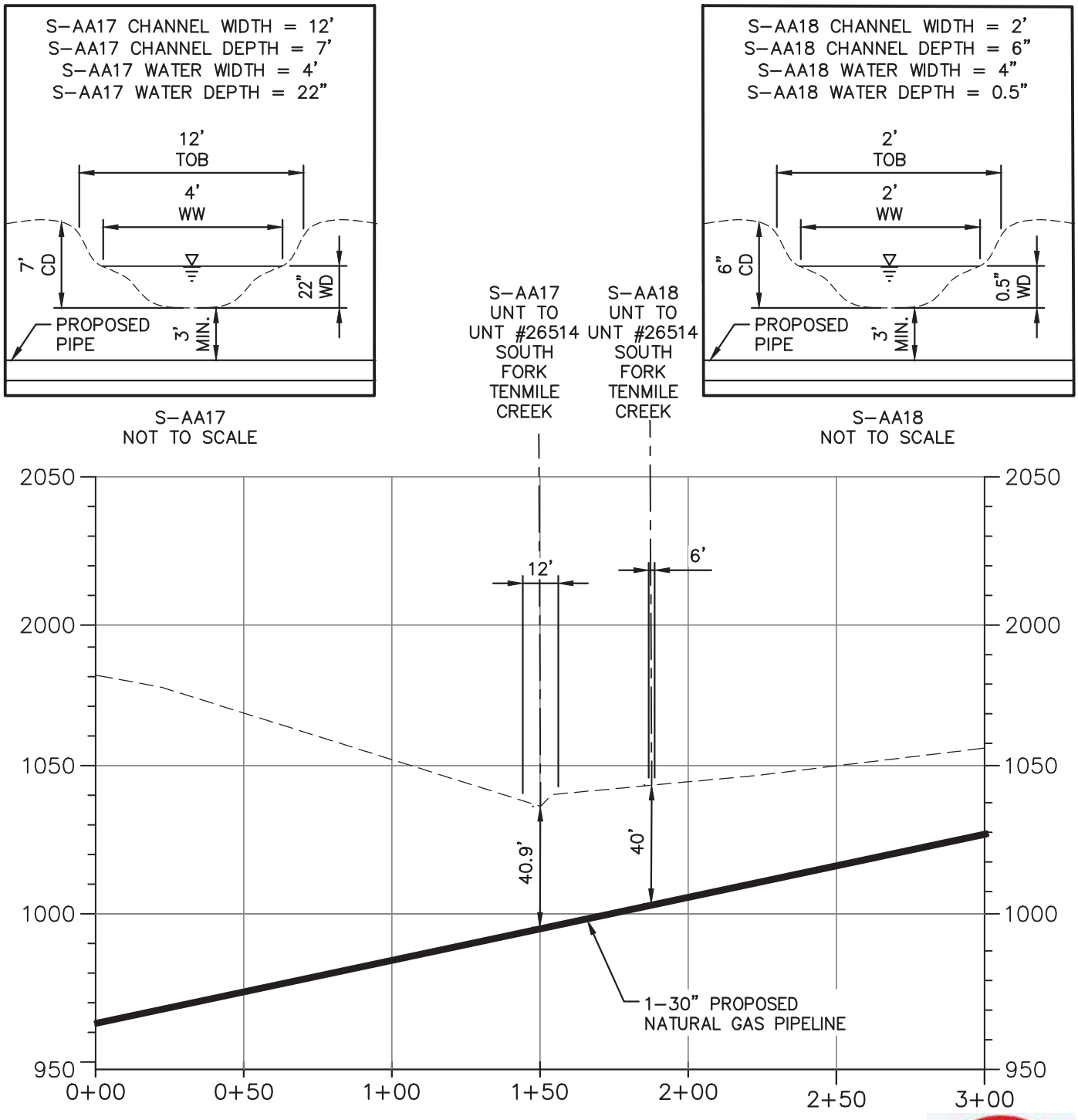
TETRA TECH
WWW.TETRATECH.COM
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP-5 FOR S-AA17 & S-AA18
PLAN

SCALE: NOT TO SCALE

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	2 OF 3

FIGURE 2



PROFILE FOR S-AA17 & S-AA18 HDD PROFILE

SCALE: HORIZ: 1" = 50'
VERT: 1" = 50'

TETRA TECH
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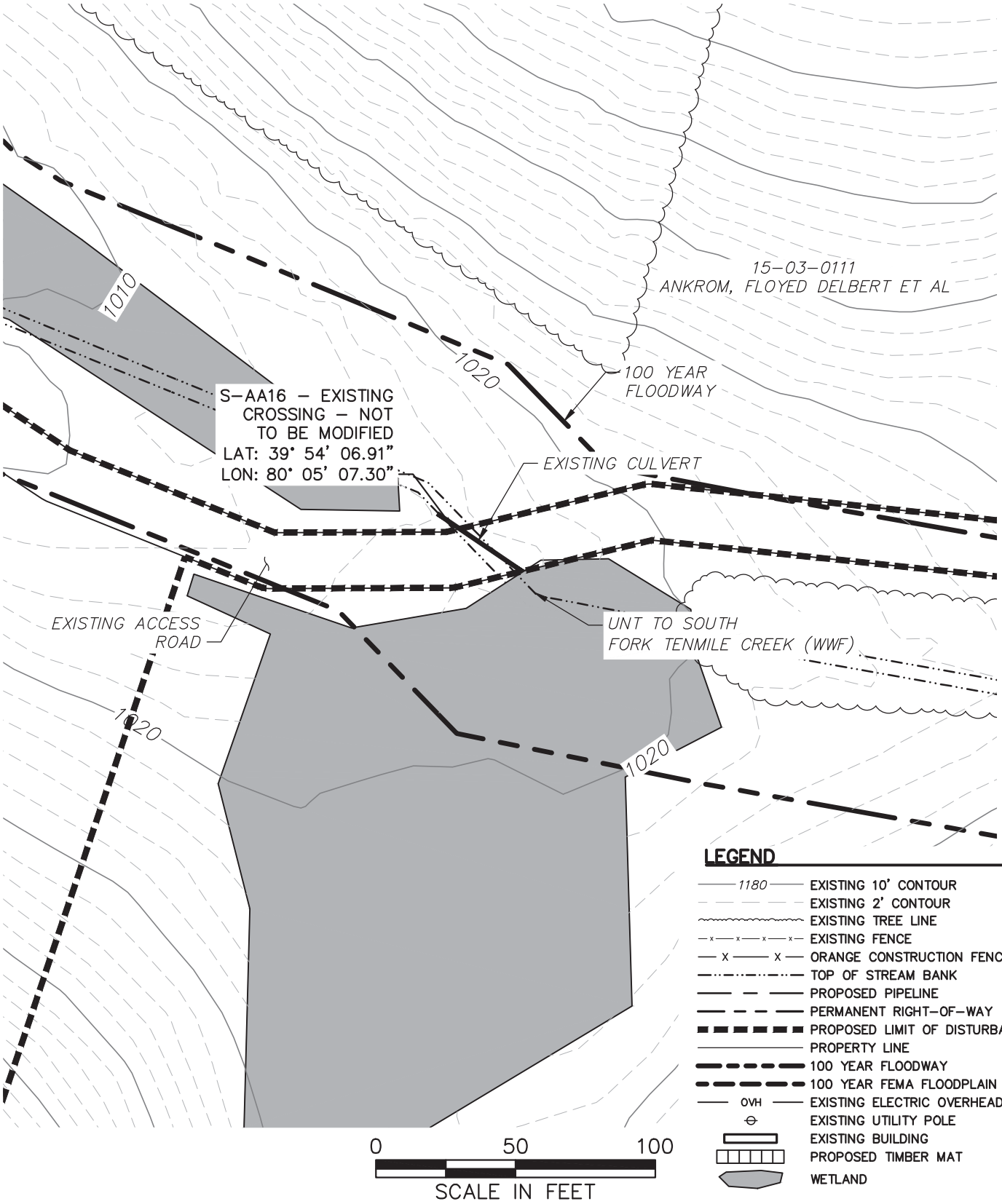
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP-5 FOR S-AA17 & S-AA18
PROFILE
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	3 OF 4

FIGURE 3



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PITTSBURGH, PA 15220
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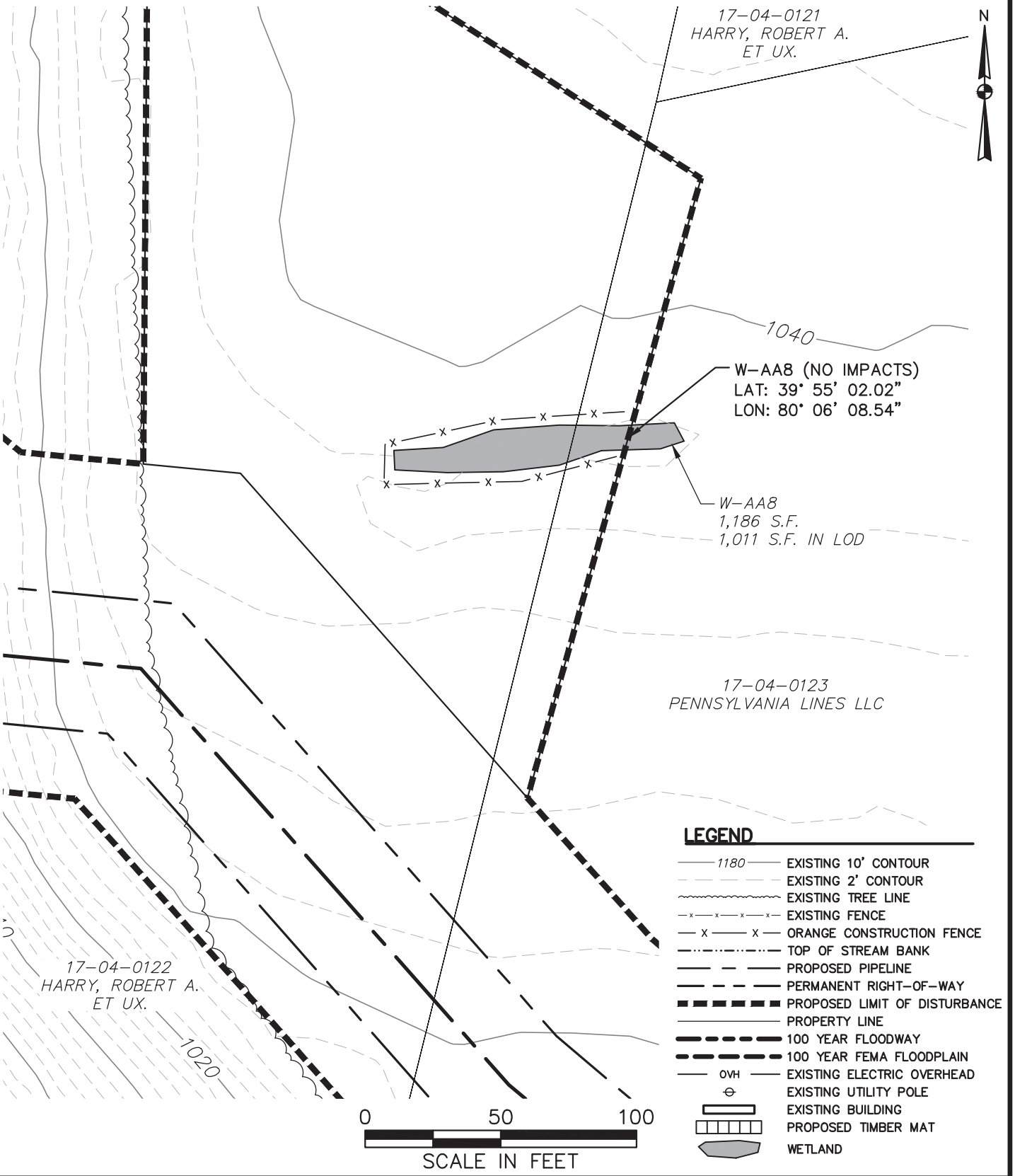
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE - GREENE COUNTY
GP-8 FOR S-AA16
PLAN
SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 1

FIGURE 1



TETRA TECH
WWW.TETRATECH.COM
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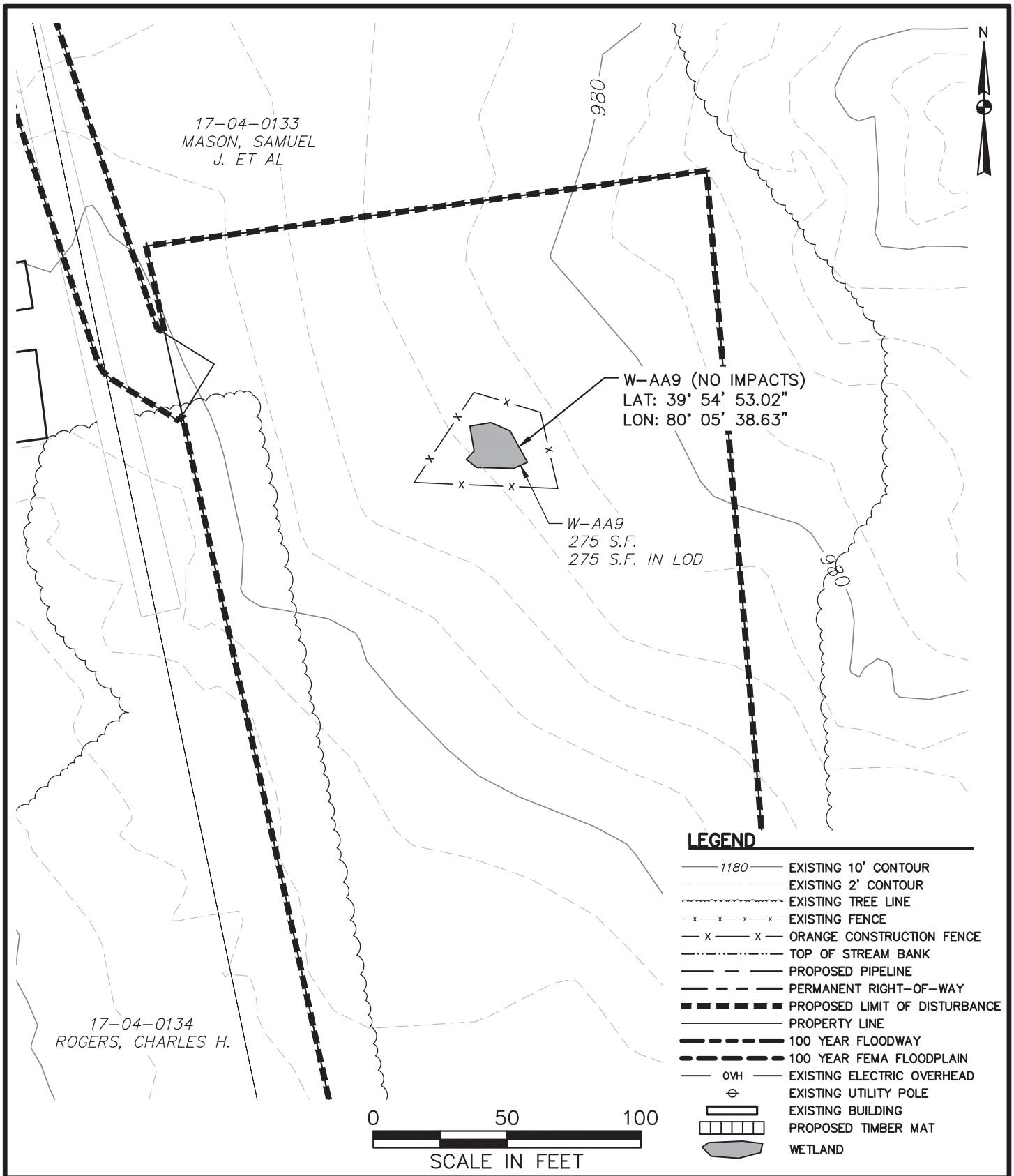
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP-8 FOR W-AA8
PLAN
SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 1

FIGURE 1



TETRA TECH
WWW.TETRATECH.COM
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PITTSBURGH, PA 15220
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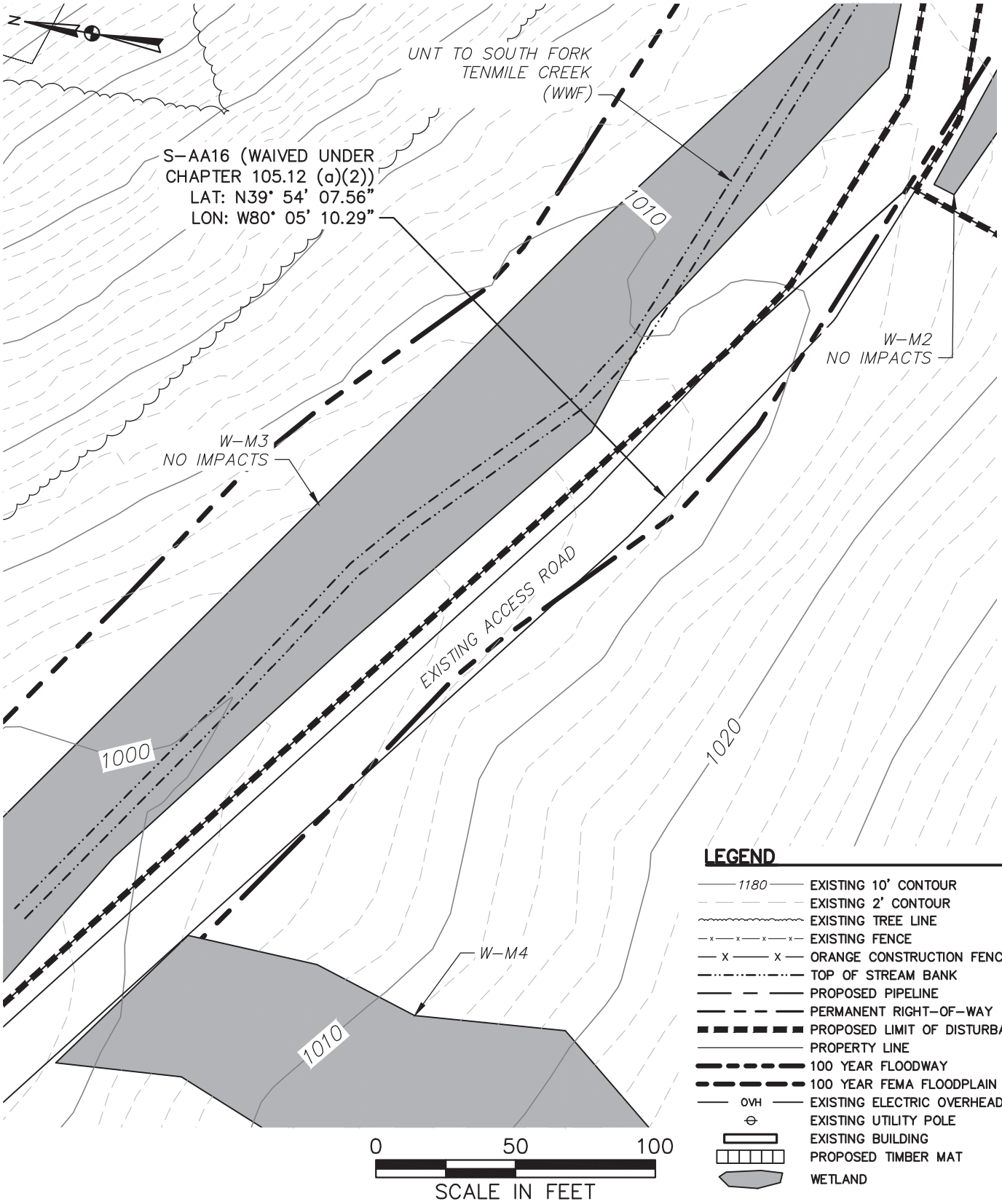
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP–8 FOR W–AA9
PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC–PB–00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 1

FIGURE 1



TETRA TECH
WWW.TETRATECH.COM
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
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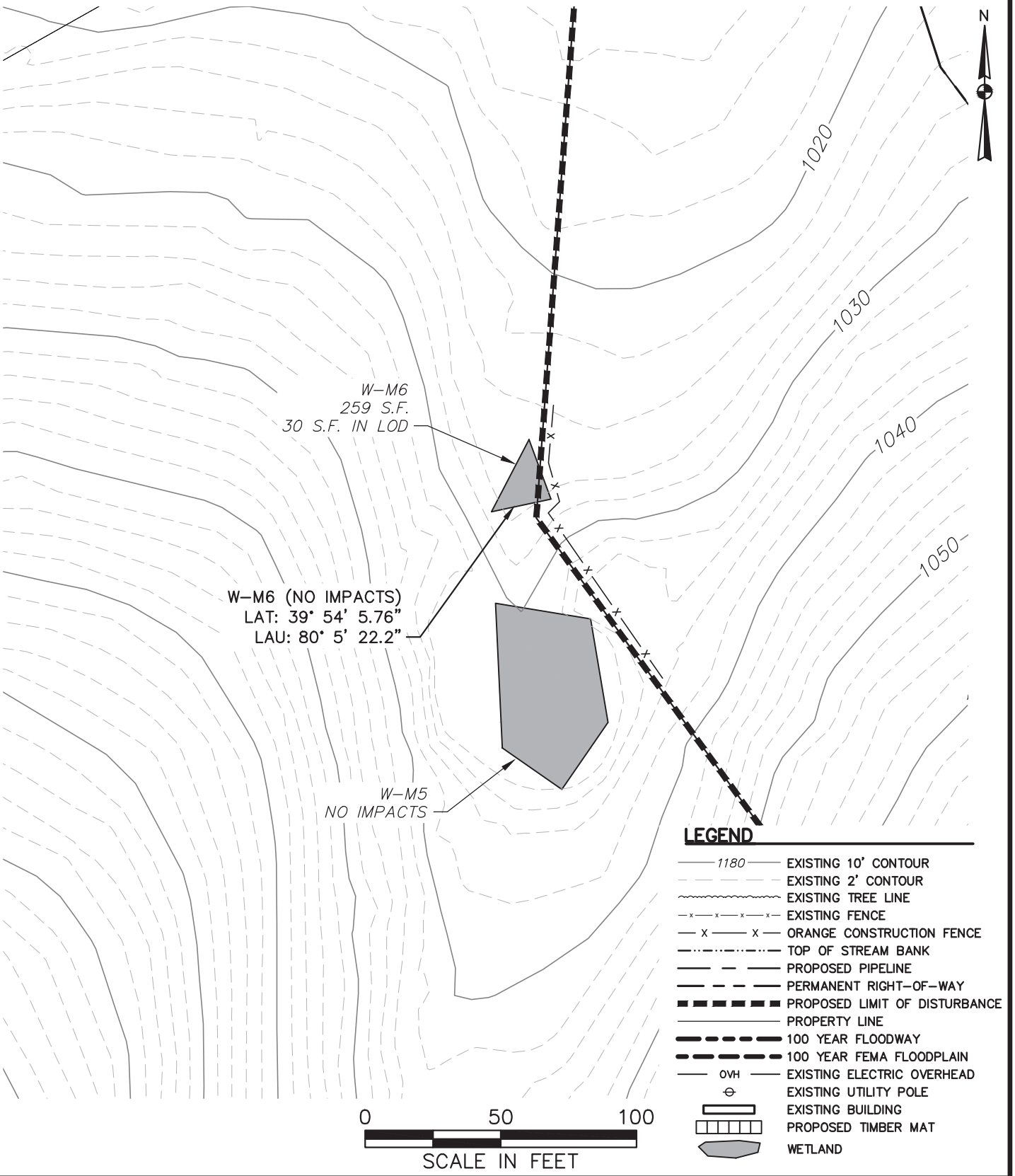
EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
WAIVED UNDER CHAPTER 105.12 (a)(2)
FOR S-AA16 – PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 1

FIGURE 1



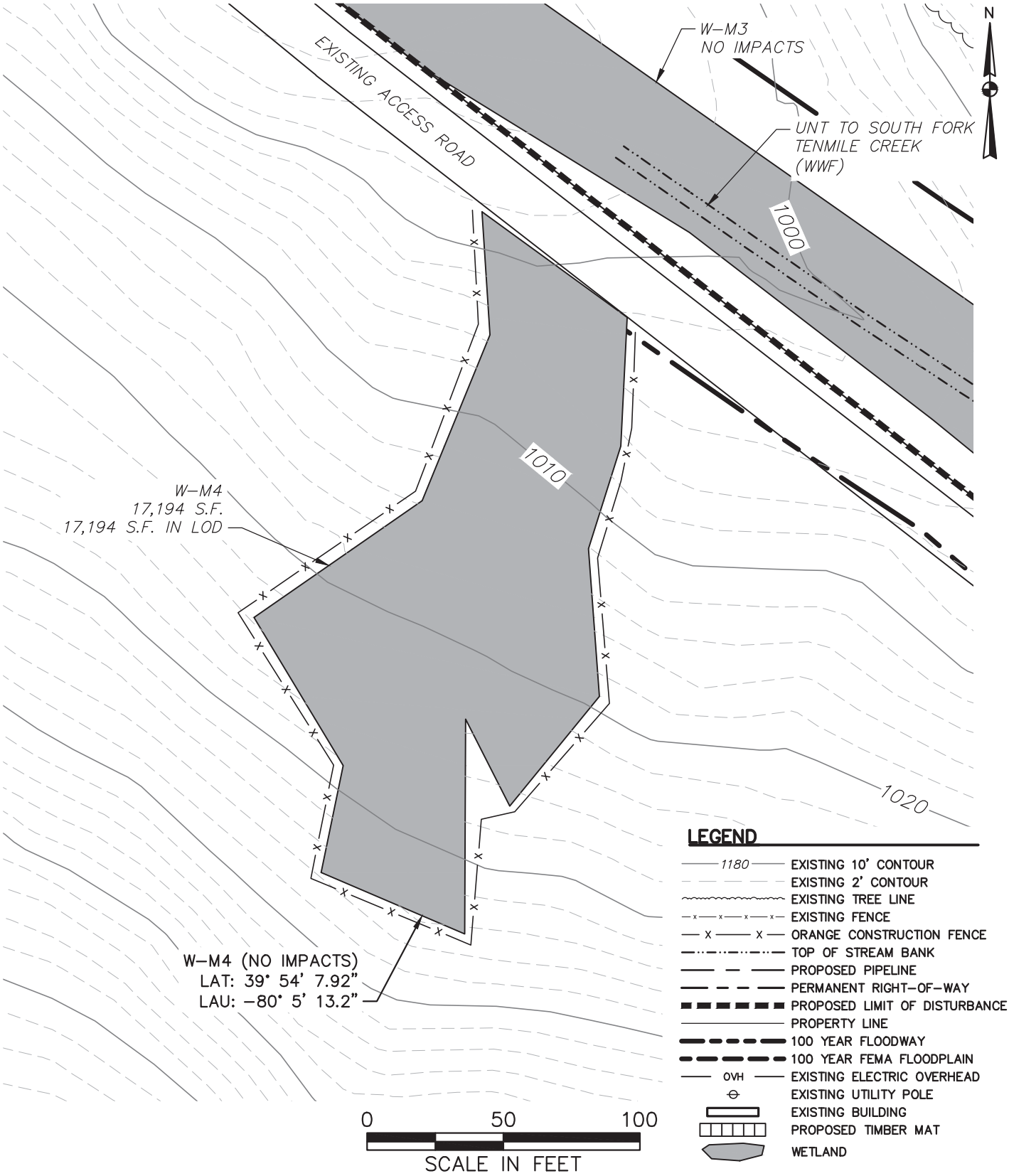
TETRA TECH
WWW.TETRATECH.COM
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921–7090 | F: (412) 921–4040

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP–8 FOR W–M6
PLAN

SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC–PB–00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 1

FIGURE 1



TETRA TECH
WWW.TETRATECH.COM
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT
H316 PIPELINE – GREENE COUNTY
GP-8 FOR W-M4
PLAN

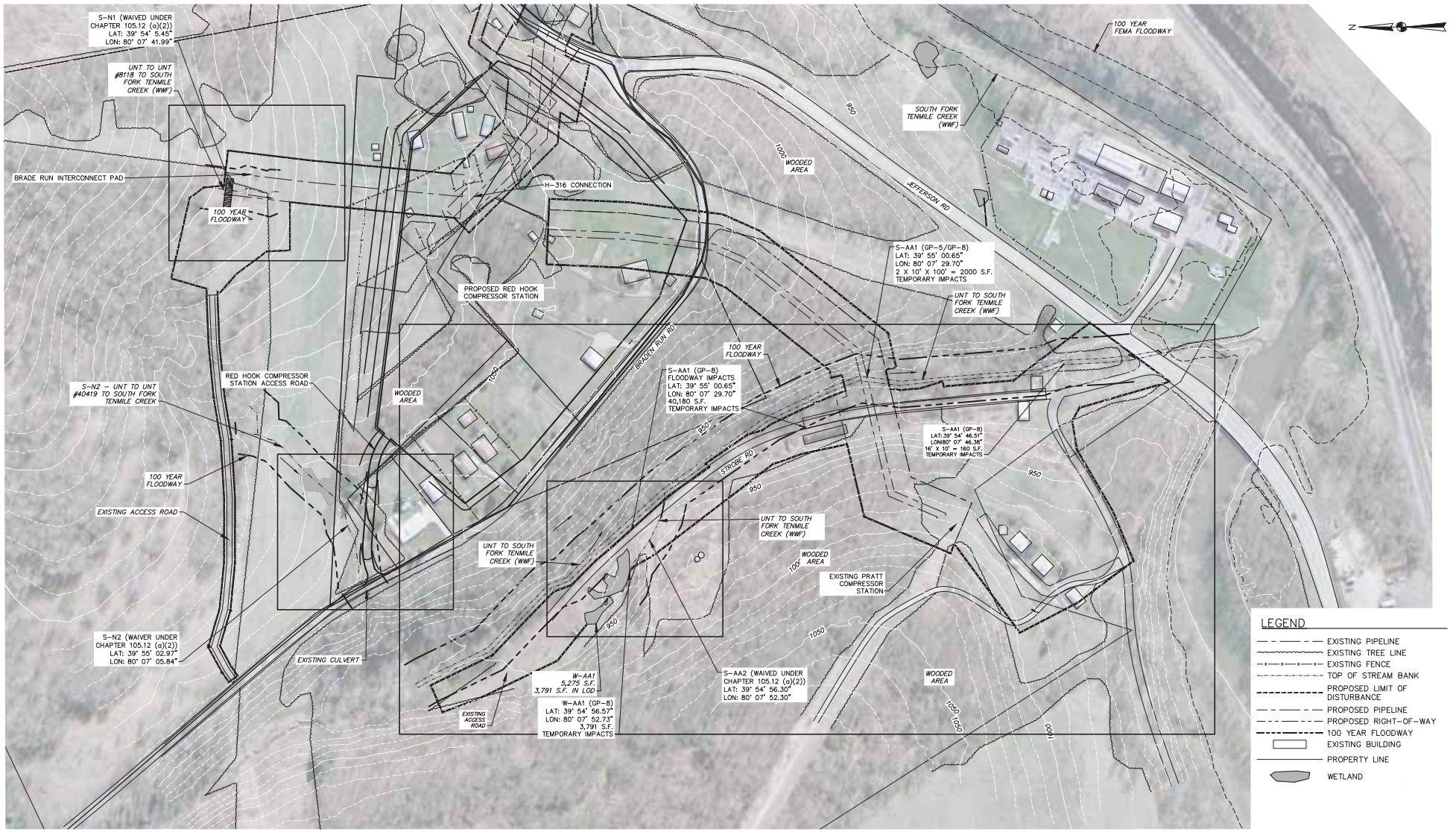
SCALE: 1" = 50'

DATE:	10/23/15
PROJECT NO.:	212IC-PB-00176
DESIGNED BY:	JS
DRAWN BY:	NN
CHECKED BY:	JS
SHEET:	1 OF 1

FIGURE 1

SECTION 10.0

SITE PLAN



TETRA TECH
www.tetratech.com
661 ANDERSEN DRIVE - FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

REVISIONS

NO.	BY	DATE	REMARKS

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT

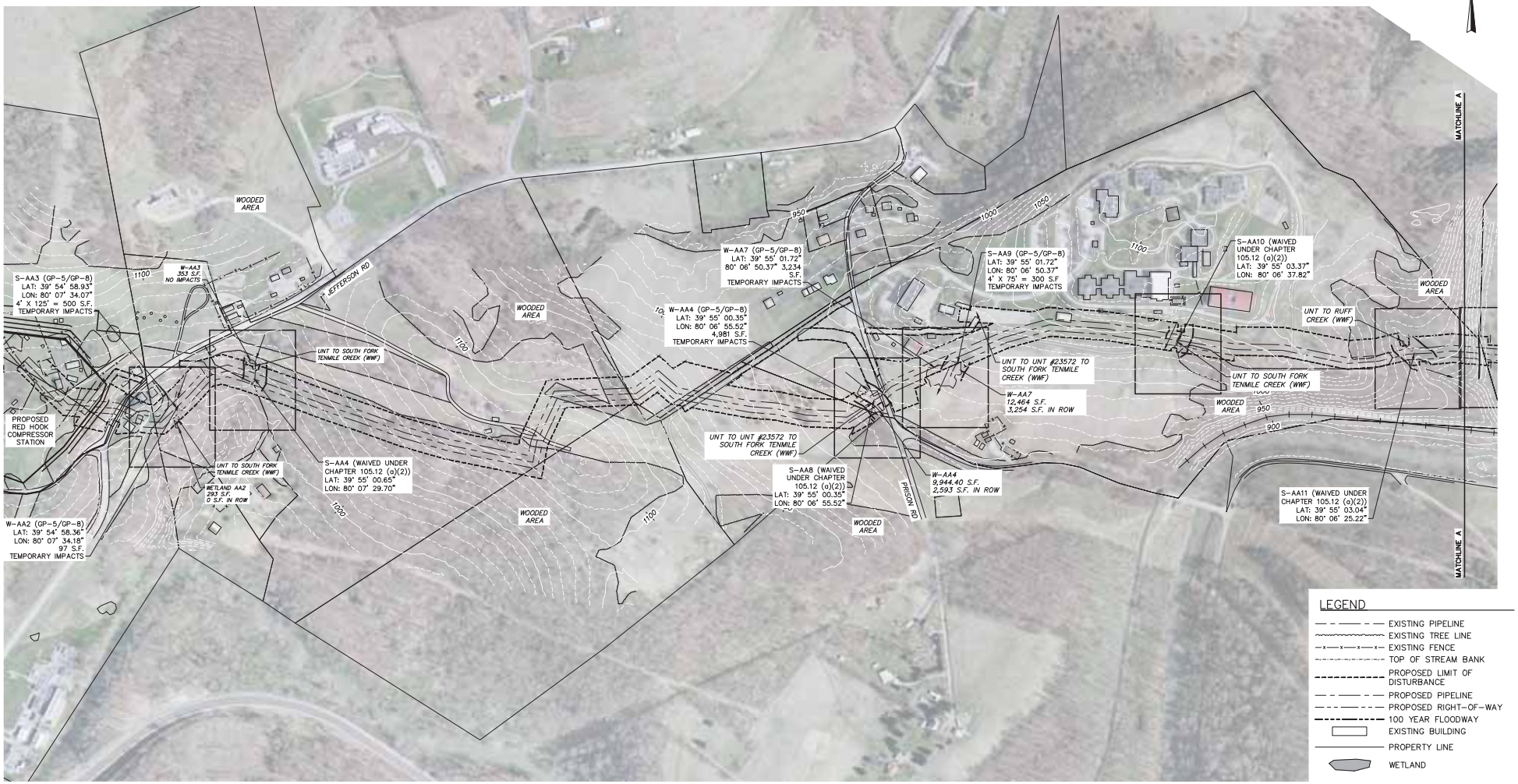
M-80 (6"), H-158 (12"), & H-305 (24") PIPELINES - GREENE COUNTY

SITE PLAN
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	PB-00179
DESIGNED BY:	DZ
DRAWN BY:	DZ
CHECKED BY:	HT

FIGURE 1
SHEET 1 OF 1

R:_212 - OGA\Dad\EQT\00176 - EEP\Figures\0017GF0008.dwg PIT DAN.ZINDREN 10/26/2015 3:40:52 PM



TETRA TECH
www.tetratech.com
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

REVISIONS			
NO.	BY	DATE	REMARKS

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT

H316 PIPELINE – GREENE COUNTY

1-30" PROPOSED WELDED STEEL NATURAL GAS PIPELINE

SITE PLAN

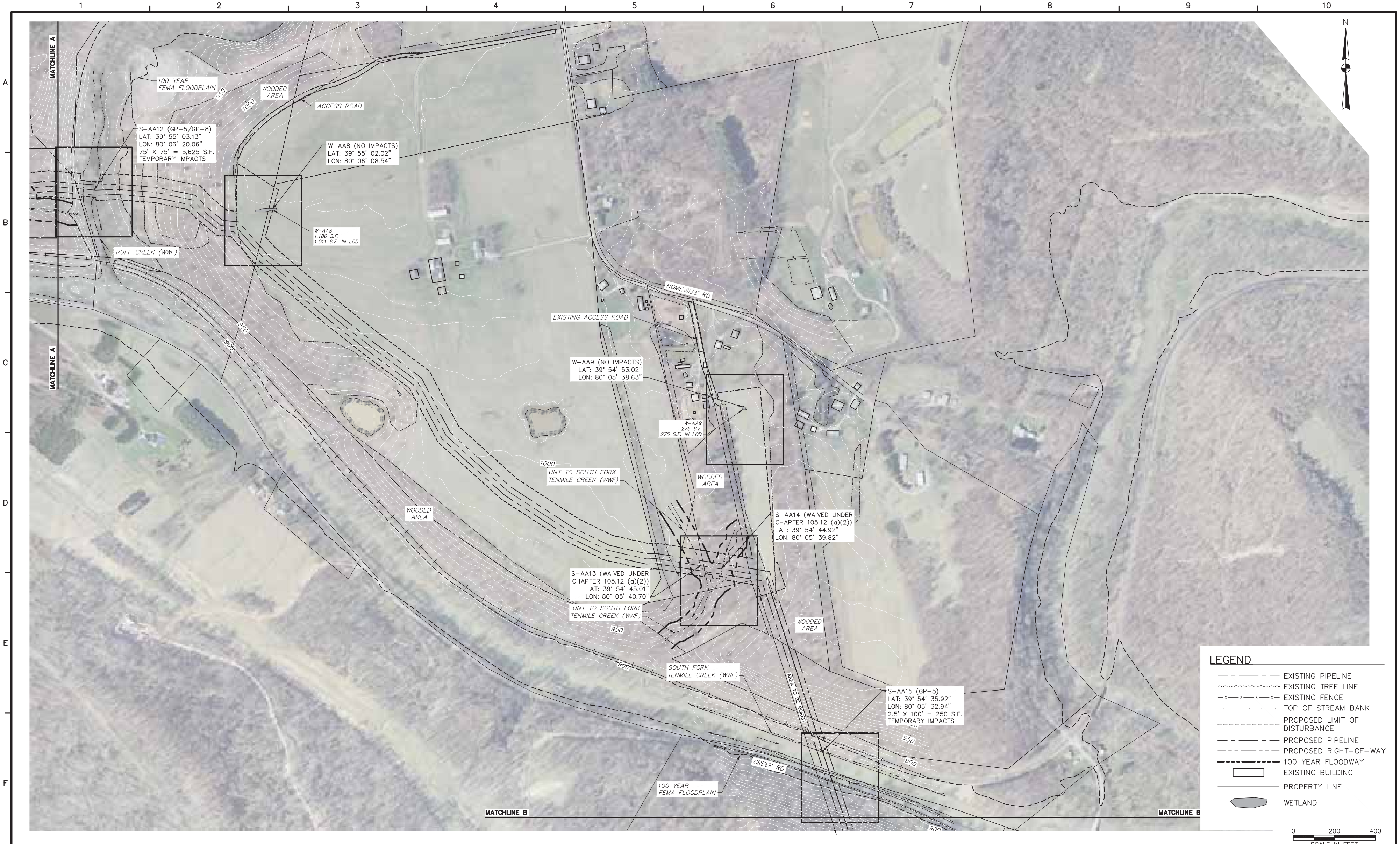
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	PB-00179
DESIGNED BY:	DZ
DRAWN BY:	DZ
CHECKED BY:	HT

FIGURE 1

SHEET 1 OF 3

n:_212 – eqe\O&G\EQT\00179 – eqe\Figures\00179FIG001.dwg PIT DAN.ZINDREN 10/26/2015 3:42:20 PM



TETRA TECH
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PITTSBURGH, PA 15220
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REVISIONS			
NO.	BY	DATE	REMARKS

EQUITRANS EXPANSION PROJECT

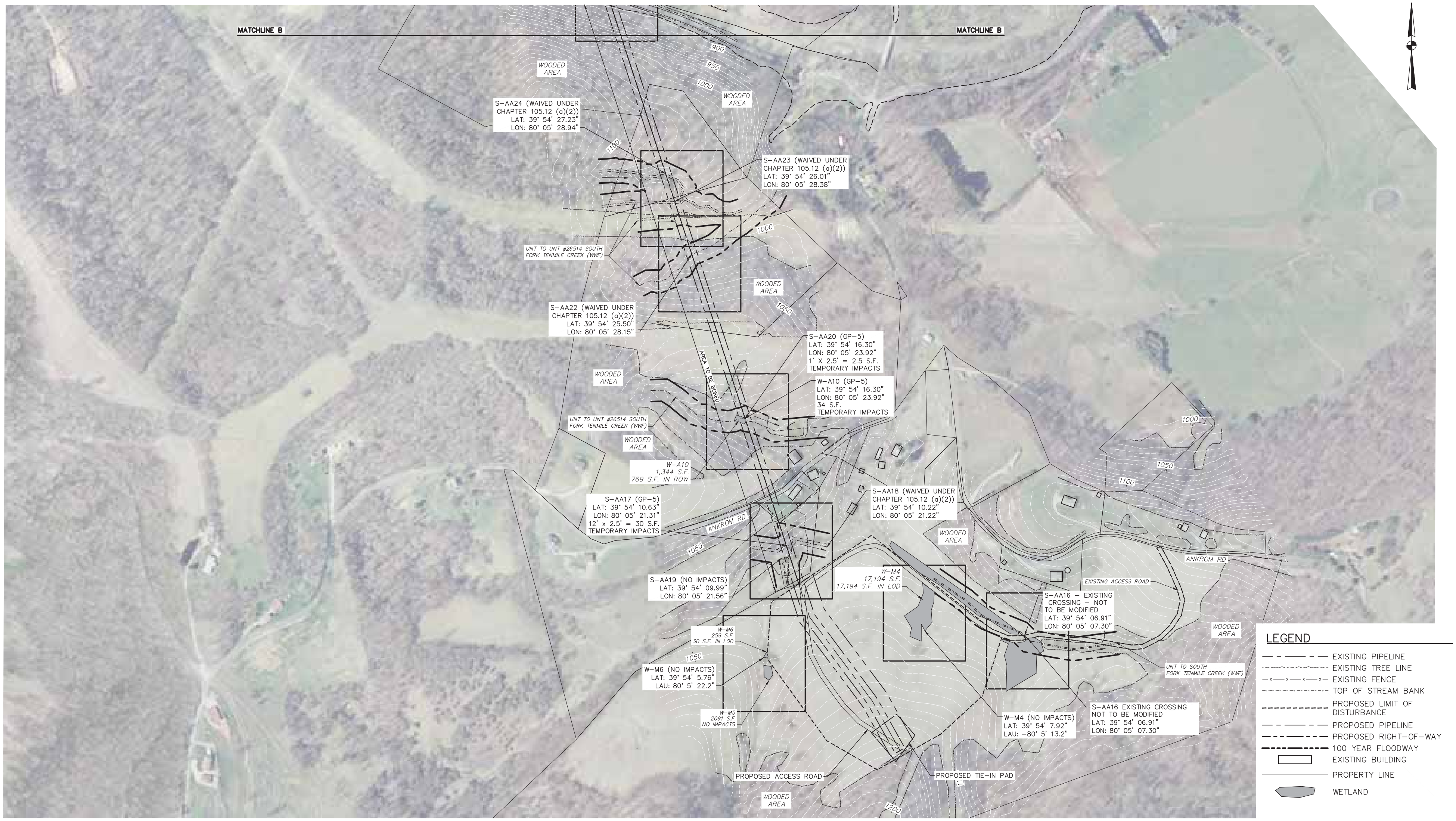
H316 PIPELINE – GREENE COUNTY

1-30" PROPOSED WELDED STEEL NATURAL GAS PIPELINE

SITE PLAN
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	PB-00179
DESIGNED BY:	DZ
DRAWN BY:	DZ
CHECKED BY:	HT

FIGURE 2
SHEET 2 OF 3



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PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

REVISIONS

NO.	BY	DATE	REMARKS

EQUITRANS, LP
EQUITRANS EXPANSION PROJECT

H316 PIPELINE - GREENE COUNTY

1-30" PROPOSED WELDED STEEL NATURAL GAS PIPELINE

SITE PLAN
SCALE: AS NOTED

DATE:	10/23/15
PROJECT NO.:	PB-00179
DESIGNED BY:	DZ
DRAWN BY:	DZ
CHECKED BY:	HT

FIGURE 3
SHEET 3 OF 3

SECTION 11.0

EROSION AND SEDIMENT CONTROL PLAN

SECTION 11.0 – E&S Plan

Refer to Section 9.0 for site-specific drawings and Best Management Practices. The limits of disturbance shown is the proposed limits of disturbance for the ESCGP-2 which will be submitted at a later date.

SECTION 12.0

WRITTEN DIRECTIONS TO THE PROJECT SITE

SECTION 12.0 - WRITTEN DIRECTIONS TO THE PROJECT SITE

1. From the PA DEP Southwest Regional Office, head south on Waterfront Drive.
2. Turn left to merge onto PA-28 South.
3. Take the Interstate 279 S/Interstate 376 W exit.
4. Merge onto I-279 S.
5. Take the exit onto I-376 W/Fort Pitt Bridge.
6. Take exit 64A to merge onto I-79 S toward Washington.
7. Take exit 14 for PA-21 W and merge toward Waynesburg.
8. Turn right onto Elm Dr/T796.
9. Turn right onto PA-188 E
10. After 1.9 miles, the proposed Redhook Compressor Station will be on the left. Project center coordinates: 39° 55' 00" N, 80° 07' 44" W.

SECTION 13.0

PENNSYLVANIA NATURAL DIVERSITY INVENTORY RECEIPT

ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.

4525 Este Avenue
Cincinnati, OH 45232
Phone: (513) 451-1777; Fax: (513) 451-3321

Pesi 639

24 June 2015

Dept. of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market St., PO Box 8552
Harrisburg, PA 17105

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning & Habitat Protection
2001 Elmerton Avenue
Harrisburg, PA 17110-9797

PA Fish and Boat Commission
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823

US Fish and Wildlife Service
Pennsylvania Field Office
110 Radnor Rd; Suite 101
State College, PA 16801

RE: Large Project PNDI – Equitrans Expansion Project

Dear Reviewer:

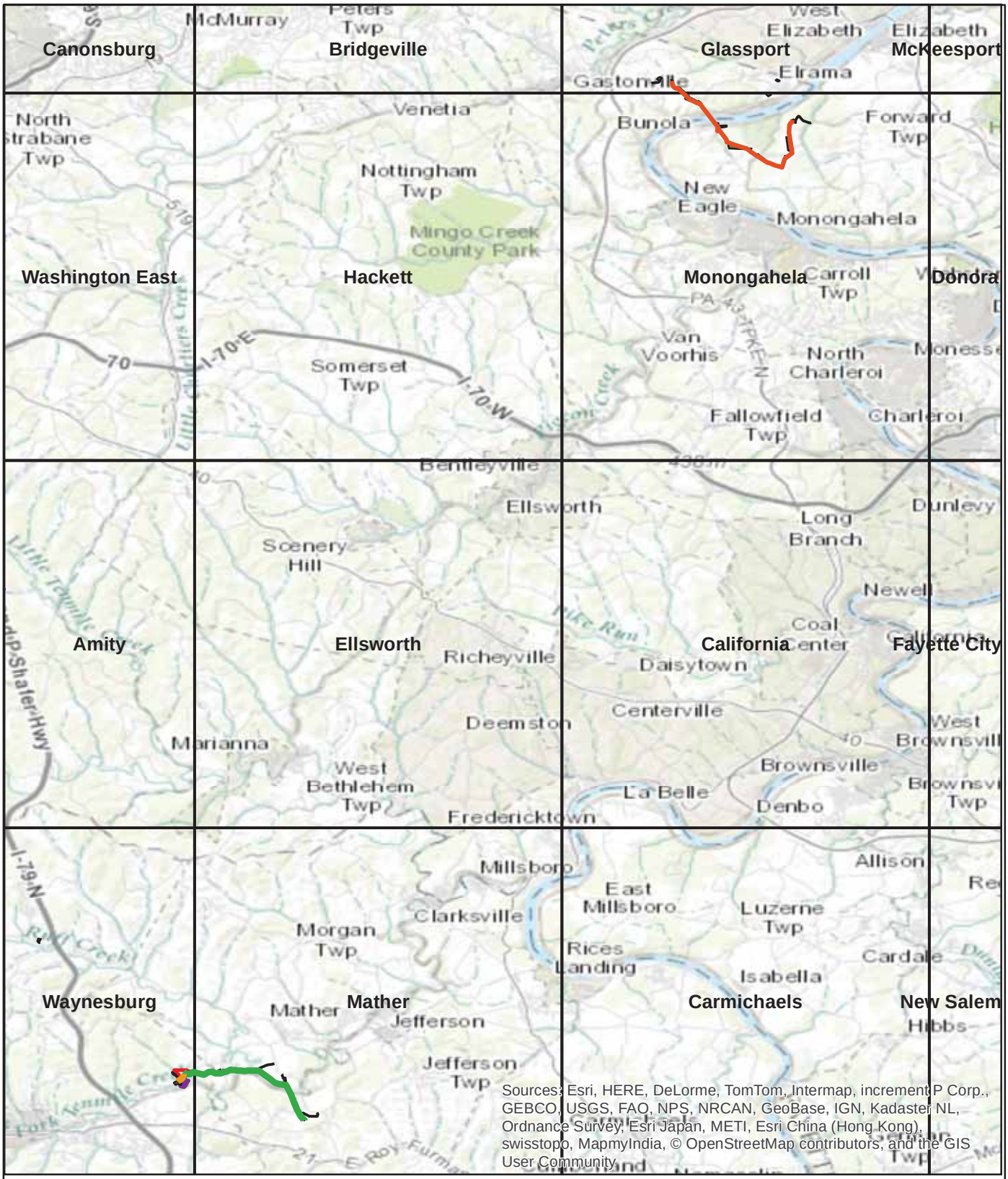
EQT proposes to develop the Equitrans Expansion Project (Project) in Allegheny, Washington, and Greene counties, Pennsylvania and Wetzel County, West Virginia. The Project will involve the construction of three individual pipeline segments totaling approximately 7.3 miles of new 24 to 30-inch-diameter natural gas transmission pipelines. In addition, EQT plans to replace an existing compressor station with a newer, larger compressor station, adding approximately 48,000 horsepower of centrifugal compression and 12,600 horsepower of reciprocating compression in Greene County, Pennsylvania. USGS 7.5 minute quadrangle maps illustrating the individual segments of this Project are included as Attachment 1. The completed PNDI Review Form is included as Attachment 2. Shapefiles of the Project are also included on the disc enclosed with this submission.

Though the Project was designed to parallel existing EQT Rights-of-Way whenever possible, review of aerial photography indicates that the current route crosses through farmland and forest of various ages. Based on desktop analysis, the Project crosses multiple streams and waterways, and thus will require permits from the U.S. Army Corps of Engineers. No surveys have been conducted for the Project, so no specific wetland data or site specific photographs are yet available. Land disturbance is estimated at approximately 213 acres. Approximately 50 acres of tree removal is expected.

Thank you for your review. I can be contacted at 513-451-1777 or dsparks@envsi.com.

Sincerely,

Dale W. Sparks, Ph.D.
Senior Project Manager



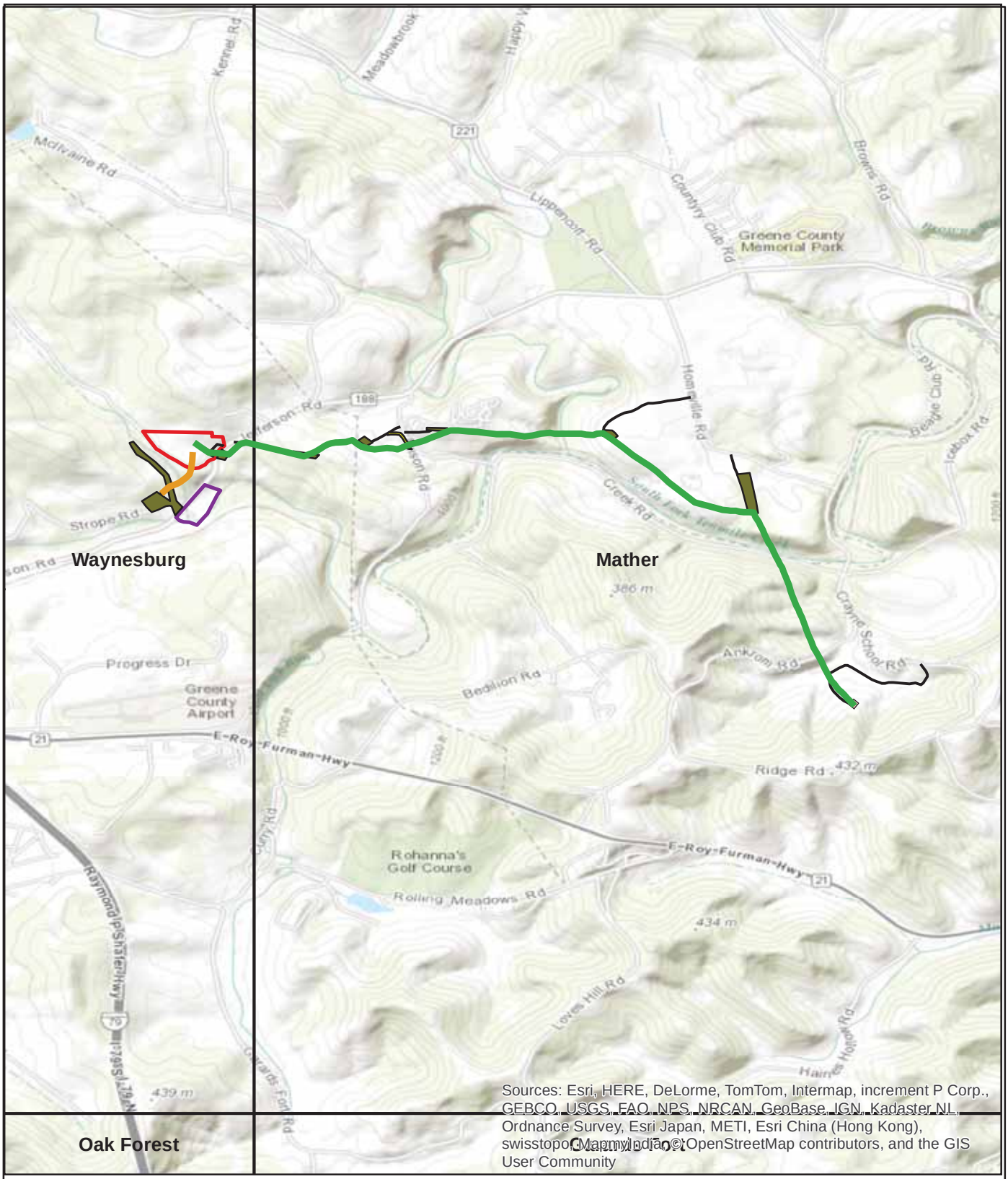
2

Figure 1. Location of Equitrans Expansion Project in Allegheny, Greene and Washington counties, Pennsylvania; USGS Quadrangles Mather, Waynesburg, Glassport and Monongahela.

Project No. 639

0 2.75 5.5 Mile

ESI ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.



H158-M80
H316
H316 Ground Bed
H316 Permanent Work Site
H316 Temporary Work Spaces
H316 Access Roads
Pratt Compressor Station
Redhook Compressor Station

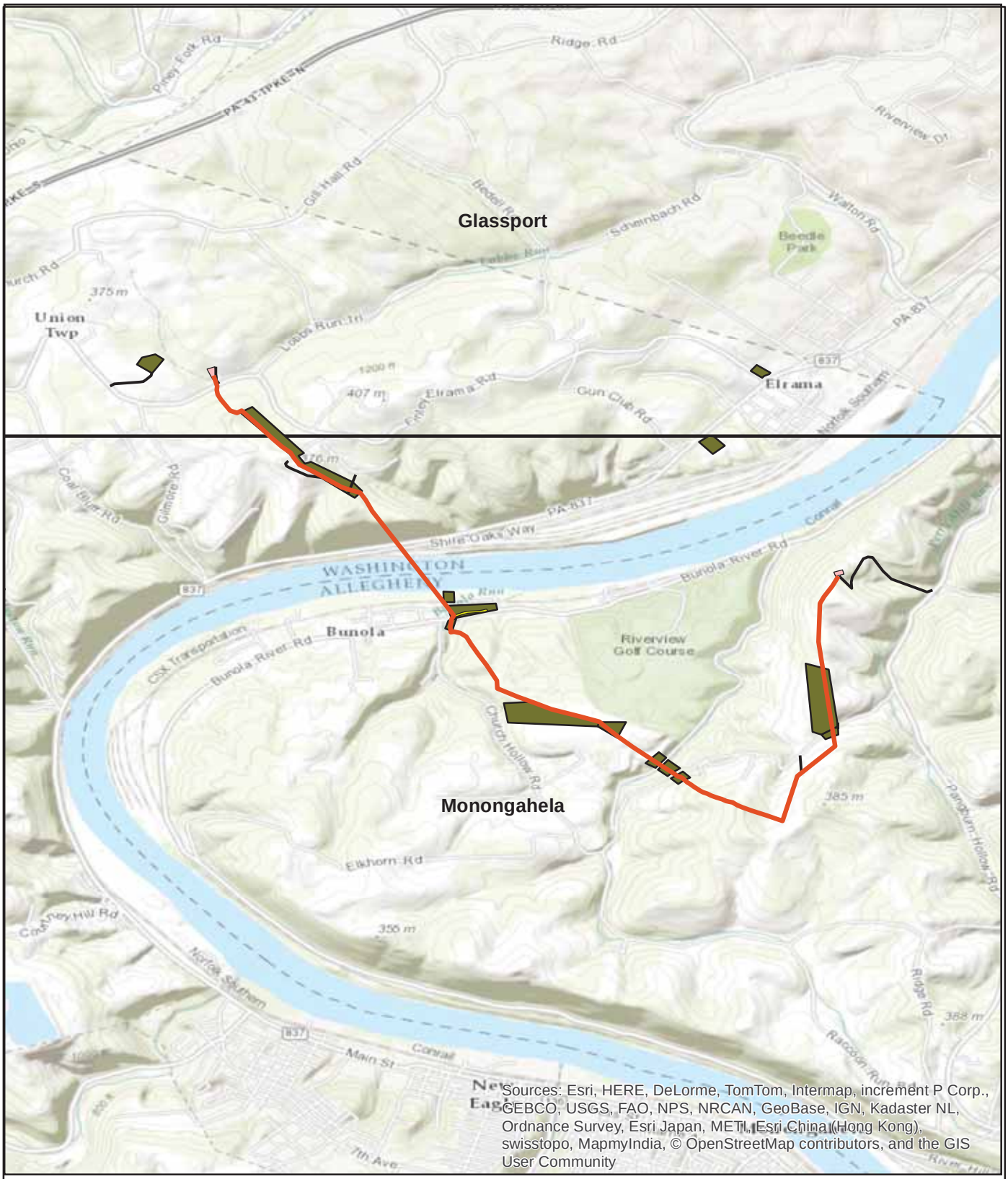
2

Figure 2. Location of Equitrans Expansion Project in Greene County, Pennsylvania; USGS Quadrangles Waynesburg and Mather.

Project No. 639

0 0.5 1 Mile

ESI ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.



H318
H318 Access Roads
H318 Ground Bed
H318 Permanent Work Site
H318 Temporary Work Spaces

2

Figure 3. Location of Equitrans Expansion Project in Allegheny and Washington counties, Pennsylvania; USGS Quadrangles Glassport and Monongahela.

Project No. 639

0 0.5 1 Mile

ESI ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.

Pennsylvania Natural Diversity Inventory
LARGE PROJECT FORM

How to Use the PNDI Large Project Form

If your Project is a "Large Project"— too large/long to search on the online system
Projects are considered "Large Projects" when the ENTIRE project is:

- Linear/Large Projects that exceed the PNDI online project size limits of 10 miles in length or 5165 acres
- Township-wide, Countywide or Statewide Projects. Examples: Act 537 Sewage Plans, Wind Farms, Roadway Improvements exceeding map limits above.

Due to system limitations and agency requirements, projects should not be submitted piecemeal. The entire project area including roads and infrastructure should be submitted as a single unit.

What to Send to Jurisdictional Agencies

Send the following information to all of the agencies listed on the Large Project Form.

Check-list of Minimum Materials to be submitted:
_X_Completed Large Project Form
_X_Supplemental project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
_X_USGS 7.5-minute Quadrangle with project boundary clearly indicated, and quad name on the map

The inclusion of the following information may expedite the review process.
_X_GIS shapefiles depicting the project extent
_X_A basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
___Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
___Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams

PNDI Large Project Form Definitions

***Applicant*:** Person that owns the property or is proposing the project or activity

Contact Person: Person to receive response if different than applicant (e.g. Consultant)

Project Name: Descriptive title of project (e.g. Twin Pines Subdivision, Miller Bridge Replacement)

***Proposed Activity*:** Include ALL earth disturbance activities for project (e.g. for a timber sale—include stream crossings, cutting areas and new roadway accesses). Also include Current Conditions (e.g. housing, farmland, current land cover), and how Construction/Maintenance Activity is to be accomplished

Total Acres of Property: Entire site acreage (e.g. timber sale property—including road access (200 acres)

Acreage to be Impacted: Disturbance acreage (e.g. timber sale—if the property is 200 acres, but only 100 acres will be disturbed, for example: cutting on 90 acres, a road impacting 10 acres); include all temporary and permanent activities

Pennsylvania Natural Diversity Inventory
LARGE PROJECT FORM

This form provides site information necessary to perform an Environmental Review for special concern species and resources listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, the Pennsylvania Fish and Boat Code or the Pennsylvania Game and Wildlife Code.

Applicant Information

Name: Stephanie Frazier - Eqt
Address: 625 Liberty Avenue, Suite 1700, Pittsburgh, Pa 15222
Phone Number: (412) 553-5798 Fax Number: (412) 395-2156

Contact Person Information - if different from applicant

Name: Environmental Solutions & Innovations, Inc.
Address: 4525 Este Ave., Cincinnati, Oh 45232
Phone Number: (513) 451-1777 Fax Number: (513) 451-3321
Email: dsparks@envsi.

Project Information

Project Name: Equitrans Expansion Project
Project Reference Point (center point of project): Latitude: 39 55 5.9 N Longitude: 80 7 12.6 W Datum:
Municipality: Franklin, Jefferson, Morgan, Forward, Union County: Allegheny, Washington, Greene
40 14 23.4 N 79 56 22.4 w
☐ Attach a copy of a U.S.G.S. 7 ½ Minute Quadrangle Map with Project Boundaries clearly marked.
U.S.G.S. Quad Name: Mather, Waynesburg, Glassport, Monongahela
Provide GIS shapefiles showing the project boundary (strongly recommended)

Project Description

Proposed Project Activity (including ALL earth disturbance areas and current conditions)

EQT proposes to develop the Equitrans Expansion Project (Project) in Allegheny, Washington, and Greene counties, Pennsylvania and Whetzel County, West Virginia. The Project will involve the construction of three individual pipeline segments totaling approximately 7.3 miles of new 24 to 30-inch-diameter natural gas transmission pipelines. In addition, EQT plans to replace an existing compressor station with a newer, larger compressor station, adding approximately 48,000 horsepower of centrifugal compression and 12,600 horsepower of reciprocating compression in Greene County, Pennsylvania.

Total Acres of Property: Approx 213 Acreage to be Impacted: Approx 213

1. Will the entire project occur in or on an existing building, parking lot, driveway, road, maintained road shoulder, street, runway, paved area, railroad bed, or maintained lawn? Yes ☐ No ☒
2. Are there any waterways or waterbodies (intermittent or perennial rivers, streams, creeks, tributaries, lakes or ponds) in or near the project area, or on the land parcel? If so, how many feet away is the project?
   Yes ☒ 0 Feet No ☐
3. Are wetlands located in or within 300 feet of the project area? Yes ☒ No ☐ If No, is this the result of a wetland delineation?
4. How many acres of tree removal, tree cutting or forest clearing will be necessary to implement all aspects of this project? Approx. 50 Acres

Dept. of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market St., PO Box 8552
Harrisburg, PA 17105
fax: 717-772-0271

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning & Habitat Protection
2001 Elmerton Avenue
Harrisburg, PA 17110-9797

PA Fish and Boat Commission
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823

US Fish and Wildlife Service
Pennsylvania Field Office
110 Radnor Rd; Suite 101
State College, PA 16801
no faxes please

Pennsylvania Fish & Boat Commission
established 1866

Division of Environmental Services
Natural Gas Section
450 Robinson Lane
Bellefonte, PA 16823

May 19, 2015

IN REPLY REFER TO
SIR# 44257

Equitrans
Stephanie Frazier
625 Liberty Avenue
Pittsburgh, Pennsylvania 15222

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
PNDI Search No.
Equitrans Expansion Project.
GREENE County: - WASHINGTON County:

Dear Stephanie Frazier:

This responds to your inquiry about a Pennsylvania Natural Diversity Inventory (PNDI) Internet Database search "potential conflict" or a threatened and endangered species impact review. These projects are screened for potential conflicts with rare, candidate, threatened or endangered species under Pennsylvania Fish & Boat Commission jurisdiction (fish, reptiles, amphibians, aquatic invertebrates only) using the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files. These species of special concern are listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, and the Pennsylvania Fish & Boat Code (Chapter 75), or the Wildlife Code.

Freshwater Mussels

Rare or protected freshwater mussel species are known from the vicinity of the project area in South Fork Tenmile Creek, Greene County:

Round Pigtoe (*Pleurobema sintoxia*, Rare)
Three-ridge (*Amblema plicata*, Rare)
Wabash Pigtoe (*Fusconaia flava*, Rare)

Freshwater mussels are the most imperiled taxonomic group in North America. Nearly 20% of the species historically known to occur in the Commonwealth are now extirpated (locally extinct). Additionally 60% of Pennsylvania's remaining species are of conservation concern. We are concerned about direct and indirect (i.e., runoff) effects that the proposed project may have on the species of concern. The freshwater mussel species known from the project area are especially vulnerable to physical (dredging, rip-rap, etc.) and chemical (pH, dissolved oxygen, temperature, heavy metals and organic

contaminants) changes to their aquatic environment. Therefore, **we recommend using directional boring** rather than open cutting for the South Fork Tenmile Creek crossing. Open cutting will most likely adversely impact the species of concern. Work should be conducted from the bank (e.g., no in-stream disturbance). Likewise, no erosion or sediment should be allowed to enter into the river (e.g., strict erosion and sedimentation control measures need to be employed).

Provided that directional boring methodology is used, in-stream work on South Fork Tenmile Creek is avoided, strict E&S control measures are maintained, and best management practices are employed, we do not foresee any significant adverse impacts from the proposed activity to the mussel species of special concern or any other rare or protected species under Pennsylvania Fish & Boat Commission jurisdiction **provided that the applicant implement the following contingencies to prevent impacts to water quality from drilling/boring operations:**

• Have a designated environmental inspector on site for the duration of the entire crossing operation

• Stop the bore/drill immediately if anyone on site observes an Inadvertent Return.

• Have a Vac Truck on site or on call (within three hours) to begin clean-up of the release in the stream channel to prevent downstream migration of drilling fluids

• Notify PFBC Bureau of Law Enforcement Regional Office within 24 hours http://fishandboat.com/dir_regions.htm (NC 814-359-5250; NE 570-477-5717; NW 814-337-0444; SW 814-445-8974)

Additionally, any release of sediment to the stream should be reason to initiate contact with the PFBC Bureau of Law Enforcement to address these issues. Any unauthorized disturbance, unpermitted discharge, or release of sediment(s) that is determined to be a pollution event (generally described http://www.fish.state.pa.us/fishpub/summary/reporting.html) per the Pennsylvania Fish and Boat Code will be subject to the appropriate legal enforcement action.

If, however, the work will necessitate any direct (e.g. equipment intrusion) or indirect impacts (e.g. runoff) to South Fork Tenmile Creek, then we request that a mussel survey and mussel relocation be conducted. The mussel survey would examine the proposed right-of-way (ROW) (direct impact area) as well as the indirect area. All live mussels encountered within the area of direct impact would be collected and relocated out of harm's way if the stream crossing is proposed to be open-cut. The mussel survey can be conducted by the PFBC or a qualified malacologist. Mussels are more readily detectible near the substrate surface during appropriate seasons (May 1 to October 15) and water temperatures (generally above 55 °F). In addition, a cursory mussel survey will require appropriate stream conditions, including normal flow and relatively clear water.

If you decide that you would like the PFBC to conduct the mussel survey, please schedule a field meeting with us so that we can complete an evaluation of mussel habitat quality as well as a mussel survey to determine presence/absence, location, and abundance of mussel species within or adjacent to the proposed project area.

Enclosed is a list of qualified malacologists and a PFBC approved mussel survey protocol if you prefer to arrange for a non-PFBC mussel survey. Prior to conducting a survey, the qualified malacologist should submit a proposed survey and relocation plan to this office. Upon completion of the mussel survey and relocation, please send a copy of the final report to this office for further evaluation. We look forward to receiving this information.

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not

necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Gary Smith at 814-279-3080 and refer to the SIR # 44257. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,

Heather A. Smiles, Chief
Natural Gas Section

HAS/GAS/dn

pennsylvania
DEPARTMENT OF CONSERVATION
AND NATURAL RESOURCES

BUREAU OF FORESTRY

July 22, 2015 **PNDI Number: 22453**

Dale Sparks
Environmental Solutions & Innovations, Inc.
4525 Este Avenue
Cincinnati, OH 45232
Email: dsparks@envsi.com (hard copy will not follow)

Re: Equitrans Expansion Project
Allegheny, Washington, and Greene Counties, PA

Dear Mr. Sparks,

Thank you for the submission of the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Large Project Number 22453 for review. PA Department of Conservation and Natural Resources screened this project for potential impacts to species and resources under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features only.

Potential Impact Anticipated

PNDI records indicate species or resources under DCNR's jurisdiction are located in the project vicinity. Based on a detailed PNDI review, DCNR determined potential impacts to the following threatened or endangered species or species of special concern.

Segment H318

Scientific Name	Common Name	PA Current Status	PA Proposed Status
Baptisia australis	Blue False-indigo	Not Listed	Threatened
Erythronium albidum	White Trout-lily	Not Listed	Rare
Iodanthus pinnatifidus	Purple Rocket	Endangered	Endangered
Scutellaria saxatilis	Rock Skullcap	Undetermined	Endangered
Trillium nivale	Snow Trillium	Rare	Rare

Segments H316/H158-M80

Scientific Name	Common Name	PA Current Status	PA Proposed Status
Erythronium albidum	White Trout-lily	Not Listed	Rare
Scutellaria saxatilis	Rock Skullcap	Undetermined	Endangered
Tipularia discolor	Cranefly Orchid	Rare	Rare
Trillium nivale	Snow Trillium	Rare	Rare

Survey Request
DCNR requests a survey for the following species:

- ***Baptisia australis* (Blue False-indigo):** locally documented on a rich wooded riverine slope; prefers open woods, stream banks, and sandy floodplains; flowers May – June
- ***Erythronium albidum* (White Trout-lily):** locally documented in floodplain forest and on rich wooded slopes along rivers and creeks; prefers moist woods and rich slopes, especially on limestone; flowers April – May

- ***Iodanthus pinnatifidus* (Purple Rocket):** locally documented on a rich wooded riverine slope; prefers moist alluvial woods and wooded slopes; flowers May – June
- ***Scutellaria saxatilis* (Rock Skullcap):** locally documented in sycamore scrub floodplain; prefers low woods, rocky stream banks, and roadsides; flowers July – August
- ***Tipularia discolor* (Cranefly Orchid):** locally documented in red oak mixed hardwood forest; prefers deciduous forest and stream banks; leaf visible fall, winter, and spring
- ***Trillium nivale* (Snow Trillium):** locally documented on rich stream valley wooded slopes; prefers stream valleys and wooded slopes, especially on limestone; flowers late March – April

✓ A survey for the above species should be conducted by a qualified botanist *at the appropriate time of year and then submitted to our office for review*. **Your botanist should carefully review the new DCNR Botanical Survey Protocols available at http://www.gis.dcnr.state.pa.us/hgis-er/Login.aspx. These protocols are recommended to ensure that the all necessary information is collected and that survey reports are prepared properly. It is the expectation of DCNR that these protocols will be followed when conducting surveys for species under our jurisdiction.**

✓ Your botanist should *fill out the field survey form while performing their survey:* http://www.gis.dcnr.state.pa.us/hgis-er/hgis/2012%20DCNR%20Field%20Survey%20Form.pdf. Contact our office prior to the survey for detailed information about the species, or for a list of qualified surveyors.

✓ Any target and non-target state-listed species found during the site visit should be reported to our office. Mitigation measures and monitoring may be requested if species or communities of special concern are found on or adjacent to site.

✓ If the land type(s) does not exist on site, a survey may not be necessary; please submit a habitat assessment report which describes the current land cover, habitat types, and species found on site.

This response represents the most up-to-date review of the PNDI data files and is valid for two (2) years only. If project plans change or more information on listed or proposed species becomes available, our determination may be reconsidered. Should the proposed work continue beyond the period covered by this letter, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative and accurate map). As a reminder, this finding applies to potential impacts under DCNR's jurisdiction only. Visit the PNHP website for directions on contacting the Commonwealth's other resource agencies for environmental review.

Should you have any questions or concerns, please contact Jason Ryndock, Ecological Information Specialist, by phone (717-705-2822) or via email (c-jryndock@pa.gov).

Sincerely

Greg Podniesinski, Section Chief
Natural Heritage Section

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
110 Radnor Road, Suite 101
State College, Pennsylvania 16801-4850

July 27, 2015

Stephanie Frazier
Equitrans, L.P.
625 Liberty Avenue
Suite 1700
Pittsburgh, PA 15222

RE: USFWS Project #2015-0578

Dear Ms. Frazier:

Thank you for your letter of April 27, 2015, regarding information about federally listed and proposed endangered and threatened species within the area affected by Equitrans, L.P., proposed Equitrans Expansion project located in Allegheny, Washington, and Greene counties, Pennsylvania, and Wetzel County, West Virginia. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of endangered and threatened species and the Migratory Bird Treaty Act (MBTA, 16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755, as amended) to ensure the protection of migratory bird species.

The proposed project consists of the replacement and expansion of compressor stations, installation of pipelines, and a new interconnect to deliver natural gas volumes into Mountain Valley Pipeline, LLC's proposed pipeline in West Virginia.

Federally Listed Species

The proposed project is located within the range of the Indiana bat (*Myotis sodalis*), a species that is federally listed as endangered and within the range of the federally threatened northern long-eared bat (*Myotis septentrionalis*). On May 4, 2015, the northern long-eared bat listing became effective; more information on the new listing of this species can be found at: http://www.fws.gov/midwest/endangered/mammals/nlba/index.html

Land-clearing associated with the project may result in the death or injury of roosting Indiana bats if tree-cutting is conducted during the time of year when bats may be present (*i.e.*, April 1 to September 30). Due to the potential for these bat species to occur within the project area, the Service recommends that measures be implemented to avoid killing or injuring them. This can be accomplished by carrying out tree-cutting activities from October 1 to March 31, during which time bats are hibernating or concentrated near their hibernacula. This seasonal restriction on tree cutting applies to trees that are greater than or equal to 3 inches in diameter at breast

height (d.b.h). Where possible, retain shagbark hickory trees, dead and dying trees, and large diameter trees (greater than 12 inches d.b.h.) to serve as roost trees for bats. Where possible, also retain forested riparian corridors and forested wetlands.

If you are unable to adopt the tree-cutting restrictions detailed above, a bat survey of the project area should be conducted between May 15 and August 15 by a qualified, Service-approved biologist (see enclosed list) using the 2015 RANGE-WIDE INDIANA BAT SUMMER SURVEY GUIDELINES April 2015, which can be found at the following link: http://www.fws.gov/northeast/pafo/surveys.html.
Survey results should be submitted to the Service for review and concurrence.

Please advise this office as to whether you intend to conduct bat surveys, or assume bats are present and implement a seasonal restriction on tree-cutting.

Assessment of Risks to Migratory Birds

The Service is the principal Federal agency charged with protecting and enhancing populations and habitat of migratory bird species. The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. While the MBTA has no provision for authorizing incidental take, the Service recognizes that some birds may be killed even if all reasonable measures to avoid take are implemented.

The potential exists for avian mortality from habitat destruction and alteration within the project boundaries. Site-specific factors that should be considered in project siting to avoid and minimize the risk to birds include avian abundance; the quality, quantity and type of habitat; geographic location; type and extent of bird use (*e.g.* breeding, foraging, migrating, etc.); and landscape features. Please review the enclosed information for general recommendations for avoiding and minimizing impacts to migratory birds within and around the project area. Please be aware that since these are general guidelines, some of them may not be applicable to the current project design or they may have already been included in the project design.

To avoid potential delays in reviewing your project, please use the above-referenced USFWS project tracking number in any future correspondence regarding this project.

If you have any questions regarding this matter, please contact Pamela Shellenberger of my staff at 814-234-4090.

Sincerely,

Lora L. Zimmerman
Field Office Supervisor

Enclosures
cc: USFWS – West Virginia Field Office

Division of Environmental
Planning and Habitat
Protection
717-783-5957

COMMONWEALTH OF PENNSYLVANIA
Pennsylvania Game Commission
2001 ELMERTON AVENUE
HARRISBURG, PA 17110-9797

"To manage all wild birds, mammals and their habitats for current and future generations."

ADMINISTRATIVE BUREAUS:

ADMINISTRATION.....717-787-5670
HUMAN RESOURCES.....717-787-7836
FISCAL MANAGEMENT.....717-787-7314
CONTRACTS AND PROCUREMENT.....717-787-6594
LICENSING.....717-787-2084
OFFICE SERVICES.....717-787-2116
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INFORMATION & EDUCATION.....717-787-6286
WILDLIFE PROTECTION.....717-783-6526
WILDLIFE HABITAT MANAGEMENT.....717-787-6818
REAL ESTATE DIVISION.....717-787-6568
AUTOMATED TECHNOLOGY SERVICES.....717-787-4076

www.pgc.state.pa.us

June 30, 2015 **PGC ID Number: 201505050202 Update**

Dale Sparks
Environmental Solutions & Innocations, Inc.
4525 Este Ave.
Cincinnati, OH 45232
dsparks@envsi.com

Re: EQT – Equitrans Expansion Project (*Update*)
Large Project PNDI Review
Greene, Allegheny & Washington Counties, PA

Dear Mr. Sparks,

Thank you for submitting your Pennsylvania Natural Diversity Inventory (PNDI) Large Project Environmental Review request. The Pennsylvania Game Commission (PGC) screened this project for potential impacts to species and resources of concern under PGC responsibility, which includes birds and mammals only.

No Impact Anticipated – PNDI Species

PNDI records indicate species or resources of concern are located in the vicinity of the project. However, based on the information you submitted concerning the nature of the project, the immediate location, and our detailed resource information, the PGC has determined that no impact is likely. Therefore, no further PNDI coordination with the PGC will be necessary for this project at this time.

This response represents the most up-to-date summary of the PNDI data files and is valid for two (2) years from the date of this letter. An absence of recorded information does not necessarily imply actual conditions on site. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered

Should the proposed work continue beyond the period covered by this letter, please resubmit the project to the PGC at the following address as an "Update" (including an updated PNDI receipt, project narrative and accurate map):

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning & Habitat Protection

2001 Elmerton Avenue
Harrisburg, PA 17110-9797

If the proposed work has not changed and no additional information concerning listed species is found, the project will be cleared for PNDI requirements by the PGC for an additional 2 years.

This finding applies to impacts to birds and mammals only. To complete your review of state and federally-listed threatened and endangered species and species of special concern, please be sure that the U.S. Fish and Wildlife Service, the PA Department of Conservation and Natural Resources, and/or the PA Fish and Boat Commission have been contacted regarding this project as directed by the online PNDI ER Tool found at www.naturalheritage.state.pa.us.

Please be sure to include the above-referenced PGC ID Number on any future correspondence with the PGC regarding this project.

Sincerely,

John Taucher
Division of Environmental Planning & Habitat Protection
Bureau of Wildlife Habitat Management
Phone: 717-787-4250, Extension 3632
Fax: 717-787-6957
E-mail:jotaucher@pa.gov

A PNHP Partner

JWT/jwt

cc: H:\OIL&GAS_PNDI_Reviews\Southwest Region

SECTION 14.0

REGISTRATION FOR A BOG TURTLE HABITAT SCREENING FORM

SECTION 14.0 - REGISTRATION FOR A BOG TURTLE HABITAT SCREENING FORM

No Bog Turtle Habitat Screening Form is required since the Project activities occur within Washington County.

SECTION 15.0

ACTIVITIES WHICH IMPACT WETLANDS

ATTACHMENT 15.1

WETLAND DELINEATION AND STREAM IDENTIFICATION DOCUMENTATION

Aquatic Resource Report for the Equitrans Expansion Pipeline Project Allegheny, Washington, and Greene Counties, Pennsylvania, and Wetzel County, West Virginia

Prepared By:

Tetra Tech, Inc.

For

Equitrans, LP

625 Liberty Avenue Suite 1700,

Pittsburgh, Pennsylvania

October 2015

TABLE OF CONTENTS

ACRONYMS

1987 Manual	USACE of Engineers Wetland Delineation Manual
USACE Regional Supplement	Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region
EQT Gathering	EQT Gathering, LLC
Equitrans	Equitrans, L.P.
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
GIS	Geographic Information Systems
GPS	Global Positioning System
MVP	Mountain Valley Pipeline
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OBL	Obligate
PEM	Palustrine Emergent
PFO	Palustrine Forested
ROW	Right-of-way
SF	Square Feet
UNT	Unnamed Tributary
UPL	Upland
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WWF	Warm Water Fishes

1.0 INTRODUCTION

This Aquatic Resource Report for the proposed Equitrans Expansion Project was prepared by Tetra Tech, Inc. on behalf of Equitrans, L.P. (Equitrans). Areas were investigated for the presence of wetlands on site using methodologies enumerated in the *United States Army Corps of Engineers (USACE) Wetland Delineation Manual* (Environmental Laboratory, 1987) (*1987 Manual*), as amended by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region*, April 2012 (*USACE Regional Supplement*).

The subject of this report is a proposed project involving multiple proposed natural gas pipeline right-of-ways (ROW), associated access roads, above ground facilities and workspaces located in Allegheny, Greene and Washington Counties, Pennsylvania. The purpose of this proposed project is to add capacity to bring natural gas from the central Appalachian Basin into the interstate pipeline grid or existing Equitrans markets.

1.1 Washington/Allegheny Counties, PA (H-318 pipeline)

The portion of the project in Allegheny and Washington Counties (the H-318 pipeline) will include the installation of 1, 20" natural gas transmission pipeline, approximately 4.6 miles long, within a 100'-wide construction ROW and a 50'-wide permanent ROW. This portion of the project also involves the installation of permanent aboveground facilities including the Applegate and Hartson Launcher/Receiver Facilities. The H-318 pipeline will move gas from the EQT Gathering, LLC (EQT Gathering) Applegate Gathering System, in Forward Township, Allegheny County, to Equitrans' existing H-148 pipeline, in Union Township, Washington County, for delivery south.

The proposed project area in Allegheny and Washington County would require crossing the Monongahela River. The Monongahela River and its associated UNTs are listed as Warm Water Fishes (WWF), as designated in Chapter 93 of Title 25 of the PA Code. The proposed project would also require crossing Lobbs Run, Bunola Run, Kelly Run and several UNTs to each. These water features and the associated UNTs are listed as Warm Water Fishes (WWF), as designated in Chapter 93 of Title 25 of the PA Code.

1.2 Greene County, PA (H-316, M-80, H-158, H-305, and the Redhook Compressor Station)

The portion of the project in Greene County will include the installation four pipelines and new above ground facilities. The H-316 natural gas pipeline will be a 30" natural gas transmission pipeline, approximately 2.9 miles long, within a 125'-wide construction ROW and 50'-wide

permanent ROW. The H-316 pipeline will move gas from the proposed Redhook Compressor Station to Equitrans' existing H-302 pipeline for delivery to Texas Eastern infrastructure, or south on Equitrans' existing H-302 pipeline to the Mountain Valley Pipeline (MVP). The proposed project in Greene County also involves the installation of three shorter pipelines: the M-80, the H-158, and the H-305 pipelines. Each of these proposed pipelines will be located within a 100'-wide construction ROW and a 50'-wide permanent ROW. The M-80 pipeline is an existing 6" pipeline to the Pratt Compressor Station that will be extended to move gas to the Redhook Compressor Station once it is commissioned. The H-158 pipeline is an existing 12" pipeline to the Pratt Compressor Station that will be extended to move gas to the Redhook Compressor Station once it is commissioned. The H-305 pipeline is a proposed 24" pipeline extension, approximately 540' in length, that will move gas from the Redhook Compressor Station to Equitrans' existing H-305 pipeline located at the existing Braden Run Interconnect with Texas Eastern. New above ground facilities for this portion of the project include the Redhook Compressor Station and the H-302 tie-in. The pipeline projects spans Jefferson and Morgan Townships, Greene County, PA.

The project area in Greene County would require crossing South Fork Tenmile Creek and several UNTs to it. The South Fork Tenmile Creek and its associated UNTs are listed as WWF, as designated in Chapter 93 of Title 25 of the PA Code. The proposed project would also require crossing Ruff Creek and several UNTs. These water features and the associated UNTs are listed as WWF, as designated in Chapter 93 of Title 25 of the PA Code.

1.3 Weztel County, WV (Webster Interconnect, Mobley Tap, and H-319)

In Wetzel County, West Virginia, the project involves the installation of the Webster Interconnect, Mobley Tap and the H-319 pipeline, a new 16-inch pipeline, approximately 200 feet in length that will connect the existing Equitrans H-306 pipeline to the proposed Webster Interconnect with MVP.

The project area in Wetzel County, West Virginia is located within the Mobley Run and North Fork Fishing Creek watersheds. UNT to North Fork Fishing Creek will be crossed by this project.

The content of this report presents the results of wetland delineation and stream identification activities completed for the pipeline ROW, associated access roads, above ground facilities and workspaces for the proposed project.

2.0 METHODOLOGY

USACE requires the use of the procedures enumerated in the *1987 Manual* (Environmental Laboratory, 1987) and the *USACE Regional Supplement* (Environmental Laboratory, 2012) for making jurisdictional determinations. According to the *1987 Manual*, an area is defined as a wetland if, under normal circumstances, it meets all three of the following criteria:

1. Predominance of hydrophytic vegetation (plants adapted for life in saturated soil conditions);
2. Hydric soils (soils formed under water, or in saturated conditions); and
3. Wetland hydrology (presence of inundated or saturated soils at some time during the growing season).

Wetlands identified in the field were classified in accordance with the U.S. Fish and Wildlife Service's (USFWS) *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979), *A Hydrogeomorphic Classification for Wetlands (*Brinson 1993) and USACE Waters Type. Dominant vegetation was identified and classified according to The National Wetland Plant List: 2014 Update of Wetland Ratings (Lichvar, 2014). Plant classifications are as follows:

- Obligate (OBL) - essentially always found in wetlands; estimated probability >99%
- Facultative Wetland (FACW) - usually found in wetlands; estimated probability 67%-99%
- Facultative (FAC) - equally likely to occur in wetlands and non-wetlands; estimated probability 34%-66%
- Facultative Upland (FACU) - usually occurs in non-wetlands; estimated probability 1%-33%
- Upland (UPL) - essentially always found in non-wetlands; estimated probability >99%

The field investigations for the proposed Project were performed during numerous field visits: June 9th 2015, July 8th - 12th 2015, and October 8th 2015. The study area was focused on the proposed pipeline corridor, proposed access roads, and specific areas identified for proposed workspaces, ancillary sites, and compressor stations. Study areas were investigated for the presence of potential wetlands and streams. The final study area is illustrated on the project mapping (Figures).

Preliminary site reconnaissance of the study area was conducted through a review of available Geographic Information Systems (GIS) resources. Existing information reviewed included the following:

- U.S. Geological Survey (USGS) topographic mapping (Figure 1-1 to 1-4)

- Natural Resources Conservation Service (NRCS) National Cooperative Soil Survey (Figure 2-1 to 2-4)
- USFWS National Wetland Inventory (NWI) Mapping (Figure 3-1 to 3-4)

Wetland delineation in the field involved of establishment of the wetland/upland margin with flagging hung at intervals that accurately depicted the outline of the boundary. The individual flags were then located using a Global Positioning System (GPS) receiver with sub-meter accuracy and later added to the project area mapping. Wetland flagging was limited to the bounds of the investigated study area and wetlands are shown as closed or partially closed systems on the detail map (Figure 4).

All wetlands and streams identified were given unique identification names (i.e. Wetland ID, Stream ID). For streams, the National Hydrography Dataset (NHD) mapped stream names (USGS 2015) are also provided in the results. For identified streams without a NHD name, the identified stream was given the name, “Unidentified Tributary (UNT)”, of the first named receiving waterbody.

Data concerning soils, hydrology, and vegetation were collected and recorded on USACE Wetland Determination Data Forms at wetlands and at upland point locations associated with each wetland. USACE Wetland Determination Forms and stream data sheets detailing stream characteristics are provided in Appendix A. Photographs depicting wetland topography and vegetation are included in Appendix B. Appendix C contains photographs of streams identified within the study area. Appendix D provides a list of hydric soils known to occur within the counties of the study area. Resumes of Project field personnel, summarizing professional experience, qualifications, and education, are included in Appendix E.

3.0 RESULTS

Thirty-three areas within the Equitrans Expansion Project study area met the wetland criteria outlined in the *1987 Manual*, as amended by the *USACE Regional Supplement*. Additionally, 37 streams were identified within the evaluated study area. A narrative summary of field data collected within the study area for this Project is presented below. The detail maps (Figure 4-1 to 4-22) illustrate the wetland and watercourse locations in relation to the proposed ROW.

3.1 Wetland Identification and Delineation

This section is a summary of the wetland delineation for the individual projects within the Equitrans Expansion Project. USACE wetland determination data forms detailing the existing vegetation, soil characteristics, and hydrology were prepared for each wetland and its associated upland point (Appendix A).

3.1.1 Washington/Allegheny Counties (H-318 pipeline)

Based on field evidence and best professional judgment, it was determined that 13 wetlands were present within the study area. These areas demonstrated the presence of all three wetland parameters required by the *1987 Manual* and the *USACE Regional Supplement*.

A review of the NRCS Soil Survey and hydric soil list indicated that seven soils mapped within the Allegheny and Washington county study area are classified as hydric or as containing hydric components (Figure 2-1 to 2-4): Cavode silt loam, 2 to 8 percent slopes (CaB), Cavode silt loam, 8 to 15 percent slopes (CaC), Fluvaquents, loamy (Fa), Glenford silt loam 3 to 8 percent slopes (GdB), Udorthents, smoothed gently sloping (UdB), Udorthents, smoothed, moderately steep (UdD), and Urban land-Rainsboro complex, gently sloping (URB).

No NWI wetlands are mapped within the study area (Figure 3-1 to 3-4).

Wetland BB1

Wetland BB1 (W-BB1) is a palustrine emergent (PEM) wetland 867-square foot (SF) in size located in the northwestern portion of the study area (Figure 4-1). Indicators of wetland hydrology include surface water, algal mat or crust, and crayfish burrows. Dominant vegetation consisted of curly dock (*Rumex crispus*), Pennsylvania smartweed (*Polygonum pensylvanicum*), and Kentucky blue grass (*Poa pratensis*). The soil between 0-14 inches exhibited a low-chroma matrix color (2.5Y 3/2) with a clay loam texture. The soil between 14-18 inches exhibited a low-chroma matrix color (10YR 4/2) with a clay loam texture.

Wetland BB3

Wetland BB3 (W-BB3) is a PEM wetland 2,993-SF in size located in the northwestern portion of the study area (Figure 4-2). Indicators of wetland hydrology include surface water, saturation, hydrogen sulfide odor, crayfish burrows, geomorphic position, and FAC neutral test. Dominant vegetation consisted of common fox sedge (*Carex vulpinoidea*), dark-green bulrush (*Scirpus atrovirens*), short-awn meadow-foxtail grass (*Alopecurus aequalis*), and spreading bent grass (*Agrostis stolonifera*). The soil between 0-12 inches exhibited a low-chroma matrix color (7.5Y 3/2) with a clay loam texture. The soil between 12-18 inches exhibited a low-chroma matrix color (10YR 3/2) with a clay loam texture.

Wetland BB2

Wetland BB2 (W-BB2) is a PEM wetland 5,961-SF in size located in the northwestern portion of the study area (Figure 4-2). Indicators of wetland hydrology include surface water, a high water table, saturation, hydrogen sulfide odor, drainage patterns, geomorphic position, and FAC neutral test. Dominant vegetation consisted of curly dock, common fox sedge, and dark-green bulrush. The soil between 0-1 inches exhibited a low-chroma matrix color (2.5Y 3/1) with a muck texture. The soil between 1-5 inches exhibited a low-chroma matrix color (2.5Y 3/1) with a clay loam texture.

Wetland BB13

Wetland BB13 (W-BB13) is a palustrine forested (PFO) wetland 11,621-SF in size located in the central portion of the study area (Figure 4-4). Indicators of wetland hydrology include surface water, saturation, water stained leaves, aquatic fauna, crayfish burrows, and geomorphic position. Dominant vegetation consisted of ashleaf maple (*Acer negundo*), red maple (*Acer rubrum*), Chinese privet (*Ligustrum sinense*), Canadian clearweed (*Pilea pumila*), may-apple (*Podophyllum peltatum*), stinging nettle (*Urtica dioica*), Japanese stilt grass (*Microstegium vimineum*), pale touch-me-not (*Impatiens pallida*), and poision ivy (*Toxicodenron radicans*). The soil between 0-3 inches exhibited a low-chroma matrix color (10YR 3/2) with a clay loam texture. The soil between 3-16 inches exhibited a low-chroma matrix color (10YR 3/1) with a clay loam texture.

Wetland BB11

Wetland BB11 (W-BB11) is a PFO wetland 2,493-SF in size located in the central portion of the study area (Figure 4-4). Indicators of wetland hydrology include water marks and water stained leaves. Dominant vegetation consisted of red maple, American beech (*Fagus grandifolia*), an unidentified honeysuckle species (*Lonicera* sp.), and Canadian clearweed. The soil between 0-1 inches exhibited a low-chroma matrix color (10YR 3/1) with a clay loam muck texture. The soil between 1-18 inches exhibited a 10YR 4/3 matrix color with a clay loam texture.

Wetland BB10

Wetland BB10 (W-BB10) is a PFO wetland 1,016-SF in size located in the central portion of the study area (Figure 4-4). Indicators of wetland hydrology include surface water, water marks, water stained leaves, and crayfish burrows. Dominant vegetation consisted of red maple, American beech, an unidentified honeysuckle species, Japanese stilt grass, Canadian clearweed, deer-tongue rosette grass (*Dichanthelium clandestinum*), and Pennsylvania blackberry (*Rubus pensilvanicus*). The soil between 0-6 inches exhibited a low-chroma matrix color (10YR 3/2) with a clay loam texture that contained redoximorphic features (7.5YR 4/6). The soil between 6-18 inches exhibited a 10YR 5/4 matrix color with a clay loam texture.

Wetland BB9

Wetland BB9 (W-BB9) is a PFO wetland 709-SF in size located in the central portion of the study area (Figure 4-5). Indicators of wetland hydrology include surface water, water marks, water stained leaves, aquatic fauna, crayfish burrows, and microtopographic relief. Dominant vegetation consisted of red maple, American beech, an unidentified honeysuckle species, may-apple (*Podophyllum peltatum*), sensitive fern (*Onoclea sensibilis*), and Japanese stilt grass. The soil between 0-9 inches exhibited a low-chroma matrix color (10YR 4/1) with a clay loam texture that contained redoximorphic features (7.5YR 4/6). The soil between 8-18 inches exhibited a 10YR 5/6 matrix color with a loamy clay texture.

Wetland BB8

Wetland BB8 (W-BB8) is a PFO wetland 1,619-SF in size located in the central portion of the study area (Figure 4-5). Indicators of wetland hydrology include water stained leaves, hydrogen sulfide odor, and FAC neutral test. Dominant vegetation consisted of red maple, an unidentified honeysuckle species, Canadian clearweed, and Pennsylvania blackberry. The soil between 0-8 inches exhibited a low-chroma matrix color (10YR 4/2) with a clay loam texture. The soil between 8-16 inches exhibited a 10YR 5/6 matrix color with a clay loam texture.

Wetland BB7

Wetland BB7 (W-BB7) is a PEM wetland 94,073-SF in size located in the central portion of the study area (Figure 4-5). Indicators of wetland hydrology include surface water, saturation, hydrogen sulfide odor, crayfish burrows, microtopographic relief, and FAC neutral test. Dominant vegetation consisted of spreading bent (*Agrostis stolonifera*), stalk-grain sedge (*Carex stipata*), lesser poverty rush (*Juncus tenuis*), poision ivy, and Pennsylvania blackberry. The soil between 0-6 inches exhibited a 10YR 4/3 matrix color with a clay loam texture. The soil between 6-18 inches exhibited a 10YR 5/4 matrix color with a loamy clay texture that contained redoximorphic features (2.5YR 4/6).

Wetland BB6

Wetland BB6 (W-BB6) is a PEM wetland 4,031-SF in size located in the central portion of the study area (Figure 4-6). Indicators of wetland hydrology include surface water, saturation, algal mat or crust, hydrogen sulfide odor, crayfish burrows, microtopographic relief, and FAC neutral test. Dominant vegetation consisted of spreading bent and poision ivy. The soil between 0-5 inches exhibited a 10YR 4/3 matrix color with a clay loam texture. The soil between 5-20 inches exhibited a low-chroma matrix color (10YR 4/2) with a loamy clay texture that contained redoximorphic features (2.5YR 4/6).

Wetland BB12

Wetland BB12 (W-BB12) is a PEM wetland 250-SF in size located in the central portion of the study area (Figure 4-7). Indicators of wetland hydrology include surface water, algal mat or crust, and sparsely vegetated concave surface, and crayfish burrows. Dominant vegetation consisted of dark-green bulrush. The soil between 0-6 inches exhibited a low-chroma matrix color (2.5Y 4/2) with a clay loam texture that contained redoximorphic features (7.5YR 5/4). The soil between 6-12 inches exhibited a low-chroma matrix color (2.5Y 4/1) with a loamy clay texture that contained redoximorphic features (7.5YR 5/4). The soil between 12-18 inches exhibited a low-chroma matrix color (2.5Y 4/2) with a loamy clay texture.

Wetland BB5

Wetland BB5 (W-BB5) is a PEM wetland 24,440-SF in size located in the northern portion of the study area (Figure 4-11). Indicators of wetland hydrology include surface water, water stained leaves, crayfish burrows, microtopographic relief, and FAC neutral test. Dominant vegetation consisted of dark-green bulrush, lesser poverty rush, and deer-tongue rosette grass. The soil between 0-6 inches exhibited low-chroma (2.5Y 4/2) and gleyed (Gley 4/10Y) matrix colors with a clay loam texture. The soil between 6-12 inches exhibited a 2.5Y 5/4 matrix color with a clay loam texture.

Wetland BB4

Wetland BB4 (W-BB4) is a PEM wetland 1,725-SF in size located in the northern portion of the study area (Figure 4-11). Indicators of wetland hydrology include surface water, aquatic fauna, crayfish burrows, and FAC neutral test. Dominant vegetation consisted of stalk-grain sedge and lesser poverty rush. The soil between 0-5 inches exhibited a low-chroma matrix color (10YR 3/2) with a clay loam texture that contained redoximorphic features (7.5YR 4/6). The soil between 5-18 inches exhibited a 10YR 4/3 matrix color with a clay loam texture.

3.1.2 Greene County (H-316, M-80, H-158, H-305, and the Redhook Compressor Station)

Based on field evidence and best professional judgment, it was determined that 17 wetlands were present within the study area. These areas demonstrated the presence of all three wetland parameters required by the *1987 Manual* and the *USACE Regional Supplement*. The vegetative community was dominated by hydrophytic plant species, the soils exhibited hydric characteristics, and the area contained wetland hydrology indicators.

A review of the NRCS Soil Survey and hydric soil list indicated that six soils mapped within the Green County study area are classified as hydric or as containing hydric components these are Dumps, mines (Du), Fluvaquents, loamy (Fa), Glenford silt loam, 3 to 8 percent slopes (GdB), Newark silt loam (Nw), Udorthents, smoothed gently sloping (UdB), and Udorthents, smoothed, moderately steep (UdD) (Figure 2-1).

Three NWI wetlands are mapped within the study area (Figure 3).

Wetland N1

Wetland N1 (W-N1) is a PEM wetland 3,401-SF in size located in the western portion of the study area (Figure 4-12). Indicators of wetland hydrology includes saturation and geomorphic position. Dominant vegetation consisted of lamp rush (*Juncus effusus*). The soil between 0-17 inches exhibited a low-chroma matrix color (10YR 5/2) with a sandy clay texture that contained redoximorphic features (10YR 6/8, 10YR 6/1).

Wetland AA1

Wetland AA1 (W-AA1) is a PEM wetland 5,275-SF in size located in the western portion of the study area (Figure 4-12). Indicators of wetland hydrology include a high water table, saturation, geomorphic position, microtopographic relief, and FAC neutral test. Dominant vegetation consisted of American sycamore (*Platanus occidentalis*), common fox sedge, and American hog peanut (*Amphicarpaea bracteata*). The soil between 0-3 inches exhibited a low-chroma matrix color (10YR 4/2) with a silty clay loam texture. The soil between 3-10 inches exhibited low-chroma matrix colors (10YR 5/1, 10YR 4/2) with a silty clay loam texture that contained redoximorphic features (10YR 3/6). The soil between 10-20 inches exhibited a 10YR 5/6 matrix color with a silty clay loam texture.

Wetland AA5

Wetland AA5 (W-AA5) is a PEM wetland 855-SF in size located in the central portion of the study area (Figure 4-12). Indicators of wetland hydrology include a high water table and geomorphic position. Dominant vegetation consisted of an unidentified grass species (*Poa* sp.). The soil

between 0-17 inches exhibited low-chroma matrix colors (2.5YR 5/1, 7.5YR 3/1) with a silty clay texture that contained redoximorphic features (10YR 5/6).

Wetland AA6

Wetland AA6 (W-AA6) is a PEM wetland 3,083-SF in size located in the western portion of the study area (Figure 4-12). Indicators of wetland hydrology include a high water table, saturation, oxidized rhizospheres on living roots, geomorphic position and FAC neutral test. Dominant vegetation consisted of reed canary grass (*Phalaris arundinacea*), and narrow-leaf cattail (*Typha angustifolia*). The soil between 0-19 inches exhibited a low-chroma matrix color (10YR 5/2) with a silty clay loam texture that contained redoximorphic features (10YR 3/6).

Wetland AA2

Wetland AA2 (W-AA2) is a PEM wetland 293-SF in size located in the western portion of the study area (Figure 4-12). Indicators of wetland hydrology include surface water, a high water table, saturation, geomorphic position, and FAC neutral test. Dominant vegetation consisted of green ash (*Fraxinus pennsylvanica*) and shallow sedge (*Carex lurida*). The soil between 0-9 inches exhibited a low-chroma matrix color (10YR 4/1) with a silty clay texture. The soil between 9-19 inches exhibited a low-chroma matrix color (10YR 4/1) with a silty clay texture that contained redoximorphic features (10YR 5/6).

Wetland AA3

Wetland AA3 (W-AA3) is a PEM wetland 353-SF in size located in the western portion of the study area (Figure 4-13). Indicators of wetland hydrology include surface water and a high water table. Dominant vegetation consisted of rough-stalk blue grass (*Poa trivialis*) and narrow-leaf cat-tail. The soil between 0-16 inches exhibited a low-chroma matrix color (10YR 6/1) with a silty clay loam texture that contained redoximorphic features (10YR 5/3, 10YR 4/6).

Wetland AA4

Wetland AA4 (W-AA4) is a PEM wetland 9,655-SF in size located in the central portion of the study area (Figure 4-14). Indicators of wetland hydrology include surface water, high water table, hydrogen sulfide odor, oxidized rhizospheres on living roots, geomorphic position, and FAC neutral test. Dominant vegetation consisted of shallow sedge and common fox sedge. The soil between 0-3 inches exhibited a low-chroma matrix color (10YR 5/1) with a silty clay loam texture. The soil between 3-19 inches exhibited a low-chroma matrix color (10YR 5/1) with a silty clay loam texture that contained redoximorphic features (10YR 3/6).

Wetland AA7

Wetland AA7 (W-AA7) is a PEM wetland 12,464-SF in size located in the central portion of the study area (Figure 4-14). Indicators of wetland hydrology include surface water, a high water table, hydrogen sulfide odor, oxidized rhizospheres on living roots, and FAC neutral test. Dominant vegetation consisted of common fox sedge and fowl blue grass (*Poa palustris*). The soil between 0-19 inches exhibited a low-chroma matrix color (10YR 3/1, 10YR 5/1) with a silty clay texture that contained redoximorphic features (10YR 5/8).

Wetland AA8

Wetland AA8 (W-AA8) is a PEM wetland 1,186-SF in size located in the central portion of the study area (Figure 4-15). Indicators of wetland hydrology include a high water table, saturation, geomorphic position, and FAC neutral test. Dominant vegetation consisted of shallow sedge, lamp rush, and common fox sedge. The soil between 0-9 inches exhibited a low-chroma matrix color (10YR 5/2) with a silty clay loam texture that contained redoximorphic features (10YR 4/6).

Wetland M1

Wetland M1 (W-M1) is a PEM wetland 235-SF in size located in the central portion of the study area (Figure 4-16). Indicators of wetland hydrology included oxidized rhizospheres on living roots and FAC neutral test. Dominant vegetation consisted of reed canary grass. The soil between 0-2 inches exhibited a low-chroma matrix color (10YR 2/1) with a clay loam texture. The soil between 2-8 inches exhibited a low-chroma matrix color (2.5Y 5/2) with a gravely clay loam texture that contained redoximorphic features (7.5YR 5/6).

Wetland AA9

Wetland AA9 (W-AA9) is a PEM wetland 275-SF in size located in the central portion of the study area (Figure 4-16). Indicators of wetland hydrology include a high water table, saturation, geomorphic position, and FAC neutral test. Dominant vegetation consisted of rough-stalk blue grass and common fox sedge. The soil between 0-19 inches exhibited a low-chroma matrix color (10YR 5/1) with a silty clay loam texture that contained redoximorphic features (10YR 5/8).

Wetland AA10

Wetland AA10 (W-AA10) is a PEM wetland 1,344-SF in size located in the western portion of the study area (Figure 4-18). Indicators of wetland hydrology include a high water table, saturation, oxidized rhizospheres on living roots, geomorphic position, and FAC neutral test. Dominant vegetation consisted of black tupelo (*Nyssa sylvatica*), rice cut grass (*Leersia oryzoides*), and harvestlice (*Agrimonia parviflora*). The soil between 0-3 inches exhibited a low-chroma matrix color (10YR 2/2) with a sandy loam texture. The soil between 3-19 inches exhibited low-chroma matrix

colors (10YR 2/2, 10YR 5/1) with a sandy loam texture that contained redoximorphic features (10YR 3/6).

Wetland M3

Wetland M3 (W-M3) is a PEM wetland 28,129-SF in size located in the western portion of the study area (Figure 4-18). Indicators of wetland hydrology included oxidized rhizospheres on living roots, geomorphic position, and FAC neutral test. Dominant vegetation consisted of black walnut (*Juglans nigra*), black willow (*Salix nigra*), wingstem (*Verbesina alternifolia*), and narrow leaf cat-tail. The soil between 0-8 inches exhibited a low-chroma matrix color (10YR 4/2) with a silt loam texture that contained redoximorphic features (7.5YR 4/4).

Wetland M4

Wetland M4 (W-M4) is a PEM wetland 17,194-SF in size located in the western portion of the study area (Figure 4-18). Indicators of wetland hydrology included surface water, a high water table, saturation, iron deposits, and FAC neutral test. Dominant vegetation consisted of reed canary grass and narrow leaf cat-tail. The soil between 0-12 inches exhibited a low-chroma matrix color (10YR 3/1) with a clay loam texture that contained redoximorphic features (10YR 4/4).

Wetland M2

Wetland M2 (W-M2) is a PEM wetland 27,784-SF in size located in the western portion of the study area (Figure 4-19). Indicators of wetland hydrology included surface water, saturation, oxidized rhizospheres on living roots, geomorphic position, and FAC neutral test. Dominant vegetation consisted of black willow, narrow leaf cat-tail, and reed canary grass. The soil between 0-8 inches exhibited a low-chroma matrix color (10YR 4/1) with a clay loam texture that contained redoximorphic features (7.5YR 4/4).

Wetland M5

Wetland M5 (W-M5) is a PEM wetland 2,094-SF in size located in the western portion of the study area (Figure 4-19). Indicators of wetland hydrology included geomorphic position and FAC neutral test. Dominant vegetation consisted of black willow and narrow leaf cat-tail. The soil between 0-12 inches exhibited a low-chroma matrix color (10YR 5/2) with a clay loam texture that contained redoximorphic features (5YR 5/4).

Wetland M6

Wetland M6 (W-M6) is a PEM wetland 259-SF in size located in the western portion of the study area (Figure 4-19). Indicators of wetland hydrology included oxidized rhizospheres on living roots, geomorphic position, and FAC neutral test. Dominant vegetation consisted of narrow leaf cat-tail

(*Typha angustifolia*) and soft-stem bulrush (*Schoenoplectus tabernaemontani*). The soil between 0-12 inches exhibited a low-chroma matrix color (10YR 5/2) with a clay loam texture that contained redoximorphic features (5YR 4/4).

3.1.3 Wetzel County, WV (Webster Interconnect, Mobley Tap, and H-319)

Based on field evidence and best professional judgment, it was determined that 3 wetlands were present within the study area. These areas demonstrated the presence of all three wetland parameters required by the *1987 Manual* and the *USACE Regional Supplement*.

A review of the NRCS Soil Survey and hydric soil list indicated that five soils mapped within the Wetzel county study area are classified as hydric or as containing hydric components (Figure 2): Elk silt loam, 3 to 8 percent slopes (EkB), Glenford silt loam, 3 to 8 percent slopes (GsB), Huntington silt loam (Hn), Nolin loam (No), Skidmore gravelly loam (Sk).

No NWI wetlands are mapped within the study area (Figure 3).

Wetland Z1

Wetland Z1 (W-Z1) is a PEM wetland 176-SF in size located in the southern portion of the study area (Figure 4-22). Indicators of wetland hydrology included oxidized rhizospheres on living roots, geomorphic position, and FAC neutral test. Dominant vegetation consisted of black walnut (*Juglans nigra*), ash-leaf maple (*Acer negundo*), deertongue rosette grass (*Dichanthelium clandestinum*), and reed canary grass (*Phalaris arundinacea*). The soil between 0-8 inches exhibited a low-chroma matrix color (10YR 4/2) with a silt loam texture. The soil between 8-20 inches exhibited a low-chroma matrix color (10YR 4/2) with a silt loam texture that contained redoximorphic features (10YR 5/8).

Wetland Z3A and B

Wetland Z3 (W-Z3A and B) is a PEM wetland 7,720-SF in size located in the southern portion of the study area (Figure 4-21). Indicators of wetland hydrology included oxidized rhizospheres on living roots, geomorphic position, and FAC neutral test. Dominant vegetation consisted of shallow sedge (*Carex lurida*), common fox sedge (*Carex vulpinoidea)*, and small carp grass (*Arthraxon hispidus*). The soil between 0-8 inches exhibited low-chroma matrix colors (10YR 4/2 and 2.5Y 6/8) with a silty clay loam texture that contained redoximorphic features (7.5YR 5/8).

Wetland Z2

Wetland Z2 (W-Z2) is a PEM wetland 4,025-SF in size located in the southern portion of the study area (Figure 4-21). Indicators of wetland hydrology included oxidized rhizospheres on living roots,

geomorphic position, and FAC neutral test. Dominant vegetation consisted of common fox sedge (*Carex vulpinoidea)*. The soil between 0-10 inches exhibited a low-chroma matrix color (10YR 4/2) with a silty clay loam texture that contained redoximorphic features (7.5YR 5/8).

3.2 Stream Identification and Evaluation

Thirty-seven streams were identified within the evaluated study area. Data sheets that detail the bank and channel characteristics, substrate composition, aquatic habitat, and hydrology were prepared at each stream (Appendix A).

3.2.1 Washington/Allegheny Counties (H-318 pipeline)

Six steams were identified within the evaluated study area in Washington and Allegheny counties.

Stream BB1

Stream BB1 (S-BB1), which flows west, is the perennial stream Lobbs Run (Figure 4-1). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 2 feet in width and 1 foot in height. The channel contained a cobble, gravel, sand, and silt substrate. The stream exhibited a heavy flow at the time of the field investigations with a water depth of approximately 5 inches.

Stream BB2

Stream BB2 (S-BB2), which flows north, is an ephemeral UNT to Lobbs Run (Figure 4-2). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 1 foot in width and 1 foot in height. The channel contained a silt and clay substrate. The stream exhibited a moderate flow at the time of the field investigations with a water depth of approximately 2 inches.

Stream BB5

Stream BB5 (S-BB5), which flows east, is a perennial known as the Monongehela River (Figure 4-3). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 860 feet in width and 70 feet in height. The substrate was not documented as the investigators were unable to see the bottom of the river. The stream exhibited a heavy flow at the time of the field investigations. Water depth was unable to be documented as the investigators we unable to access the river to determine depth.

Stream BB4

Stream BB4 (S-BB4), which flows east, is the perennial stream Bunola Run Figure 4-4). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 20 feet in width and 3 foot in height. The channel contained a boulder, cobble, gravel, sand, silt, and clay substrate. The stream exhibited a moderate flow at the time of the field investigations with a water depth of approximately 12 inches.

Stream BB6

Stream BB6 (S-BB6), which flows north, is a perennial UNT to Bunola Run (Figure 4-4). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 3 feet in width and 2 feet in height. The channel contained a cobble, gravel, and silt substrate. The stream exhibited a moderate flow at the time of the field investigations with a water depth of approximately 7 inches

Stream BB3

Stream BB3 (S-BB3), which flows northeast, is the perennial stream Kelly Creek (Figure 4-6). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 30 feet in width and 3 foot in height. The channel contained a cobble, gravel, sand, and silt substrate. The stream exhibited a heavy flow at the time of the field investigations with a water depth of approximately 18 inches.

3.2.2 Greene County (H-316, M-80, H-158, H-305, and the Redhook Compressor Station)

Twenty seven streams were identified within the evaluated study area in Greene County.

Stream N1

Stream N1 (S-N1), which flows south, is an intermittent UNT to South Fork Tenmile Creek (Figure 4-12). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, and groundwater. The stream channel is approximately 7 feet in width and 6 feet in height. The channel contained a cobble, gravel, and sand substrate. The stream exhibited a no flow at the time of the field investigations.

Stream N2

Stream N2 (S-N2), which flows southwest, is an intermittent UNT to South Fork Tenmile Creek (Figure 4-12). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, and groundwater. The stream channel is approximately 2 feet in width and 1 foot in height. The

channel contained a cobble, gravel, sand, and silt substrate. The stream exhibited a no flow at the time of the field investigations.

Stream N3

Stream N3 (S-N3), which flows southwest, is an intermittent UNT to South Fork Tenmile Creek (Figure 4-12). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, and groundwater. The stream channel is approximately 3 feet in width and 6 inches in height. The channel contained a boulder, cobble, sand, and silt substrate. The stream exhibited a no flow at the time of the field investigations.

Stream AA1

Stream AA1 (S-AA1), which flow south is a perennial UNT to South Fork Tenmile Creek (Figure 4-12). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 10 feet in width and 16 inches in height. The channel contained a bedrock, boulder, cobble, and gravel substrate. The stream exhibited heavy a flow at the time of the field investigations with a water depth of approximately 3 inches.

Stream AA2

Stream AA2 (S-AA2), which flows southeast, is an ephemeral UNT to South Fork Tenmile Creek (Figure 4-12). The stream bank is approximately 1.5 feet in width and 6 inches in height. The channel substrate is comprised of sand, silt, and clay. The stream exhibited standing water at the time of the field investigations with a water depth of approximately 0.5 inches.

Stream AA5

Stream AA5 (S-AA5), which flows southwest, is the perennial stream South Fork Tenmile Creek (Figure 4-12). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 70 feet in width and 15 feet in height. The substrate was not documented as the investigators were unable to see the bottom of the stream. The stream exhibited a heavy flow at the time of the field investigations with a water depth of approximately 4 feet.

Stream AA7

Stream AA7 (S-AA7), which flows west, is an ephemeral UNT to South Fork Tenmile Creek (Figure 4-12). The stream bank is approximately 8 feet in width and 2 feet in height. The channel substrate

is comprised of boulder cobble, and gravel substrate. The stream exhibited a heavy flow at the time of the field investigations with a water depth of approximately 4 inches.

Stream AA3

Stream AA3 (S-AA3), which flows south, is an ephemeral UNT to South Fork Tenmile Creek (Figure 4-12). The stream bank is approximately 4 feet in width and 14 inches in height. The channel substrate is comprised of gravel and sand. The stream exhibited a moist channel with no flow at the time of the field investigations.

Stream AA4

Stream AA4 (S-AA4), which flows south, is a perennial UNT to South Fork Tenmile Creek (Figure 4-13). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 5 feet in width and 21 inches in height. The channel contained a cobble, gravel and sand substrate. The stream exhibited a moderate flow at the time of the field investigations with a water depth of approximately 2 inches.

Stream AA8

Stream AA8 (S-AA8), which flows southeast, is an ephemeral UNT to South Fork Tenmile Creek (Figure 4-14). The stream bank is approximately 3 feet in width and 1.5 feet in height. The channel substrate is comprised of silt and clay substrate. The stream exhibited a heavy flow at the time of the field investigations with a water depth of approximately 1 inch.

Stream AA9

Stream AA9 (S-AA9), which flows southwest, is an ephemeral UNT to South Fork Tenmile Creek (Figure 4-14). The stream bank is approximately 4 feet in width and 18 inches in height. The channel substrate is comprised of silt and clay substrate. The stream exhibited a heavy flow at the time of the field investigations with a water depth of approximately 1 inch.

Stream AA10

Stream AA10 (S-AA10), which flows south, is an intermittent UNT to South Fork Tenmile Creek (Figure 4-14). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, and groundwater. The stream channel is approximately 5 feet in width and 2 feet in height. The channel contained a bedrock, boulder, gravel, and silt substrate. The stream exhibited a moderate flow at the time of the field investigations with a water depth of approximately 3 inches.

Stream AA11

Stream AA11 (S-AA11), which flows southeast, is an ephemeral UNT to Ruff Creek (Figure 4-15). The stream bank is approximately 6.5 feet in width and 60 inches in height. The channel substrate is comprised of boulder, cobble, sand, silt, and clay substrate. The stream exhibited a moist channel with no flow at the time of the field investigations.

Stream AA12

Stream AA12 (S-AA12), which flows south, is the perennial stream Ruff Creek (Figure 4-15). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 75 feet in width and 12 feet in height. The substrate was not documented as the investigators were unable to see the bottom of the stream. The stream exhibited a heavy flow at the time of the field investigations with a water depth of approximately 26 inches.

Stream AA13

Stream AA13 (S-AA13), which flows south, is an ephemeral UNT to South Fork Tenmile Creek (Figure 4-17). The stream bank is approximately 3 feet in width and 15 inches in height. The channel substrate is comprised of boulder, cobble, gravel, sand, silt, and clay substrate. The stream exhibited standing water at the time of the field investigations with a water depth of approximately 0.5 inches.

Stream AA14

Stream AA14 (S-AA14), which flows southwest, is an ephemeral UNT to South Fork Tenmile Creek (Figure 4-17). The stream bank is approximately 3 feet in width and 18 inches in height. The channel substrate is comprised of sand and clay substrate. The stream exhibited a moist channel with no flow at the time of the field investigations.

Stream AA15

Stream AA15 (S-AA15), which flows southeast, is the perennial stream South Fork Tenmile Creek (Figure 4-17). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 100 feet in width and 17 feet in height. The substrate was not documented as the investigators were unable to see the bottom of the stream. The stream exhibited a heavy flow at the time of the field investigations with a water depth of approximately 3 feet.

Stream AA24

Stream AA24 (S-AA24), which flows southeast, is an intermittent UNT to South Fork Tenmile Creek (Figure 4-18). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, and groundwater. The stream channel is approximately 6 feet in width and 2 feet in height. The channel contained a bedrock, cobble, gravel, silt, and clay substrate. The stream exhibited a low flow at the time of the field investigations with a water depth of approximately 1 inch.

Stream AA23

Stream AA23 (S-AA23), which flows east, is an ephemeral UNT to South Fork Tenmile Creek (Figure 4-18). The stream bank is approximately 9 feet in width and 3 feet in height. The channel substrate is comprised of boulder, gravel, and sand substrate. The stream exhibited a moist channel with no flow at the time of the field investigations.

Stream AA22

Stream AA22 (S-AA22), which flows east, is an ephemeral UNT to South Fork Tenmile Creek (Figure 4-18). The stream bank is approximately 7 feet in width and 3 feet in height. The channel substrate is comprised of gravel, sand, silt, and clay substrate. The stream exhibited a low flow at the time of the field investigations with a water depth of approximately .5 inches.

Stream AA21

Stream AA21 (S-AA21), which flows east, is an intermittent UNT to South Fork Tenmile Creek (Figure 4-18). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, and groundwater. The stream channel is approximately 4 feet in width and 4 feet in height. The channel contained a cobble, gravel, sand, silt, and clay substrate. The stream exhibited a low flow at the time of the field investigations with a water depth of approximately 1 inch.

Stream AA20

Stream AA20 (S-AA20), which flows east, is a perennial UNT to South Fork Tenmile Creek (Figure 4-18). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 1 foot in width and 1 foot in height. The channel contained a sand, silt, and clay substrate. The stream exhibited a moderate flow at the time of the field investigations with a water depth of approximately 1 inch.

Stream AA17

Stream AA17 (S-AA17), which flows east, is a perennial UNT to South Fork Tenmile Creek (Figure 4-18). This watercourse is supported by precipitation, surficial runoff from adjacent uplands,

groundwater, and upstream tributaries. The stream channel is approximately 12 feet in width and 4 feet 9inches in height. The channel contained a bedrock boulder, cobble, gravel, sand, and silt substrate. The stream exhibited a moderate flow at the time of the field investigations with a water depth of approximately 22 inches.

Stream AA18

Stream AA18 (S-AA18), which flows northeast, is an intermittent UNT to South Fork Tenmile Creek (Figure 4-18). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, and groundwater. The stream channel is approximately 2 feet in width and 6 inches in height. The channel contained a gravel, sand silt and clay substrate. The stream exhibited a low flow at the time of the field investigations with a water depth of approximately 0.5 inches.

Stream AA19

Stream AA19 (S-AA19), which flows northeast, is an intermittent UNT to South Fork Tenmile Creek (Figure 4-18). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, and groundwater. The stream channel is approximately 2 feet in width and 3 feet in height. The channel contained a sand silt and clay substrate. The stream exhibited a low flow at the time of the field investigations with a water depth of approximately 0.5 inches.

Stream AA16

Stream AA16 (S-AA16), which flows northwest, is a perennial UNT to South Fork Tenmile Creek (Figure 4-18). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 11 feet in width and 57 inches in height. The channel contained a boulder, cobble, and gravel substrate. The stream exhibited a low flow at the time of the field investigations with a water depth of approximately 7 inches.

Stream M1

Stream M1 (S-M1), which flows north, is an ephemeral UNT to Muddy Creek (Figure 4-18). This watercourse is supported by precipitation, surficial runoff from adjacent uplands. The stream channel is approximately 10 feet in width and 4 feet in height. The channel contained a clay, silt, gravel, and cobble, substrate. The stream exhibited a dry channel with no flow at the time of the field investigations.

3.2.3 Wetzel County, WV (Webster Interconnect, Mobley Tap, and H-319)

Four streams were identified within the evaluated study area in Wetzel County.

Stream A2A

Stream A2A (S-A2A), which flows north, is an ephemeral UNT to North Fork Fishing Creek (Figure 4-21). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 12 feet in width and 4 feet in height. The channel contained cobble, gravel, and silt substrate. The stream exhibited low flow at the time of the field investigations with a water depth of approximately 2 inches.

Stream A3A

Stream A3A (S-A3A), which flows east, is an ephemeral UNT to North Fork Fishing Creek (Figure 4-21). This watercourse is supported by precipitation, surficial runoff from adjacent uplands. The stream channel is approximately 5 feet in width and 1.5 feet in height. The channel contained cobble, gravel, and sand substrate. The stream exhibited no flow at the time of the field investigations.

Stream J63

Stream J63 (S-J63), which flows west, is a perennial UNT to Mobley Run (Figure 4-22). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 7 feet in width and 3.5 feet in height. The channel contained cobble, gravel, and silt substrate. The stream exhibited low flow at the time of the field investigations with a water depth of approximately 2 inches.

Stream Z1

Stream Z1 (S-Z1), which flows south, is a perennial known as Mobley Run (Figure 4-22). This watercourse is supported by precipitation, surficial runoff from adjacent uplands, groundwater, and upstream tributaries. The stream channel is approximately 15 feet in width and 3.5 feet in height. The channel contained cobble, gravel, and silt substrate. The stream exhibited low flow at the time of the field investigations with a water depth of approximately 1 inch.

4.0 CONCLUSIONS

Thirty-three areas within the Equitrans Expansion Pipeline Project study area exhibited all three criteria listed below that are necessary to be classified as wetlands in accordance with the *1987 Manual* and the *USACE Regional Supplement*:

1. Predominance of hydrophytic vegetation (plants which are adapted for life in saturated soil conditions);
2. Hydric soils (soils which were formed under water, or in saturated conditions); and
3. Wetland hydrology (or the presence of inundated or saturated soils at some time during the growing season).

Additionally, 37 streams were identified in the Project study area during the investigation.

Washington/Allegheny Counties (H-318 pipeline)

Based on field evidence and best professional judgment, it was determined that 13 wetlands were present within the study area. Six steams were identified within the evaluated study area in Washington and Allegheny counties.

Greene County (H-316, M-80, H-158, H-305, and the Redhook Compressor Station)

Based on field evidence and best professional judgment, it was determined that 17 wetlands were present within the study area. Twenty seven streams were identified within the evaluated study area in Greene County.

Wetzel County, WV (Webster Interconnect, Mobley Tap, and H-319)

Based on field evidence and best professional judgment, it was determined that 3 wetlands were present within the study area. Four streams were identified within the evaluated study area in Wetzel County.

FIGURES

Equitrans Expansion Project

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EQUITRANS

Attachment #: 1-1
USGS Project Location Map
Washington & Allegheny County, PA

October 2015

Data Sources: Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
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- Temporary Right-of-Way
- Workspace
- Permanent Site

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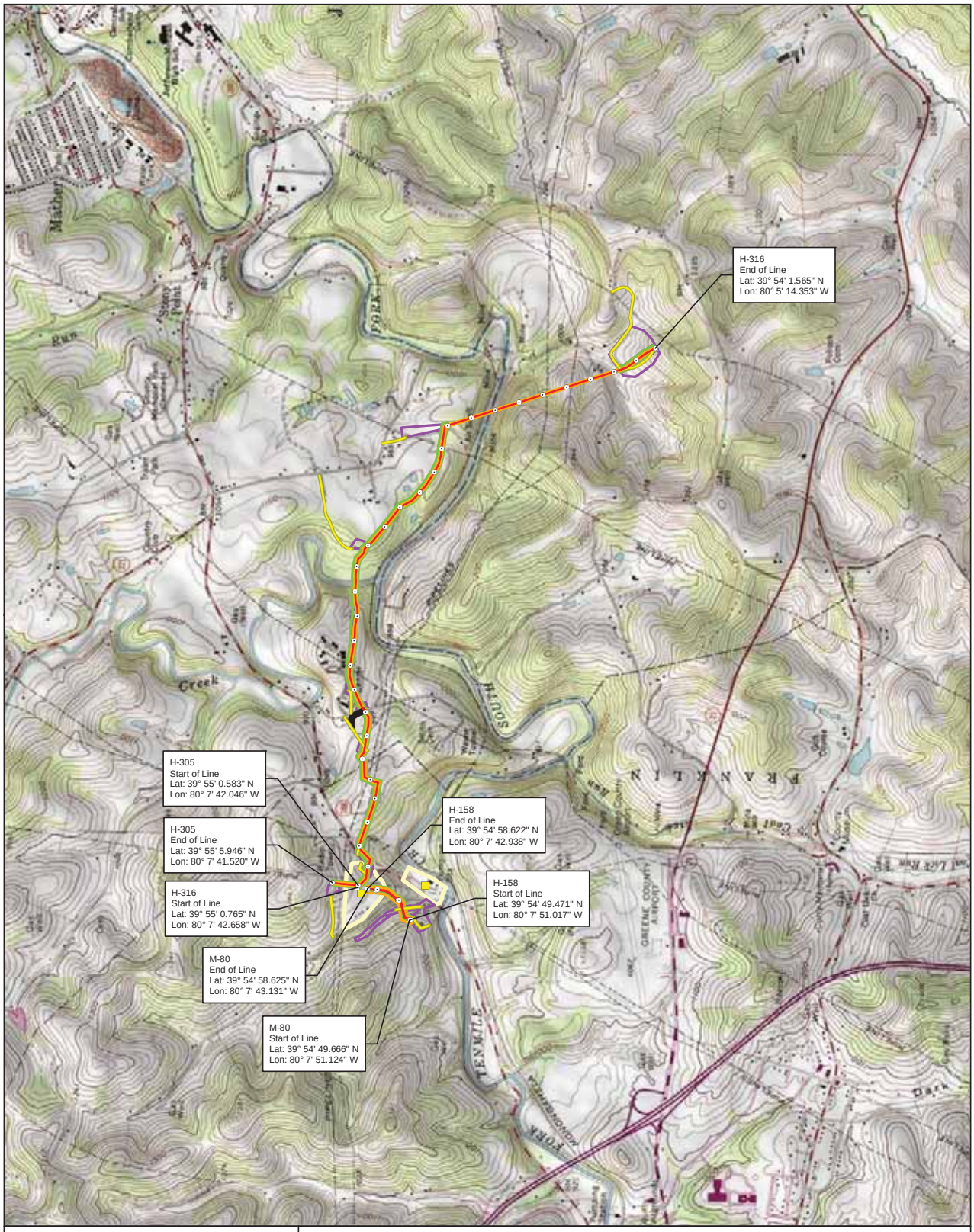

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EQUITRANS

Attachment #: 1-2
USGS Project Location Map
Greene County, Pennsylvania

October 2015

Data Sources: Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).

Legend

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Attachment #: 1-3
USGS Project Location Map
Greene County, Pennsylvania

October 2015

Data Sources: Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).

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Equitrans Expansion Project

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EQUITRANS

Attachment #: 1-4
USGS Project Location Map
Wetzel County, West Virginia

October 2015

Data Sources: Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).

Legend

- Tap
- Milepost
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- Alignment Centerline
- Workspace
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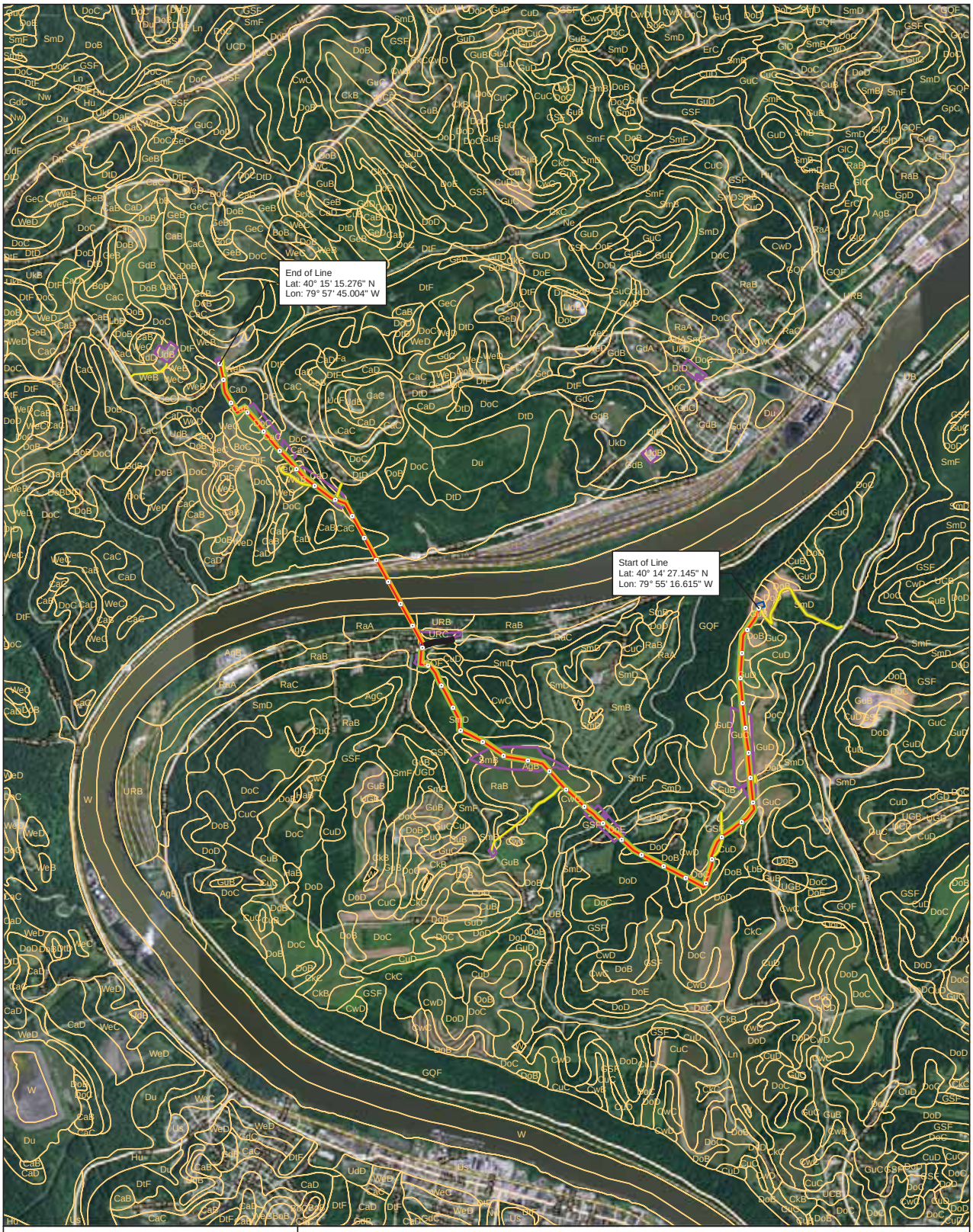

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EQUITRANS

Attachment #: 2-1
NRCS Soils and Codes Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

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- NRCS Soil & Codes

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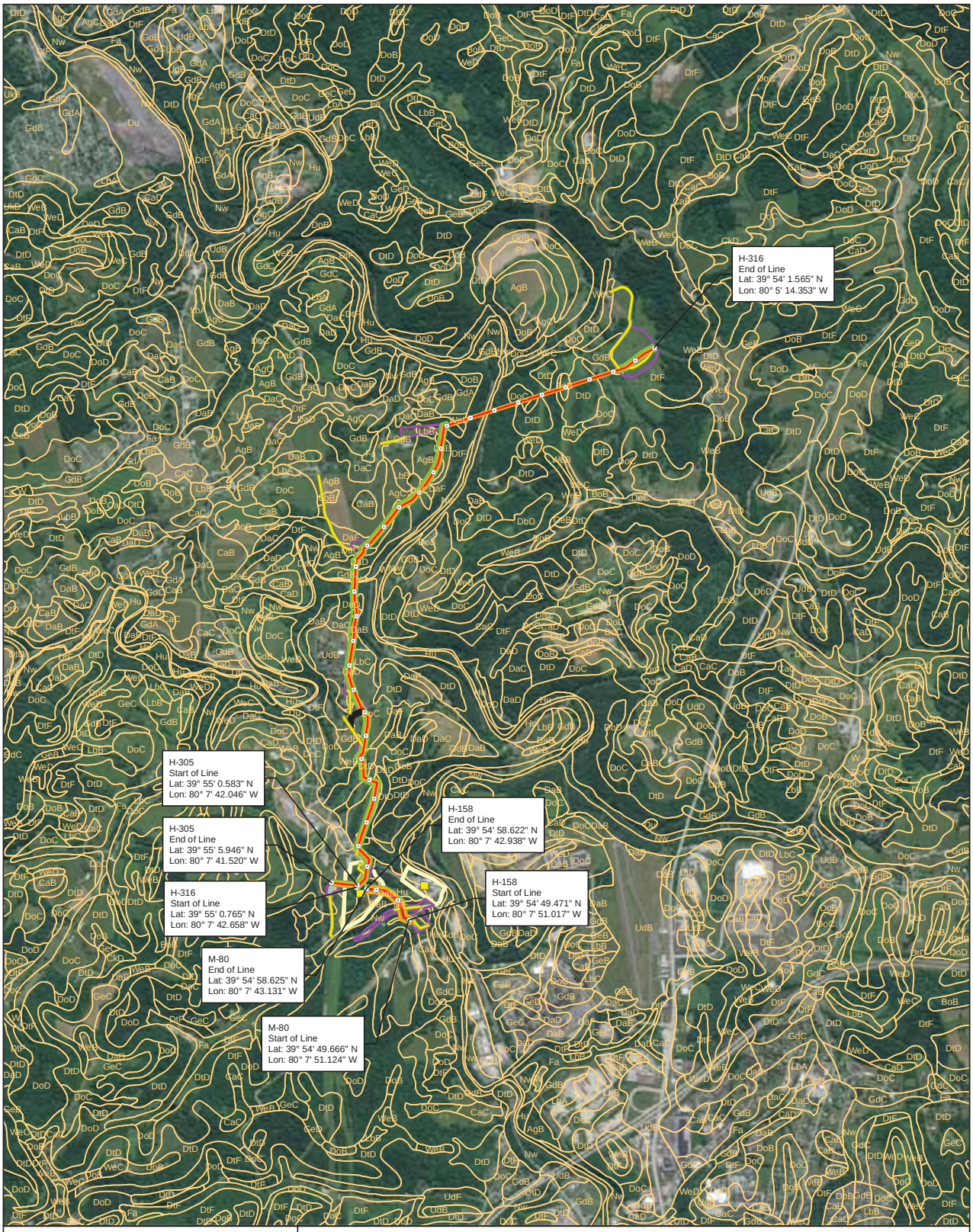

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Attachment #: 2-2
NRCS Soils and Codes Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

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- Compressor Station
- NRCS Soil & Codes

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Attachment #: 2-3
NRCS Soils and Codes Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

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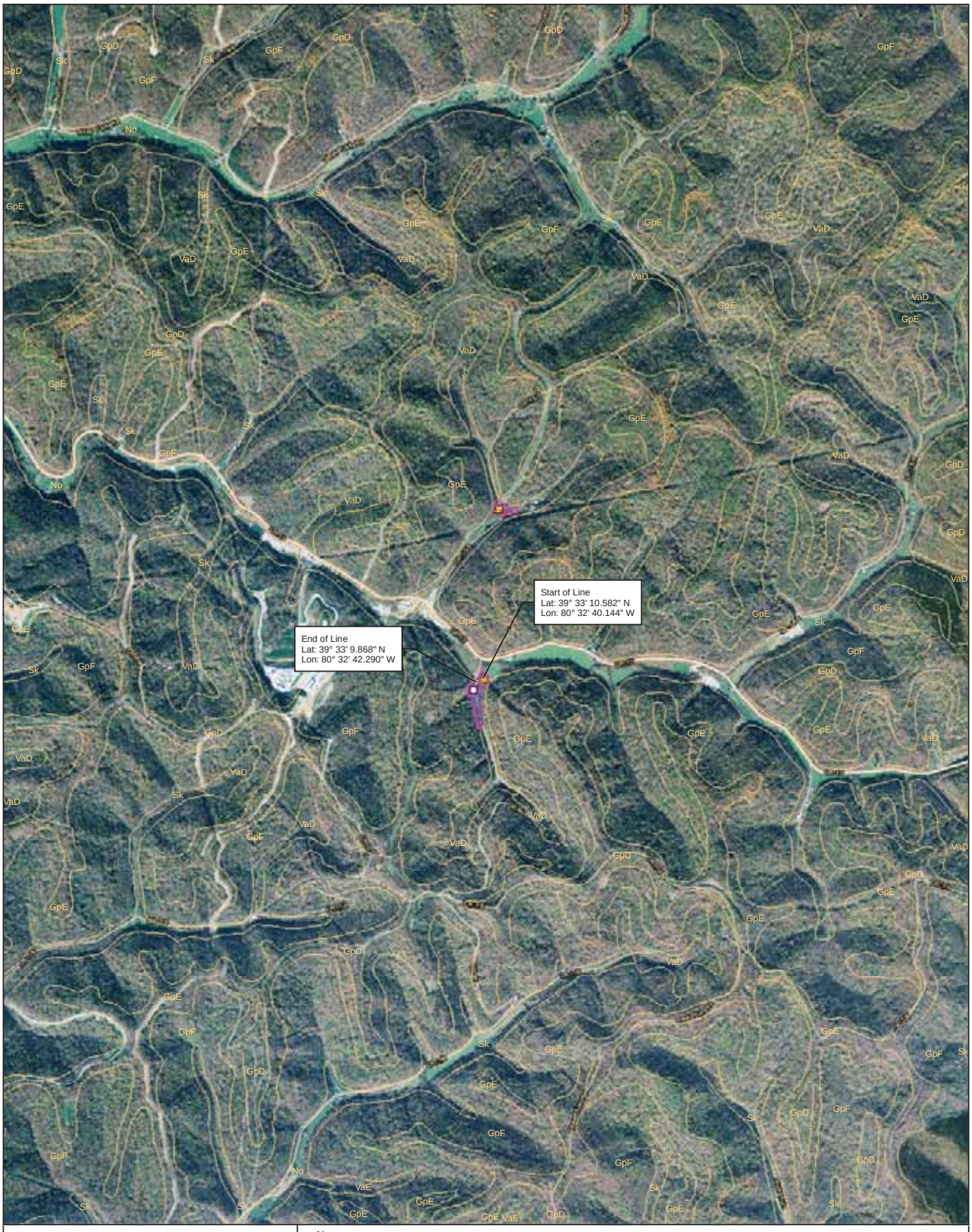

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Attachment #: 2-4
NRCS Soils and Codes Map
Wetzel County, West Virginia

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Tap
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- NRCS Soil & Codes

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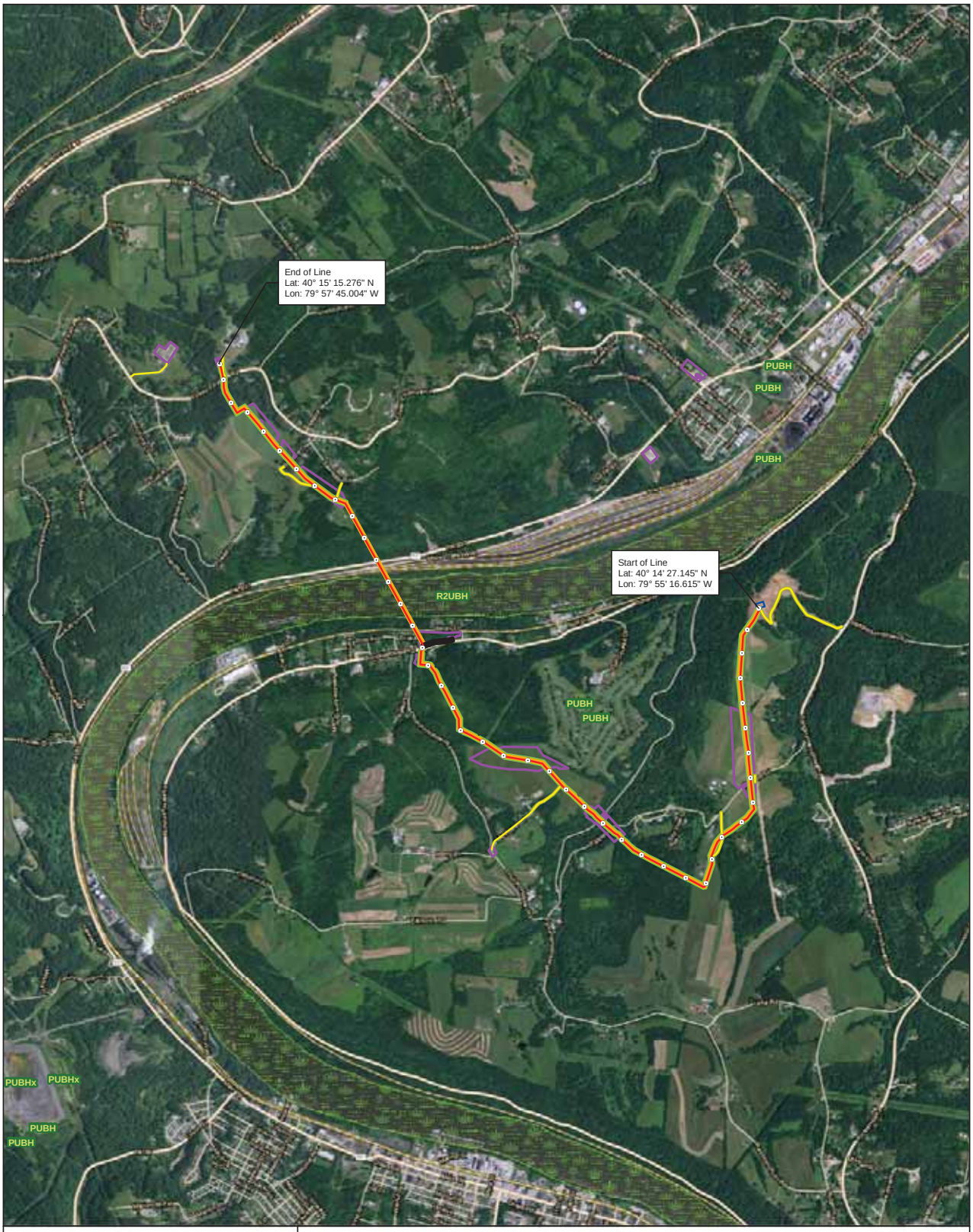

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Attachment #: 3-1
NWI Wetlands and Codes Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
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- NWI Wetlands & Codes

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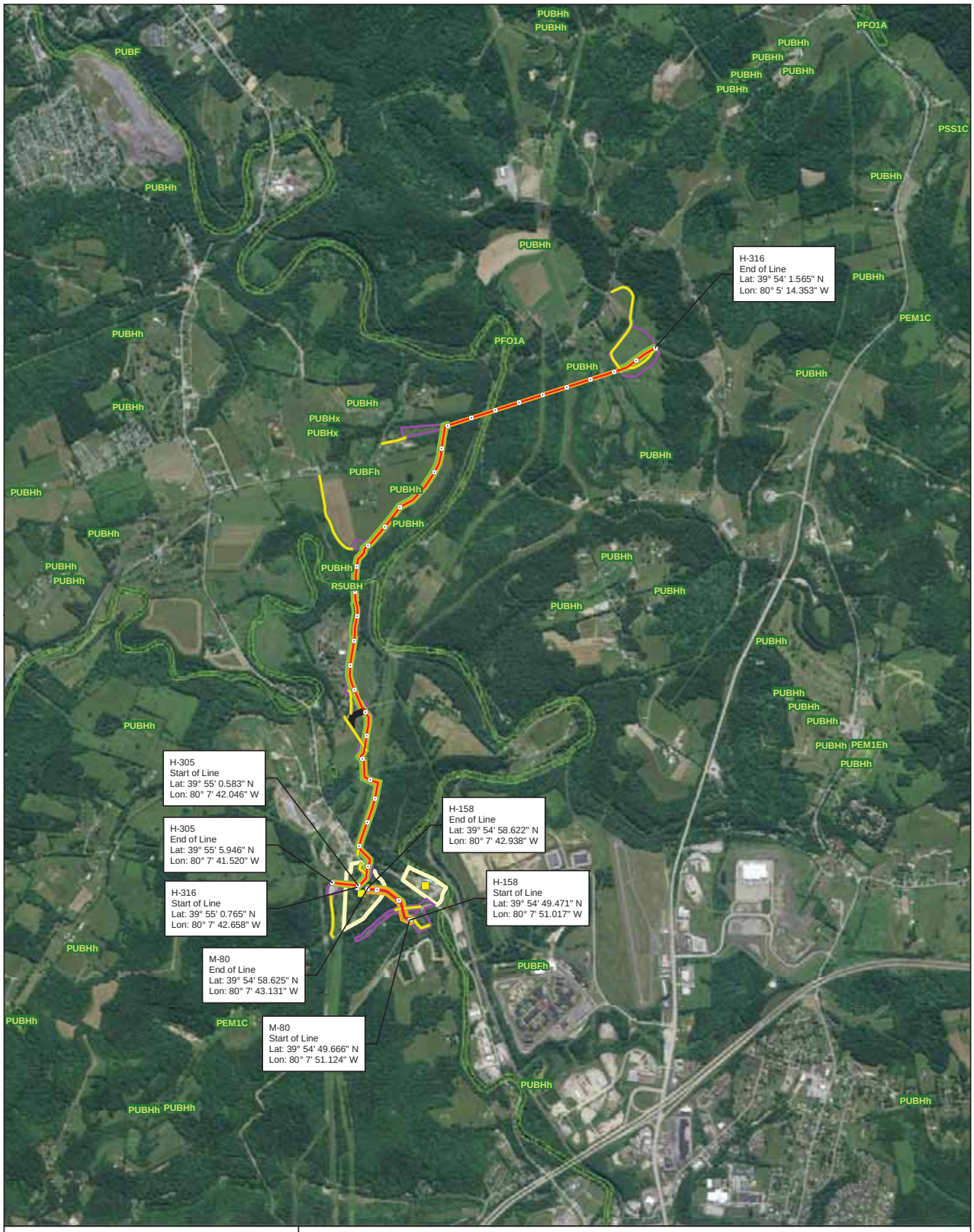

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Attachment #: 3-2
NWI Wetlands and Codes Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

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- Compressor Station
- NWI Wetlands & Codes

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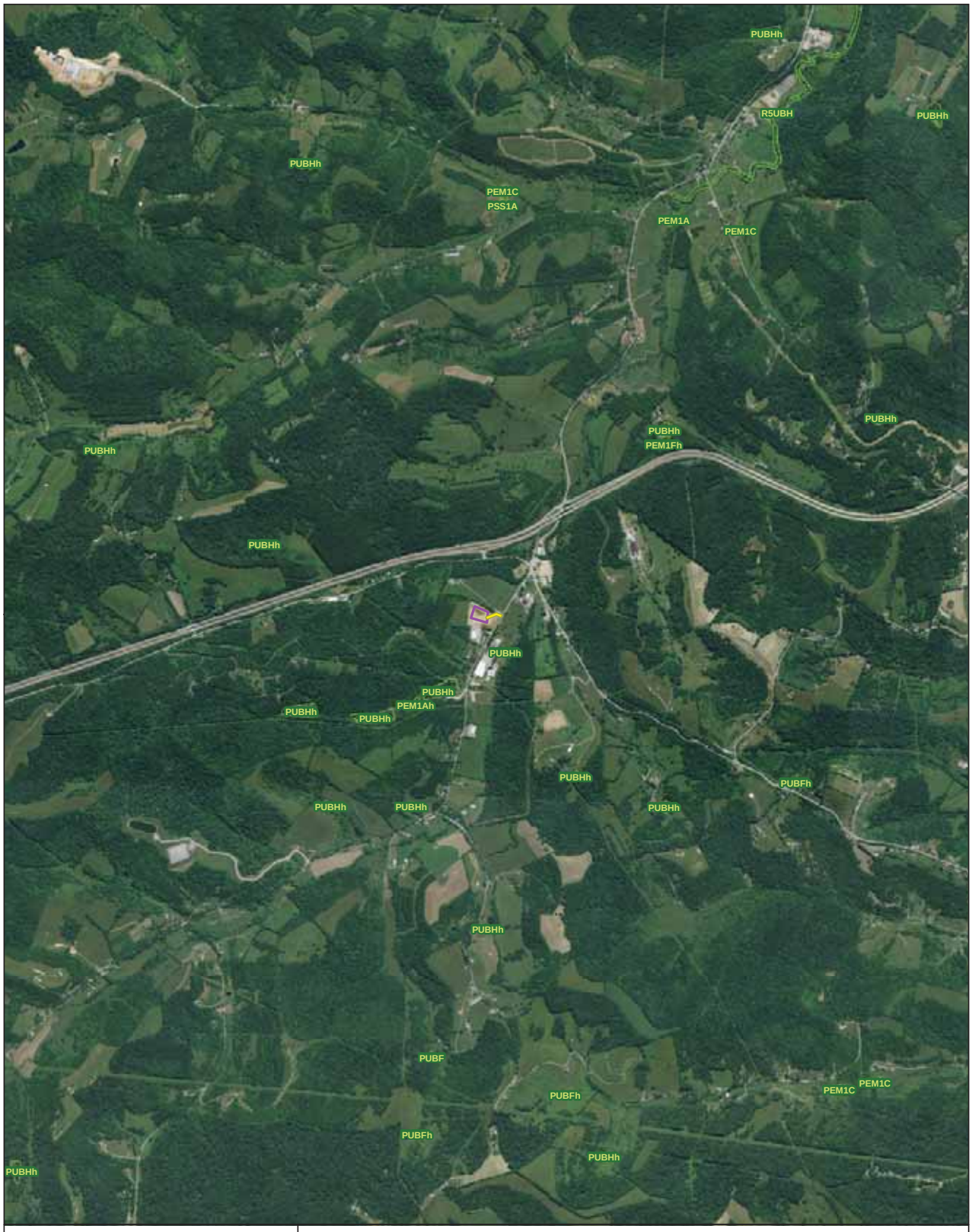

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Attachment #: 3-3
NWI Wetlands and Codes Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

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- NWI Wetlands & Codes

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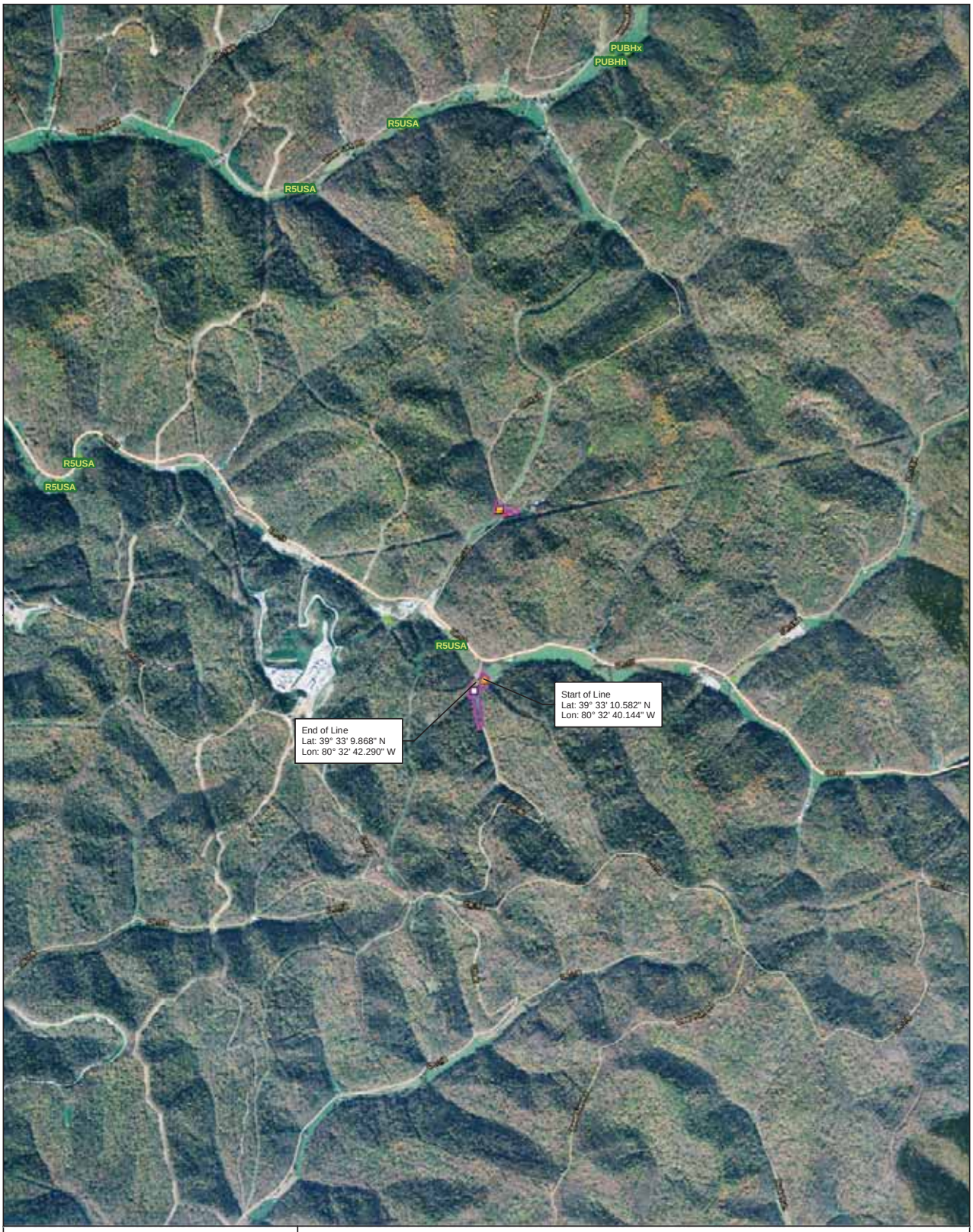

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Attachment #: 3-4
NWI Wetlands and Codes Map
Wetzel County, West Virginia

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Tap
- Milepost
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- Alignment Centerline
- Workspace
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- Compressor Station
- Study Area
- NWI Wetlands and Codes

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Attachment #: 4-1
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
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- Right-of-Way (Access Road)
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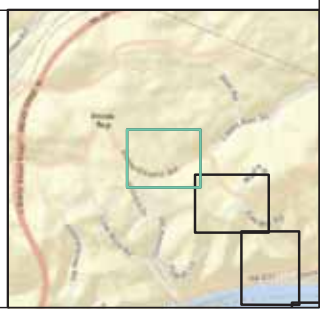
- Culvert
- Test Pit
- Stream

Wetland

- PEM
- PFO
- Photo Location



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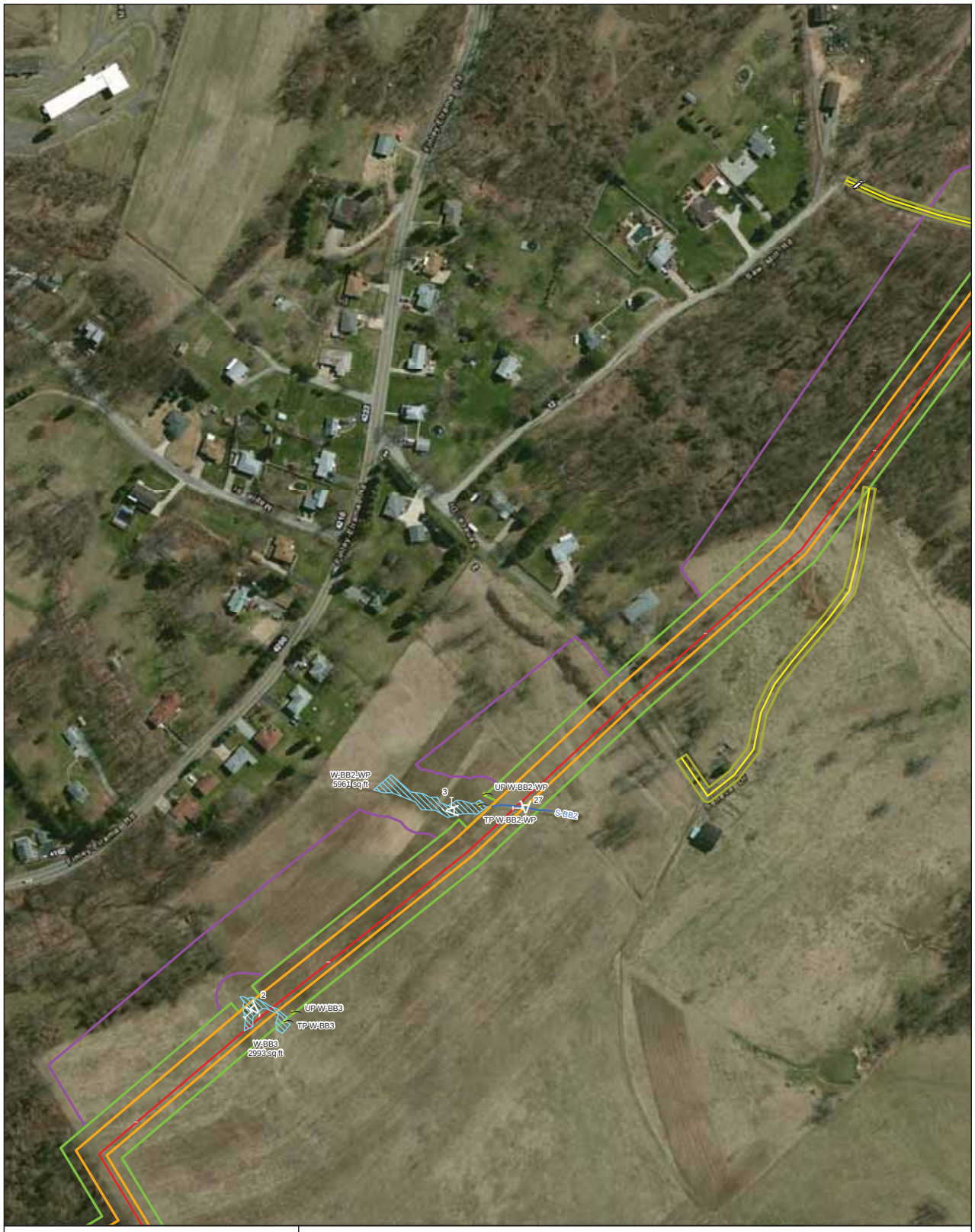

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Attachment #: 4-2
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

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Wetland

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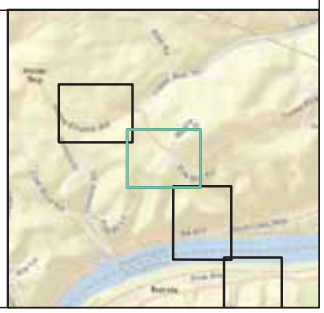

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Attachment #: 4-3
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

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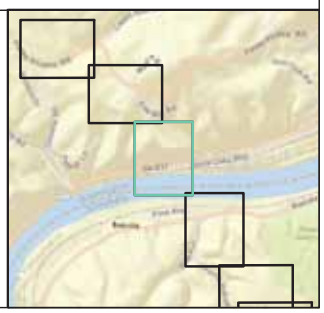

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Attachment #: 4-4
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

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Wetland

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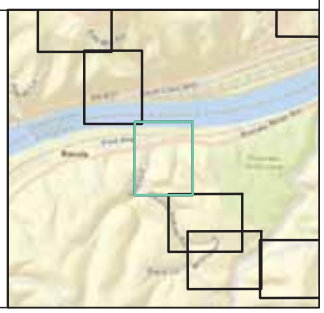

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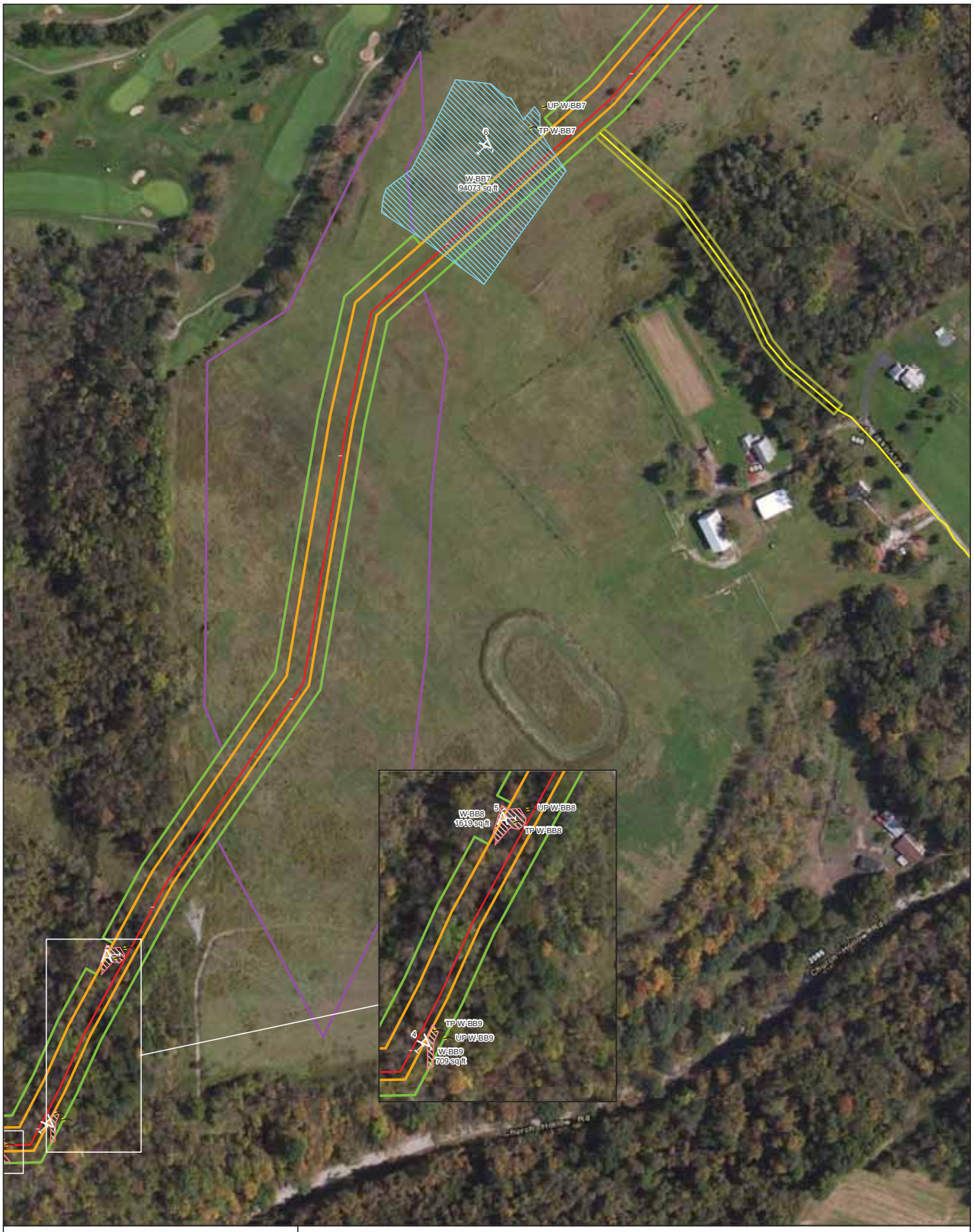

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Attachment #: 4-5
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

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Wetland

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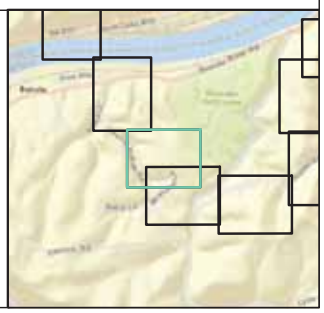

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Attachment #: 4-6
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

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Wetland

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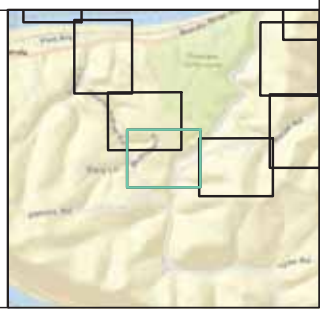
- Photo Location



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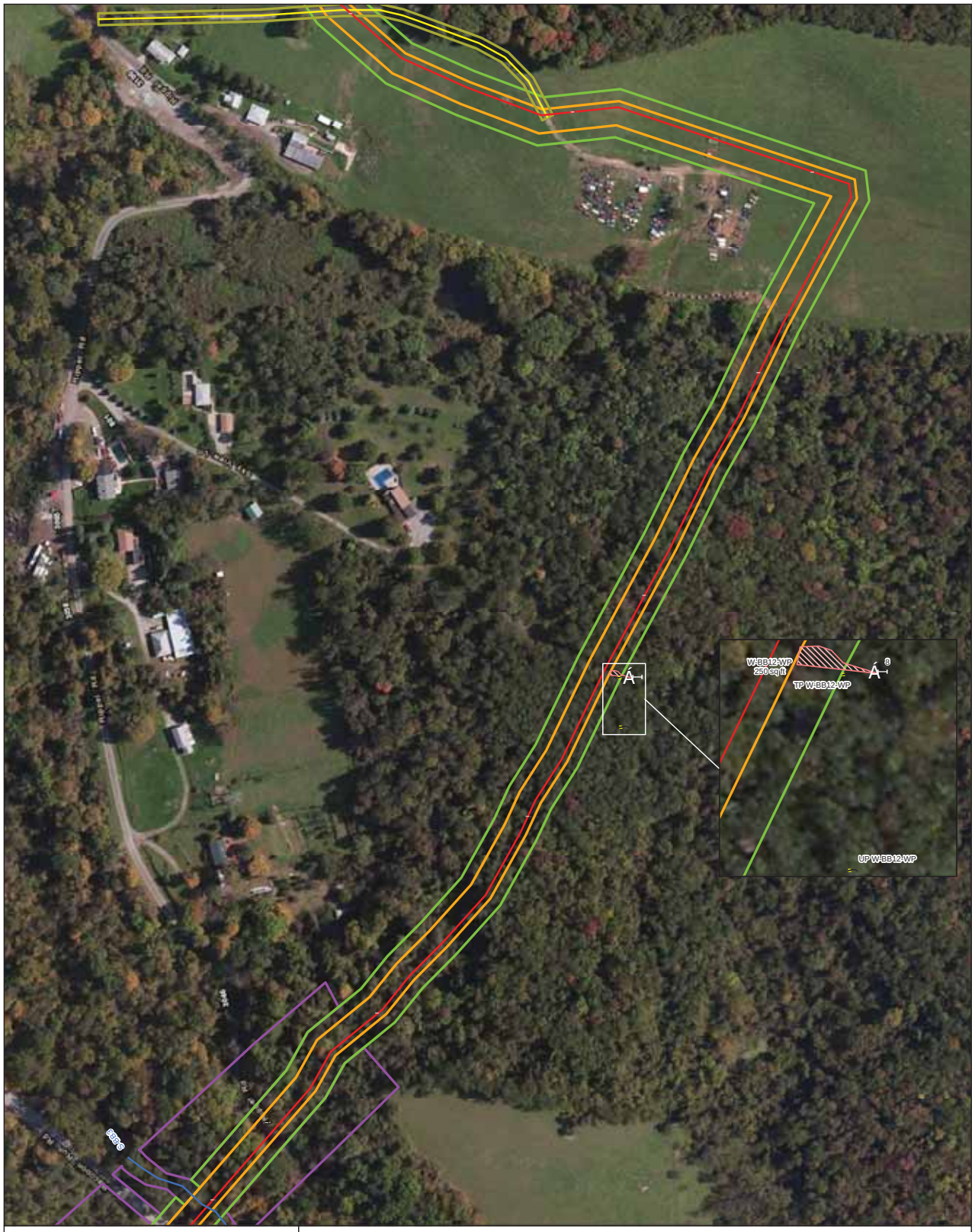

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Attachment #: 4-7
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

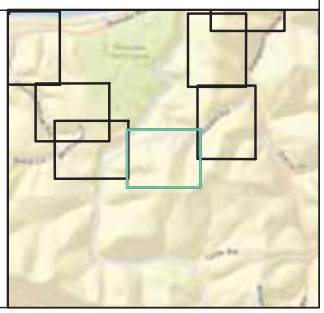
Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Culvert
- Test Pit
- Stream

Wetland

- PEM
- PFO
- Photo Location



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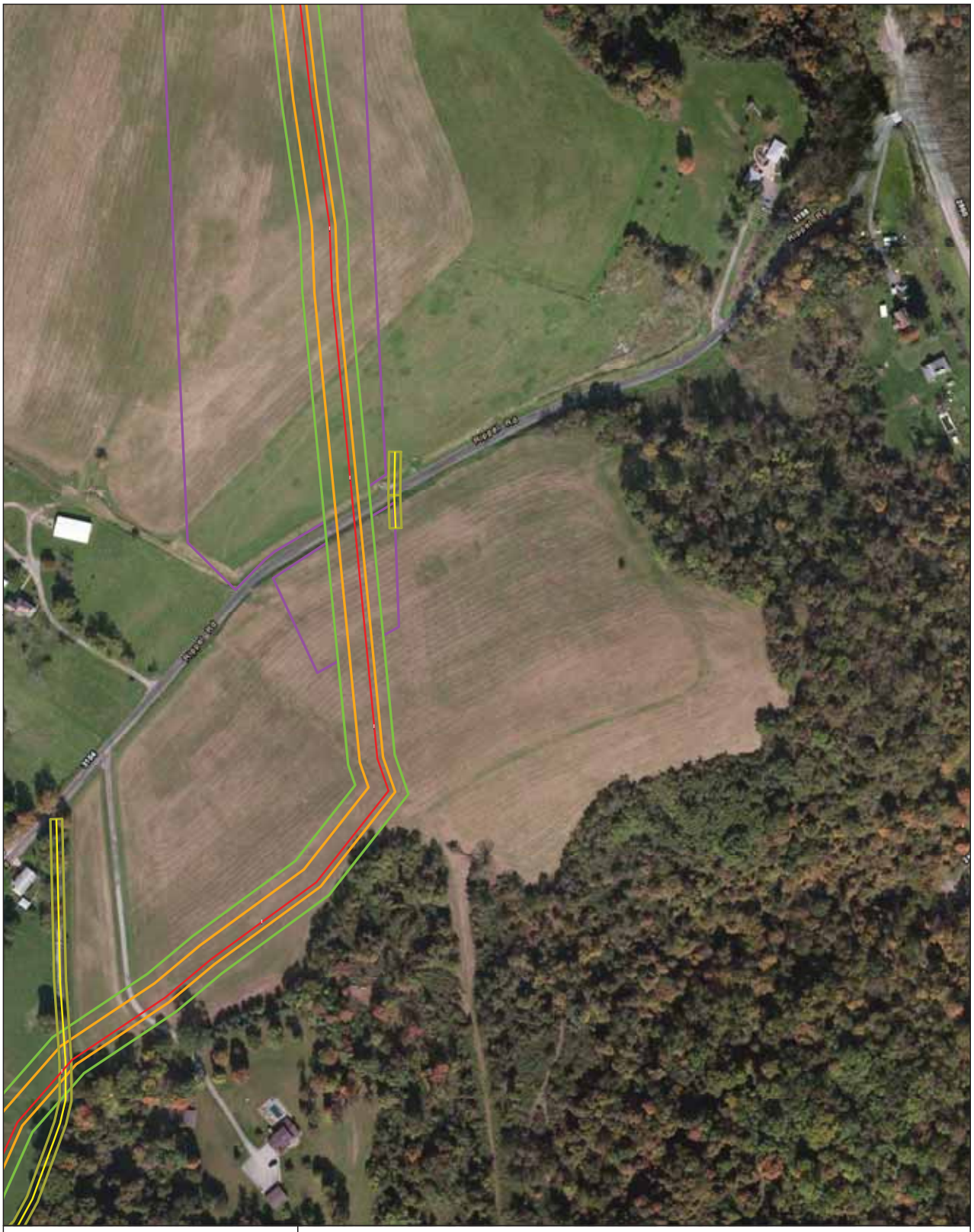


Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS℠

Attachment #: 4-8
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

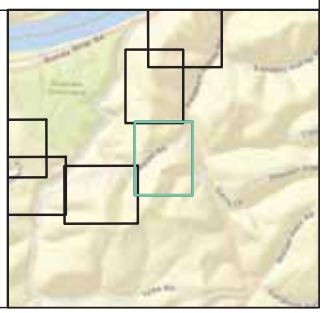
Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Culvert
- Test Pit
- Stream

Wetland

- PEM
- PFO
- Photo Location



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Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS℠

Attachment #: 4-9
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
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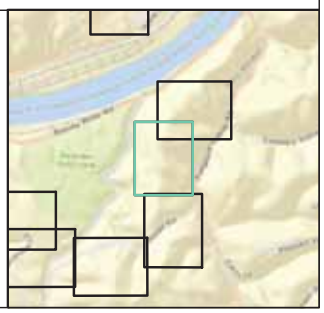
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Culvert
- Test Pit
- Stream

Wetland

- PEM
- PFO
- Photo Location



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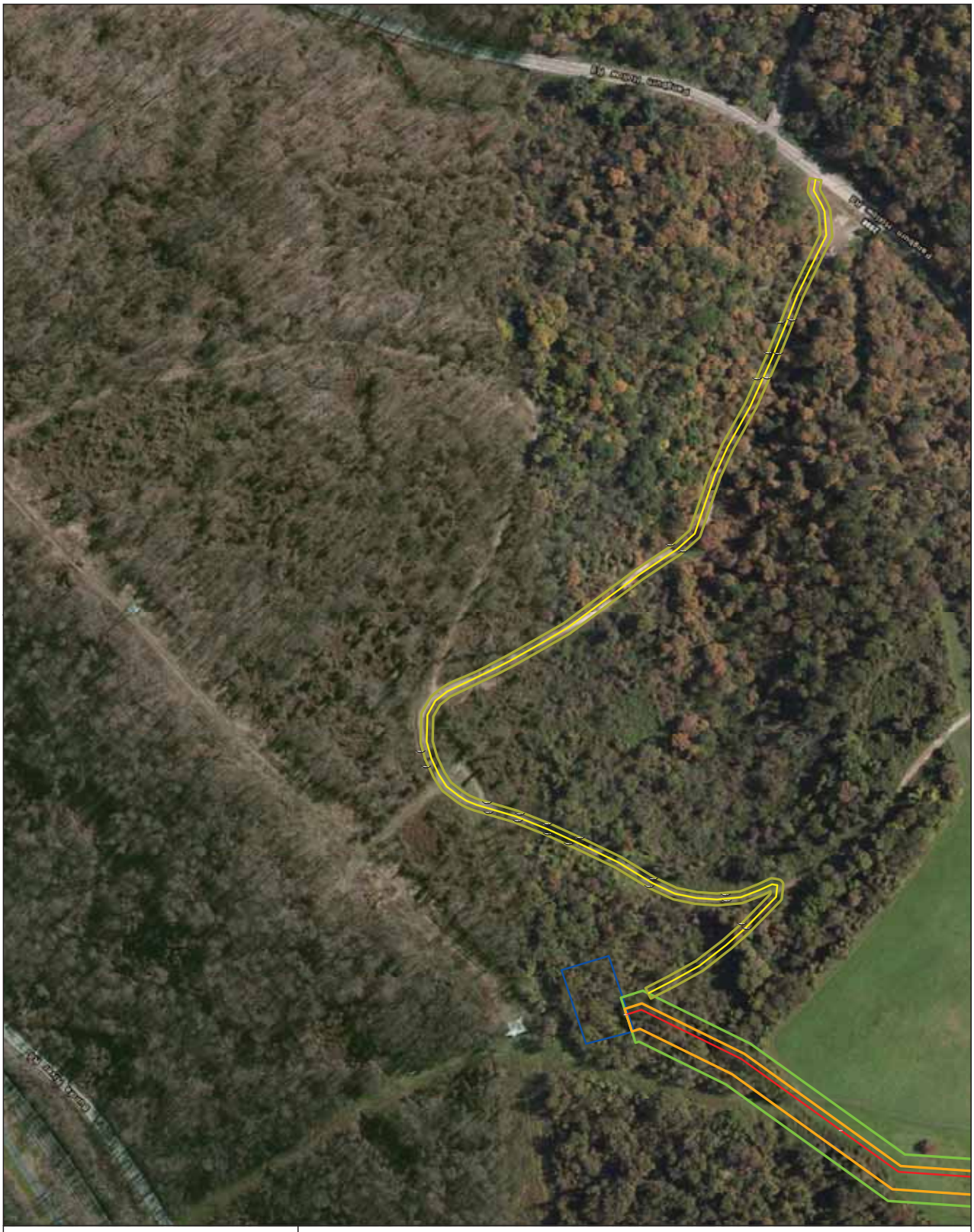

Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS℠

Attachment #: 4-10
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
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- Groundbed
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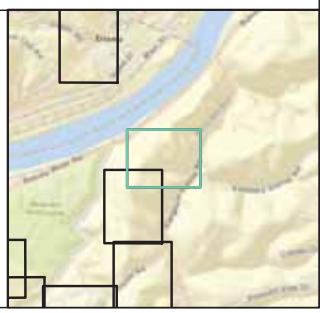
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Culvert
- Test Pit
- Stream

Wetland

- PEM
- PFO
- Photo Location



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Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS℠

Attachment #: 4-11
Wetland Detail Map
Washington & Allegheny County, PA

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
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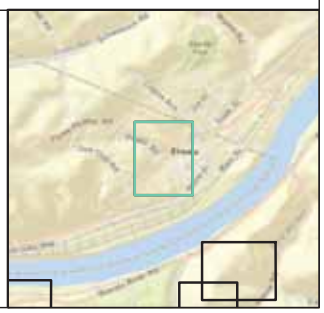
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Culvert
- Test Pit
- Stream

Wetland

- PEM
- PFO
- Photo Location



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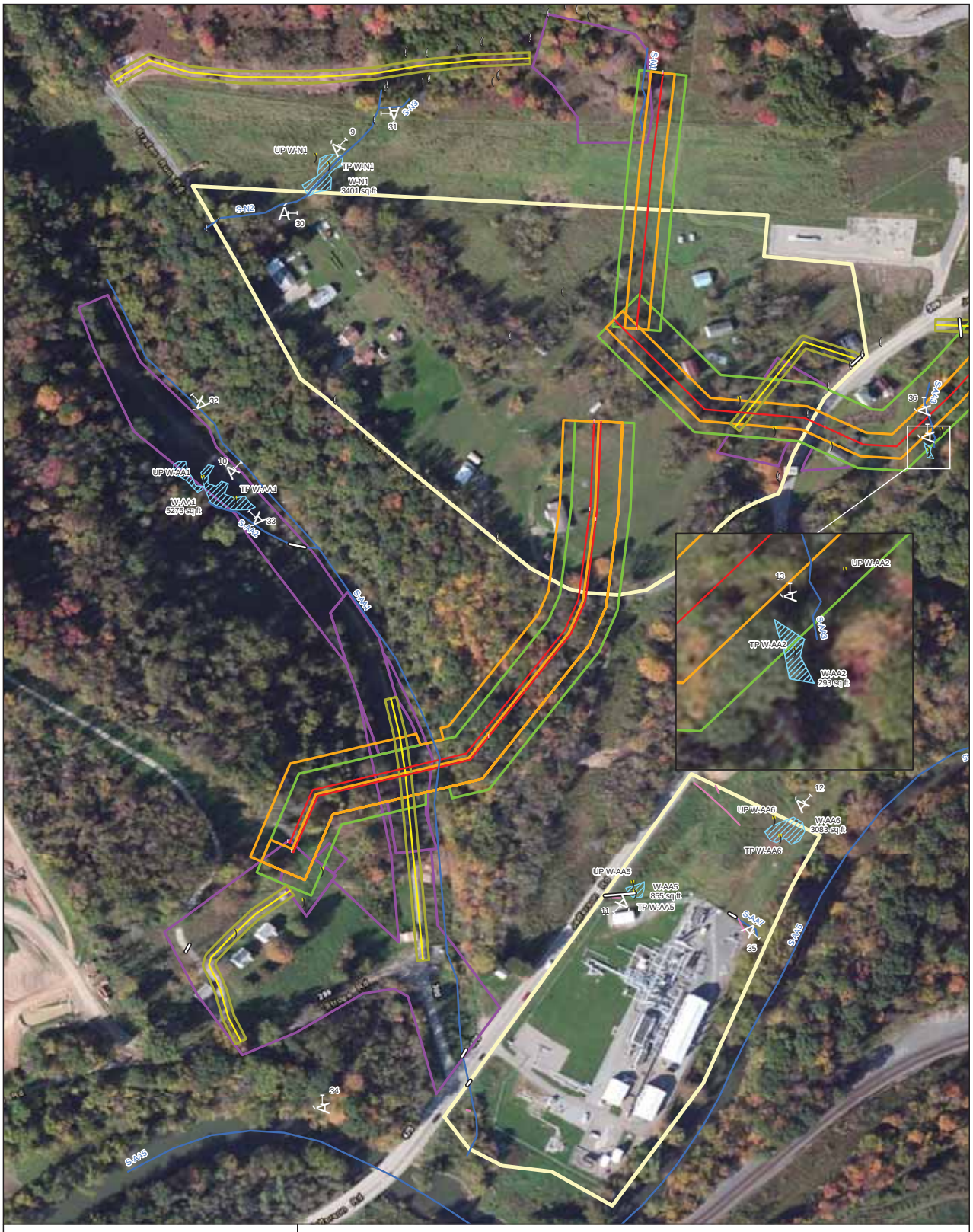


Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS

Attachment #: 4-12
USGS Project Location Map
Greene County, Pennsylvania

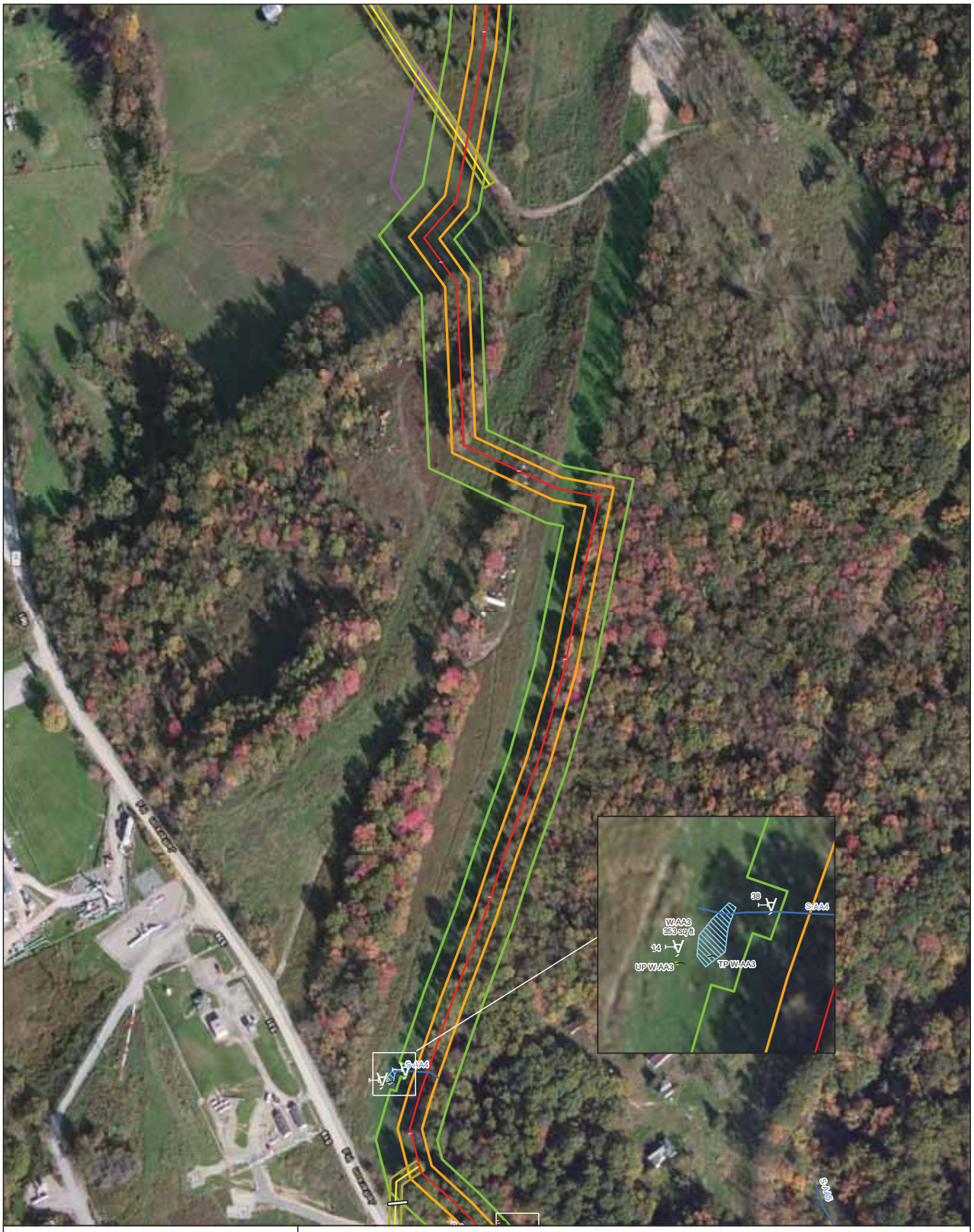
October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station
- Culvert
- Test Pit
- Stream
- Wetland
- Photo Location

Document Path: P:\GIS\EQT\MapDocs\eep_pa_greeneCo_detail.mxd



Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS

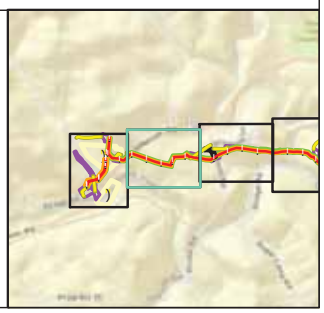
Attachment #: 4-13
USGS Project Location Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station
- Culvert
- Test Pit
- Stream
- Wetland
- Photo Location



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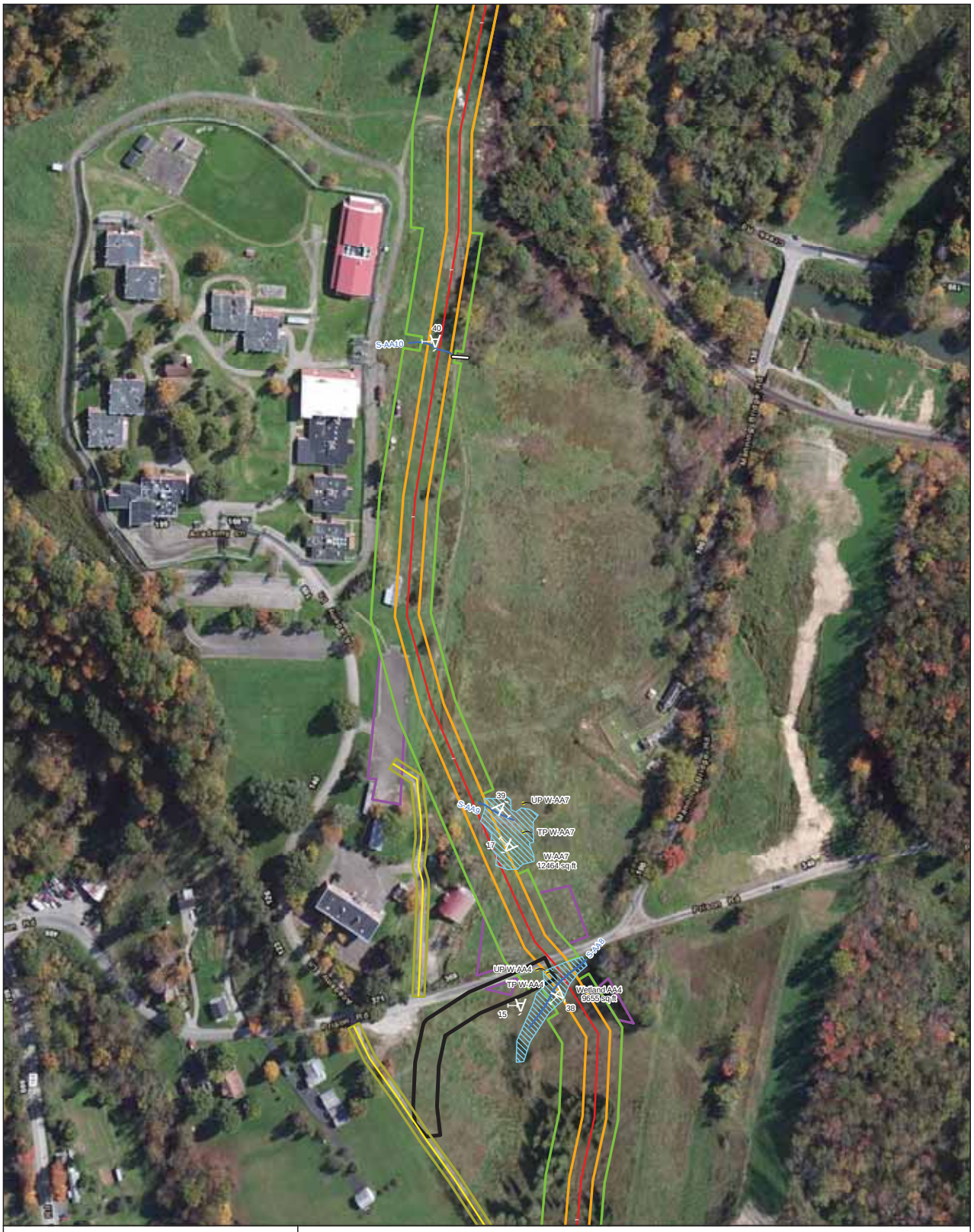


Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS℠

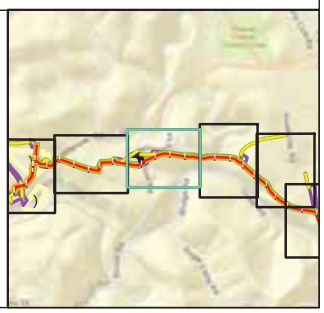
Attachment #: 4-14
USGS Project Location Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station
- Culvert
- Test Pit
- Stream
- Wetland
- Photo Location



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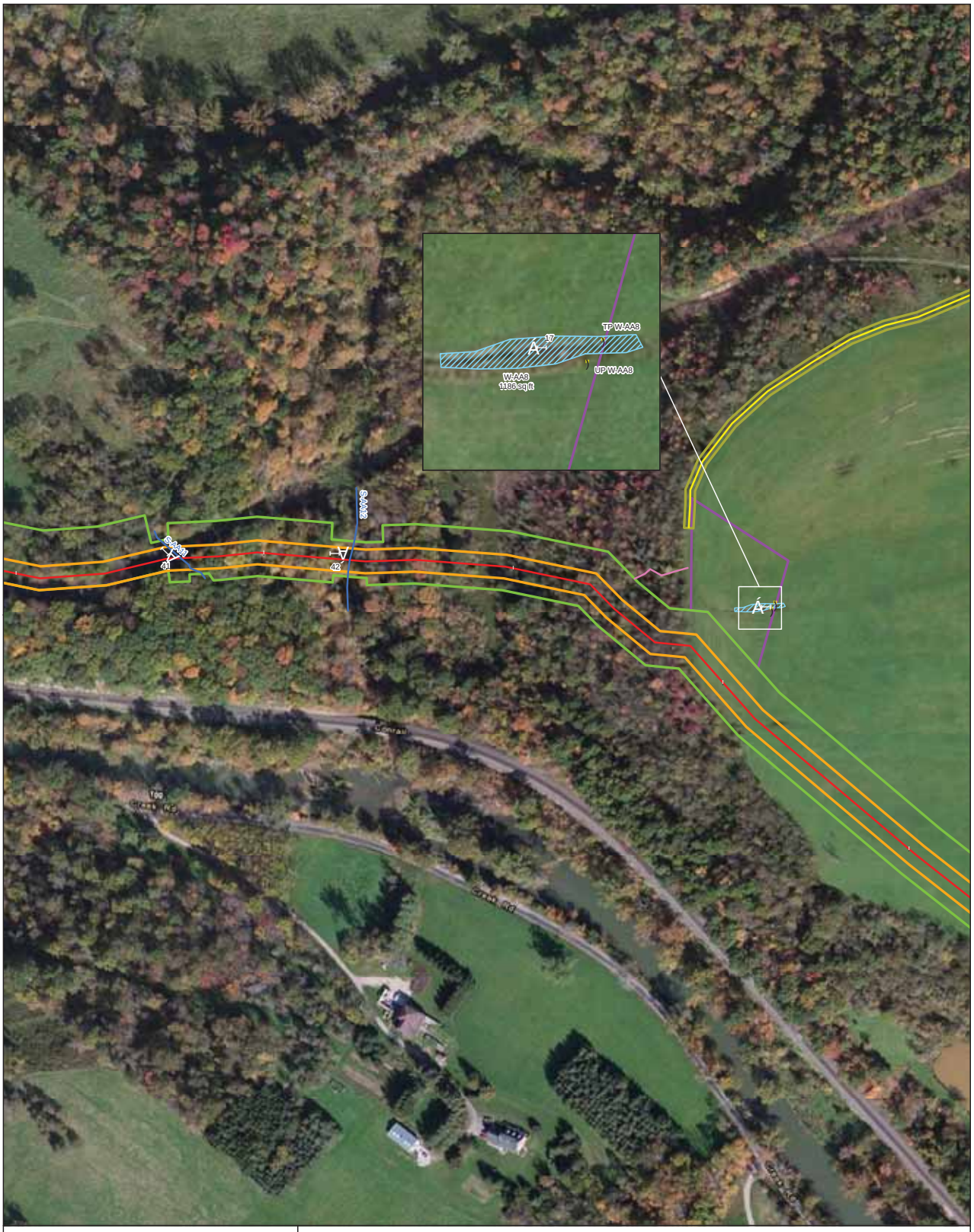


Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS℠

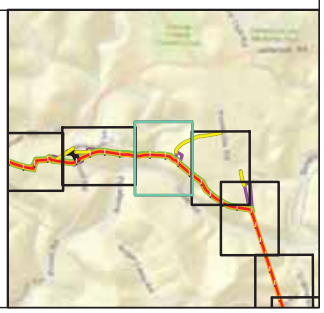
Attachment #: 4-15
USGS Project Location Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station
- Culvert
- Test Pit
- Stream
- Wetland
- Photo Location



Document Path: P:\GIS\EQT\MapDocs\eep_pa_greeneCo_detail.mxd

Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS℠

Attachment #: 4-16
USGS Project Location Map
Greene County, Pennsylvania

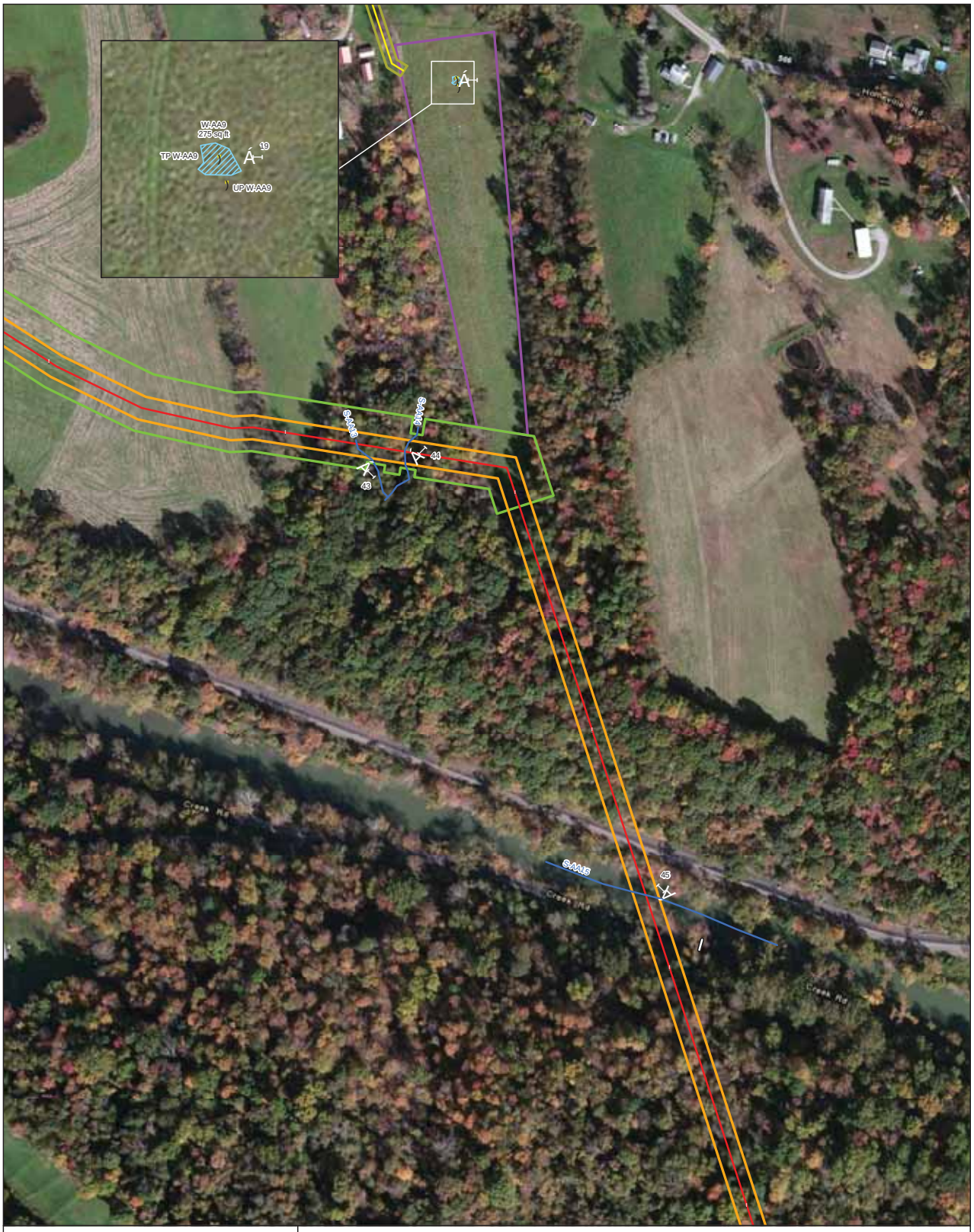
October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station
- Culvert
- Test Pit
- Stream
- Wetland
- Photo Location

Document Path: P:\GIS\EQT\MapDocs\eep_pa_greeneCo_detail.mxd



Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS℠

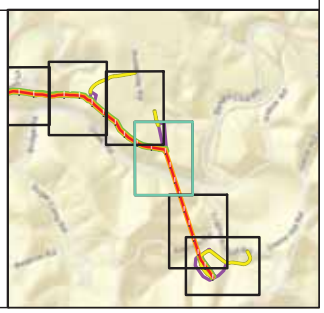
Attachment #: 4-17
USGS Project Location Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station
- Culvert
- Test Pit
- Stream
- Wetland
- Photo Location



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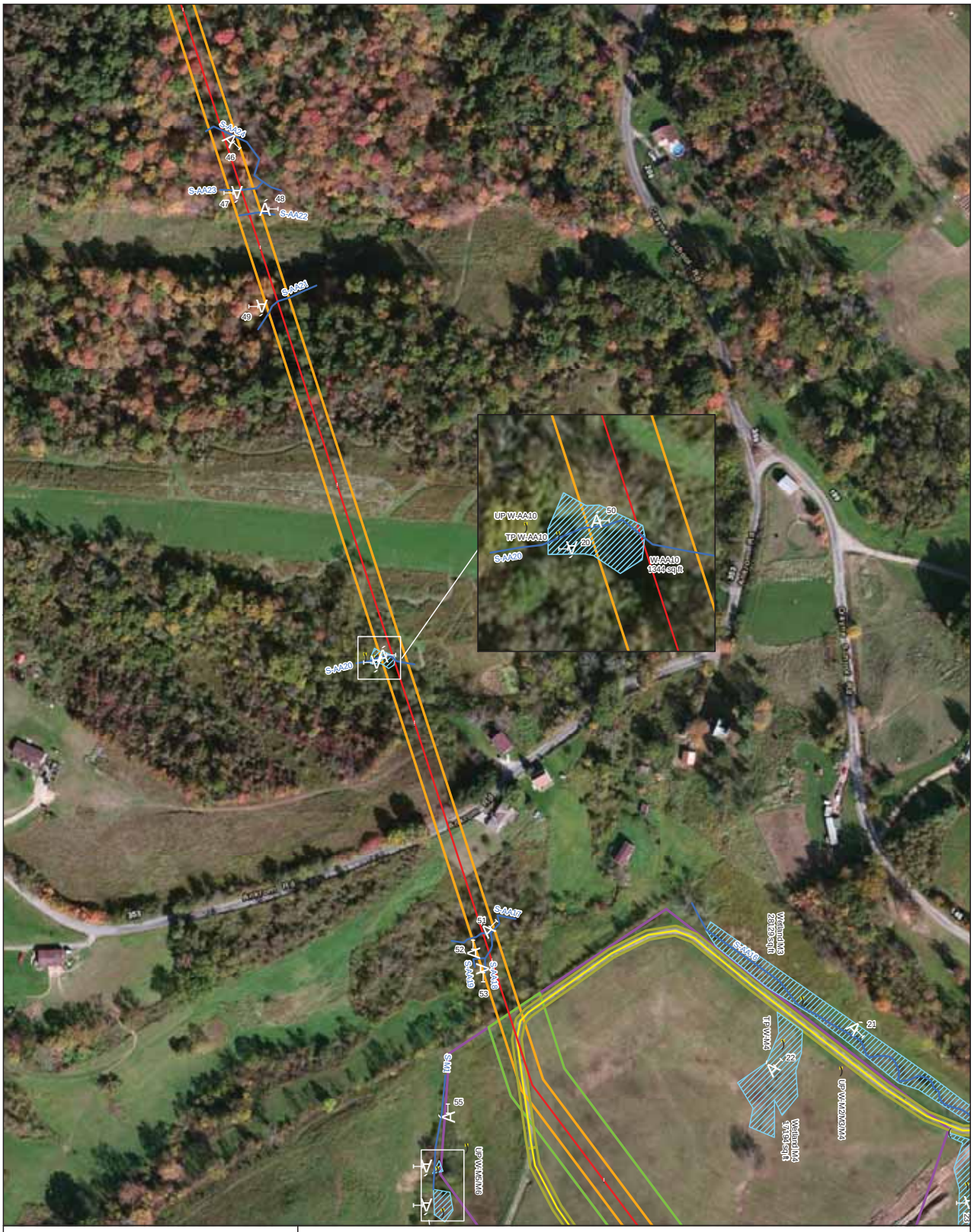


Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS℠

Attachment #: 4-18
USGS Project Location Map
Greene County, Pennsylvania

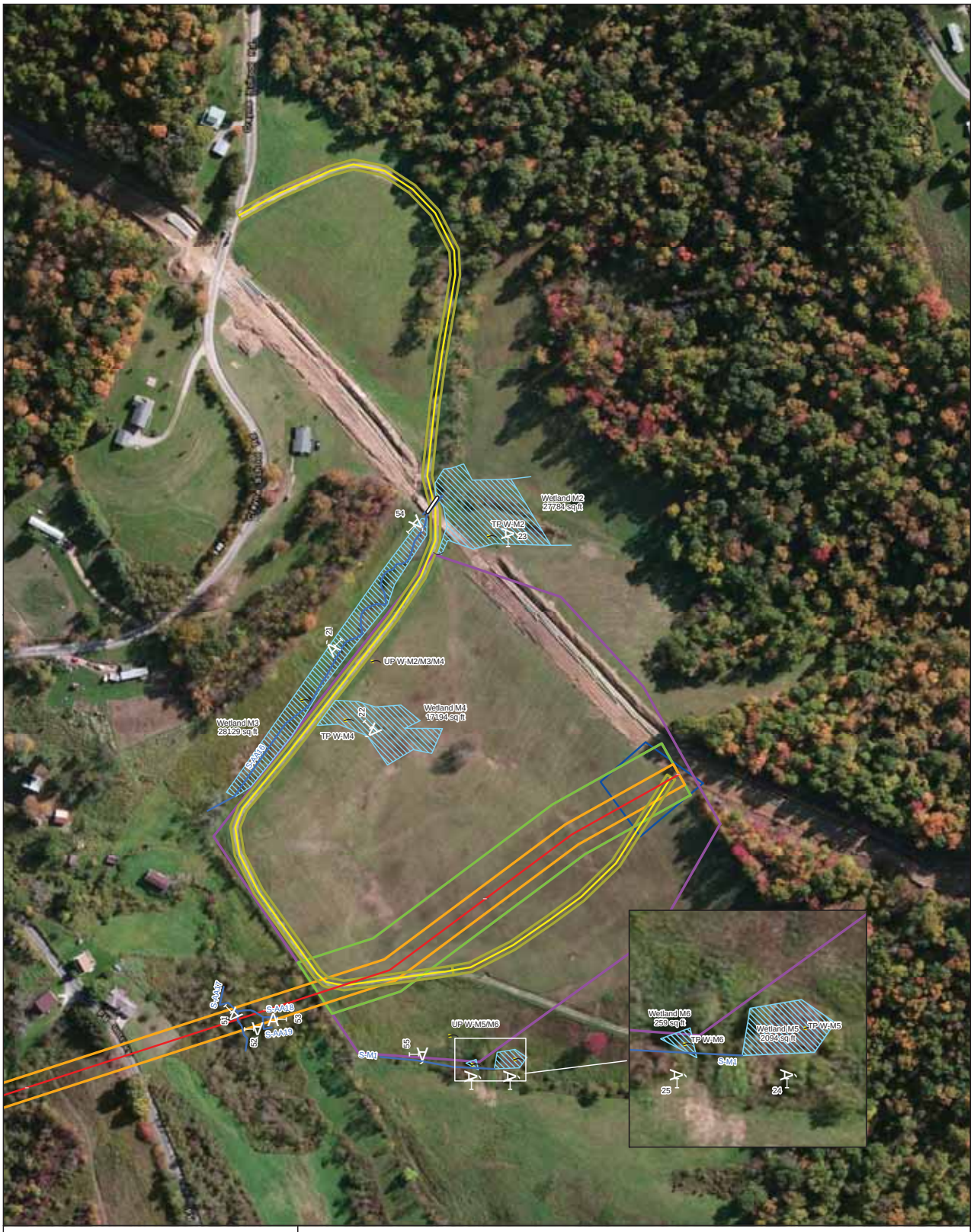
October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station
- Culvert
- Test Pit
- Stream
- Wetland
- Photo Location

Document Path: P:\GIS\EQT\Map\Docs\eep_pa_greeneCo_detail.mxd



Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS

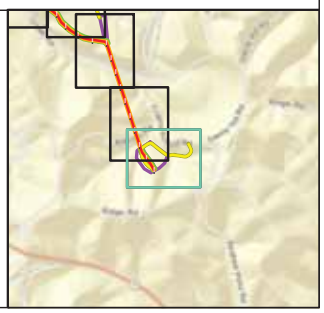
Attachment #: 4-19
USGS Project Location Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station
- Culvert
- Test Pit
- Stream
- Wetland
- Photo Location



Document Path: P:\GIS\EQT\MapDocs\eep_pa_greeneCo_detail.mxd

Equitrans Expansion Project

1:2,400

0 200 400 Feet

EQUITRANS℠

Attachment #: 4-20
USGS Project Location Map
Greene County, Pennsylvania

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Milepost
- Alignment Centerline
- Access Road
- Right-of-Way (Access Road)
- Groundbed
- Permanent Right-of-Way
- Temporary Right-of-Way
- Workspace
- Permanent Site
- Compressor Station
- Culvert
- Test Pit
- Stream
- Wetland
- Photo Location

Document Path: P:\GIS\EQT\MapDocs\eep_pa_greeneCo_detail.mxd

Equitrans Expansion Project

N

1:2,400

0 200 400 Feet

EQUITRANS

Attachment #: 4-21
Wetland Detail Map
Wetzel County, West Virginia

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Tap
- Milepost
- Compressor Station Centroid
- Alignment Centerline
- Workspace
- Temporary Right-of-Way
- Permanent Right-of-Way
- Compressor Station
- Study Area
- Culvert
- Test Pit
- Drainage Feature
- Stream
- Wetland
- Photo Direction

Document Path: P:\GIS\EQT\MapDocs\eep_wv_wetzelCo_detail1.mxd

Equitrans Expansion Project

N

1:2,400

0 200 400 Feet

EQUITRANS

Attachment #: 4-22
Wetland Detail Map
Wetzel County, West Virginia

October 2015

Data Sources: Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

Legend

- Tap
- Milepost
- Compressor Station Centroid
- Alignment Centerline
- Workspace
- Temporary Right-of-Way
- Permanent Right-of-Way
- Compressor Station
- Study Area
- Culvert
- Test Pit
- Drainage Feature
- Stream
- Wetland
- Photo Direction

Document Path: P:\GIS\EQT\MapDocs\esp_wv_wetzelCo_detail2.mxd

APPENDIX A
FIELD DATA SHEETS

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB1-WP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 2-5

Subregion (LRR or MLRA): LRRN Lat: 40.2552747 Long: -079.9666018 Datum: NAD 83

Soil Map Unit Name: Udorthents, smoothed gently sloping NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: Depressional
WT: NRPWW
This location is a former missile location. Soil is mostly fill material, heavily disturbed, with mounds of debris and fill

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB1-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Rumex Crispus	25	✔	FAC
2. Polygonum pensylvanicum	20	✔	FACW
3. Poa pratensis	15	✔	FACU
4. trifolium repens	10		UPL
5. Lolium perenne	10		FACU
6. Solidago altissima	10		FACU
7. seteria faberi	5		UPL
8. Plantago major	5		FACU
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	25	x 3 =	75
FACU species	40	x 4 =	160
UPL species	15	x 5 =	75
Column Totals:	100 (A)		250 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB1-WP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y3/2	100					clay loam	organics/fill material
14-18	10YR4/2	100					clay loam	fill material

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ✔ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

Problematic soils. soils contain fill material and thus soil is not hydric but is disregarded due to recent human impact to soil profile.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/09/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB3-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 3-8%

Subregion (LRR or MLRA): LRRN Lat: 40.25059174070 Long: -79.95944689370 Datum: NAD 83

Soil Map Unit Name: Dormont silt loam 8-15% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): _____
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB3-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Chamerion angustifolium	45	✔	FACU
2. Leucanthum vulgare	10		UPL
3. Trifolium hybridum	5		FACU
4. Oxalis stricta	5		FACU
5. convolvulus arvensis	5		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	5	x 3 =	15
FACU species	55	x 4 =	220
UPL species	10	x 5 =	50
Column Totals:	70 (A)		285 (B)

Prevalence Index = B/A = 4.07

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

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

SOIL Sampling Point: W-BB3-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5YR3/2	100					clay loam	
8-20	10YR4/3	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/09/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB3-WP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): >10

Subregion (LRR or MLRA): LRRN Lat: 3) 40.2506347 Long: -079.9595353 Datum: NAD 83

Soil Map Unit Name: Dormot siltloam 8-15% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: slope
WT: isolate

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 6
Water Table Present?	Yes ✔	No _____	Depth (inches): 14
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 2

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB3-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex vulpinoidea	30	✔	OBL
2. Scirpus atrovirens	20	✔	OBL
3. Alopecurus aequalis	10	✔	OBL
4. Agrostis stolonifera	10	✔	FACW
5. Solidago altissima	5		FACU
6. Rumex crispus	5		FACU
7. Chamerion angustifolium	5		FAC
8. Trifolium hybridum	5		FACU
9. Onoclea sensibilis	3		FACW
10. Asclepias incarnata	2		OBL
11. Asclepias syriaca	5		FAC
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	62	x 1 =	62
FACW species	13	x 2 =	26
FAC species	10	x 3 =	30
FACU species	15	x 4 =	60
UPL species		x 5 =	
Column Totals:	100 (A)		178 (B)

Prevalence Index = B/A = 1.78

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB3-WP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5Y3/2	95	7.5YR 4/6	5	C	M	clay loam	
12-18	10YR3/2	100					clay loam	fine gravel

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: water table

Depth (inches): 14

Hydric Soil Present? Yes ✔ No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB2-WP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): >10

Subregion (LRR or MLRA): LRRN Lat: 40.2495476 Long: -079.9578589 Datum: NAD 83

Soil Map Unit Name: Dormont silt loam 8-15% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Cowardin Code: PEM
HGM: Slope
WT: NRPWW
source of surface water unknown. Could be result of recent rains or spring located at top of hill

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No ____	Depth (inches): 6
Water Table Present?	Yes ✔	No ____	Depth (inches): 5
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 2

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB2-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex vulpinoidea	20	✔	OBL
2. Scirpus atrovirens	20	✔	OBL
3. Rumex Crispus	20	✔	FACU
4. Solidago altissima	15		FACU
5. Asclepias syriaca	15		FAC
6. Calystegia sepium	10		FAC
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	35	x 4 =	140
UPL species		x 5 =	
Column Totals:	100 (A)		215 (B)

Prevalence Index = B/A = 2.15

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB2-WP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-1	2.5Y3/1	100					muck	
1-5	2.5Y3/1	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ✔ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: water table

Depth (inches): 5

Hydric Soil Present? Yes ✔ No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/09/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB2-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): sideslope Local relief (concave, convex, none): linear Slope (%): 3-8%

Subregion (LRR or MLRA): LRRN Lat: 40.24951600180 Long: -79.95775845020 Datum: NAD 83

Soil Map Unit Name: Dormont silt loam, 8-15% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): _____
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB2-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Chamerion angustifolium	45	✔	FAC
2. Trifolium repens	15		FACU
3. Rubus trivialis	10		FACU
4. Achillea millefolium	5		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species 45	x 3 = 135
FACU species 30	x 4 = 120
UPL species	x 5 =
Column Totals: 75 (A)	255 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL

Sampling Point: W-BB2-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR3/2	100					clay loam	organic
12-18	10YR5/4	100					clay loam	red/gray mottles

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/13/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB13

Investigator(s): A Lands, S Cowell, T Caddy, Section, Township, Range: NA

Landform (hillslope, terrace, etc.): toeslope/depression Local relief (concave, convex, none): concave Slope (%): <5

Subregion (LRR or MLRA): LRRN Lat: 40.238567 Long: -79.944506 Datum: NAD 83

Soil Map Unit Name: Urban land-Rainsboro complex, gently sloping NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil ✔, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
PFO/PSS
Depressional
RPWWD
large depressional area located between RR tracks and roadway. Some saturation present, soil is predominantly coal,

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ✔ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): _____
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
some areas are saturated, however no H2S odor was detected.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB13

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	10	✔	FAC
2. Acer rubrum	10	✔	FAC
3.			
4.			
5.			
6.			
7.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Sapling/Shrub Stratum (Plot size: 15')			
1. Ligustrum sinense	5	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5')			
1. Pilea pumila	15	✔	FACW
2. Podophyllum peltatum	10	✔	FACU
3. Urtica dioica	5	✔	FACU
4. Microstegium vimineum	5	✔	FAC
5. Impatiens pallida	5	✔	FACW
6. Athyrium felix-femina	2		FAC
7. Potentilla simplex	2		FACU
8. Gallium asprellum	2		OBL
9. Onoclea sensibilis	2		OBL
10. Oxalis stricta	2		FACU
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 15')			
1. Toxicodendron radicans	5	✔	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	4	x 1 =	4
FACW species	20	x 2 =	40
FAC species	36	x 3 =	108
FACU species	24	x 4 =	96
UPL species		x 5 =	
Column Totals:	84 (A)		248 (B)

Prevalence Index = B/A = 2.95

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB13

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	10YR3/2	100					clay loam	fill gravel washed from road
3-16	10YR3/1	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ✔ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

Wetland situated on soil derived from dark coal floodplain. NRCS soil map unit name is urban land-Rainsboro complex, gently sloping (URB). Soil listed as hydric.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/13/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB13-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): convex Slope (%): 3-5

Subregion (LRR or MLRA): LRRN Lat: 40.23873789560 Long: -79.94489288190 Datum: NAD 83

Soil Map Unit Name: Urban land-Rainsboro complex sloping NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil ✔, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): _____
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB13-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	10	✔	FAC
2. Acer rubrum	10	✔	FAC
3.			
4.			
5.			
6.			
7.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Impatiens pallida	15	✔	FACW
2. Urtica dioica	15	✔	FACU
3. Cardamine dyphalla	10		FACU
4. Anemone virginiana	5		FACU
5. Podophyllum peltatum	5		FACU
6. Microstegium vimineum	5		FAC
7. Athyrium felix-femina	2		FAC
8.			
9.			
10.			
11.			
	57 = Total Cover		
50% of total cover: 28.5	20% of total cover: 11.4		
Woody Vine Stratum (Plot size: 15')			
1. Toxicodendron radicans	5	✔	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species	15	x 2 =	30
FAC species	32	x 3 =	96
FACU species	35	x 4 =	140
UPL species		x 5 =	
Column Totals:	82 (A)		266 (B)

Prevalence Index = B/A = 3.24

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB13-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	10YR4/1	100					clay loam	
4-16	10YR6/3	100					sand	fill material (near railroad berm)

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ✔ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

situated on soil derived from dark coal floodplain. NRCS soil map unit name is urban land-Rainsboro complex, gently sloping (URB).

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB11-WP

Investigator(s): A Lands, S Cowell, T Caddy, J Akalaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope (%): <10

Subregion (LRR or MLRA): LRRN Lat: 40.2368791 Long: -079.9457451 Datum: NAD 83

Soil Map Unit Name: Strip mines 25-75% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Cowardin Code: PFO
HGM: slope
WT: RPWWN

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB11-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	30	✔	FAC
2. Fagus grandifolia	10	✔	FACU
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Sapling/Shrub Stratum (Plot size: 15')			
1. Acer rubrum	40	✔	FAC
2. Lonicera sp.	10		FAC
3. Fagus grandifolia	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Herb Stratum (Plot size: 5')			
1. Pilea pumila	60	✔	FACW
2. Athyrium felix-femina	5		FAC
3. Anemone virginiana	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	25	x 3 =	75
FACU species	15	x 4 =	60
UPL species		x 5 =	
Column Totals:	100 (A)		255 (B)

Prevalence Index = B/A = 2.55

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB11-WP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR3/1	100					clay loam	muck/organic
1-18	10YR4/3	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ✔ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

H2S odor slight

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB11-WP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hillside Local relief (concave, convex, none): none Slope (%): >5

Subregion (LRR or MLRA): LRRN Lat: 40.23685127460 Long: -79.94571985080 Datum: NAD 83

Soil Map Unit Name: Strip mines 25-75% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): _____
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB11-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	20	✔	FAC
2. Fagus grandifolia	15		FACU
3.			
4.			
5.			
6.			
7.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Podophyllum peltatum	15	✔	FACU
2. Pilea pumila	10		FACW
3. Anemone virginiana	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 15')			
1. Rubus pensylvanicus	10	✔	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species	10	x 2 =	20
FAC species	30	x 3 =	90
FACU species	35	x 4 =	140
UPL species		x 5 =	
Column Totals:	75 (A)		250 (B)

Prevalence Index = B/A = 3.33

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL

Sampling Point: W-BB11-WP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR2.5/2	100					clay loam	organic
4-16	10YR4/3	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB10-WP

Investigator(s): A Lands, S Cowell, T Caddy, J Akalaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope (%): <5

Subregion (LRR or MLRA): LRRN Lat: 40.2335633 Long: -079.9437277 Datum: NAD 83

Soil Map Unit Name: Strip mines, 8-25% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Cowardin Code: PFO
HGM: slope
WT: NRPWW

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No ____	Depth (inches): 8
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
Skippers observed

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB10-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	25	✔	FAC
2. Fagus grandifolia	10	✔	FACU
3.			
4.			
5.			
6.			
7.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Sapling/Shrub Stratum (Plot size: 15')			
1. Lonicera sp.	10	✔	FAC
2. Acer rubrum	10	✔	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5')			
1. Microstegium vimenium	20	✔	FAC
2. Pilea pumila	10	✔	FACW
3. Dicanthelium clandestinum	10	✔	FAC
4. Athyrium felix-femina	5		FAC
5. Solidago altissima	5		FACU
6. Gallium asprellum	3		OBL
7. Anemone virginiana	2		FACU
8.			
9.			
10.			
11.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 15')			
1. Rubus pensylvanicum	5	✔	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	3
FACW species	10	x 2 =	20
FAC species	60	x 3 =	180
FACU species	12	x 4 =	48
UPL species		x 5 =	
Column Totals:	85 (A)		251 (B)

Prevalence Index = B/A = 2.95

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB10-WP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/2	95	7.5YR 4/6	5	C	M	clay loam	
6-18	10YR5/4	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB10-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): none Slope (%): 2-4

Subregion (LRR or MLRA): LRRN Lat: 40.23353475400 Long: -79.94372414120 Datum: NAD 83

Soil Map Unit Name: Strip mine 8-25% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): _____
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB10-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Fagus grandifolia	20	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Sapling/Shrub Stratum (Plot size: 15')			
1. Lonicera Sp.	15	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 5')			
1. Microstegium vimenium	20	✔	FAC
2. Podophyllum peltatum	15		FACU
3. Anemone virginiana	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	35	x 3 =	105
FACU species	40	x 4 =	160
UPL species		x 5 =	
Column Totals:	80 (A)		265 (B)

Prevalence Index = B/A = 3.31

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB10-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-1	10YR3/2	100					clay loam	organic
1-16	10YR4/2	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB9-WP

Investigator(s): A Lands, S Cowell, T Caddy, J Akalaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2-4

Subregion (LRR or MLRA): LRRN Lat: 40.2332639 Long: -079.9434972 Datum: NAD 83

Soil Map Unit Name: Strip mine, 8-25% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PFO
HGM: Depressional
WT: NRPWW

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✔ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ✔ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 6
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:
Skippers, crawfish, frogs observed

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB9-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	20	✔	FAC
2. Fagus grandifolia	15	✔	FACU
3.			
4.			
5.			
6.			
7.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Sapling/Shrub Stratum (Plot size: 5')			
1. Lonicera Sp.	10	✔	ND
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5')			
1. Podolphyllum peltatum	15	✔	FACU
2. Onoclea sensibilis	10	✔	FACW
3. Microstegium vimenium	10	✔	FAC
4. Gallium asprellum	5		OBL
5. Anemone virginiana	5		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	10	x 2 =	20
FAC species	35	x 3 =	105
FACU species	35	x 4 =	140
UPL species		x 5 =	
Column Totals:	85 (A)		270 (B)

Prevalence Index = B/A = 3.18

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

ND - Not Determined.

* Vegetation not ID'd to species level not included in dominance test.

SOIL Sampling Point: W-BB9-WP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR4/1	95	7.5YR 4/6	50%	C	M	clay loam	organic
8-18	10YR5/6	100					loamy clay	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB9-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): none Slope (%): 2-4

Subregion (LRR or MLRA): LRRN Lat: 40.23320910830 Long: -79.94352205020 Datum: NAD 83

Soil Map Unit Name: Strip mines 8-25% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): _____
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB9-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	20	✔	FAC
2. Fagus grandifolia	10		FACU
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Sapling/Shrub Stratum (Plot size: 15')			
1. Lonicera sp.	15	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 5')			
1. Podophyllum peltatum	15	✔	FACU
2. Anemone virginiana	5		FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species 35	x 3 = 105
FACU species 30	x 4 = 120
UPL species	x 5 =
Column Totals: 65 (A)	225 (B)

Prevalence Index = B/A = 3.46

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB9-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/2	100					clay loam	
6-18	10YR5/6	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB8-WP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): none Slope (%): >10

Subregion (LRR or MLRA): LRRN Lat: 40.2329197 Long: -079.9423036 Datum: NAD 83

Soil Map Unit Name: Strip mines, 25-75% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** **Yes** ✓ **No** ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Cowardin Code: PFO
HGM: Slope
WT: NRPWW

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✓ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): ____

Wetland Hydrology Present? **Yes** ✓ **No** ____

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

Remarks:
slight H2S odor

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB8-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	10	✓	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Sapling/Shrub Stratum (Plot size: 15')			
1. Lonicera sp.	10	✓	ND
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5')			
1. Pilea pumila	30	✓	FACW
2. microstegium vinemeum	10		FAC
3. Onoclea sensibilis	10		FACW
4. Gallium asprellum	5		OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 15')			
1. Rubus pensylvanicum	10	✓	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	40	x 2 =	80
FAC species	40	x 3 =	120
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	85 (A)		205 (B)

Prevalence Index = B/A = 2.41

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ✓ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

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

SOIL Sampling Point: W-BB8-WP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR4/2	100					clay loam	organic
8-16	10YR5/6	100					CL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

Strip mines, 25-75% slope

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB8-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): plateau Local relief (concave, convex, none): concave Slope (%): 2-4

Subregion (LRR or MLRA): LRRN Lat: 40.23287489100 Long: -79.94221357790 Datum: NAD 83

Soil Map Unit Name: Strip mines 25-45% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB8-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	20	✓	FAC
2. Fagus grandifolia	15		FACU
3.			
4.			
5.			
6.			
7.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Sapling/Shrub Stratum (Plot size: 15')			
1. Lonicera sp	15	✓	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 5')			
1. Athyrium felix-femina	10	✓	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	45	x 3 =	135
FACU species	15	x 4 =	60
UPL species		x 5 =	
Column Totals:	60 (A)		195 (B)

Prevalence Index = B/A = 3.25

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

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

SOIL Sampling Point: W-BB8-UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/3	100					clay loam	organic
4-18	10YR3/3	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB7-WP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): _____ Slope (%): <5

Subregion (LRR or MLRA): LRRN Lat: 40.2306361 Long: -079.9359447 Datum: NAD 83

Soil Map Unit Name: Rainsboro silt loam 3-8% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: slope
WT: NRPWW
location of former strip mine, remediated. Surface riddled with "potholes" of varying sizes, all filled with water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 6
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 2

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB7-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 10')			
1. Agrostis stolonifera	25	✔	FACW
2. Carex stipata	10	✔	OBL
3. Juncus tenuis	10	✔	FAC
4. Chamerion angustifolium	5		FAC
5. Alopecurus aequalis	5		OBL
6. Solanum carolinense	2		FACU
7. Calystegia pubescens	2		FACU
8. Hypericum perforatum	1		FAC
9. Gallium asprellum	1		OBL
10. Convolvulus arvensis	2		UPL
11. Asclepias syriaca	2		FACU
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Woody Vine Stratum (Plot size: 10')			
1. Toxicodendron radicans	10	✔	FAC
2. Rubus pensylvanicus	10	✔	FAC
3.			
4.			
5.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	16	x 1 =	16
FACW species	25	x 2 =	50
FAC species	36	x 3 =	108
FACU species	6	x 4 =	24
UPL species	2	x 5 =	10
Column Totals:	85 (A)		208 (B)

Prevalence Index = B/A = 2.44

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB7-WP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/3	100					clay loam	organic
6-18	10YR5/4	95	2.5YR 4/6	5			loamy clay	red mottles

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

Rainsboro silt loam 3-8% slope

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB7-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): plateau Local relief (concave, convex, none): concave Slope (%): 3-5

Subregion (LRR or MLRA): LRRN Lat: 40.23057348320 Long: -79.93577201000 Datum: NAD 83

Soil Map Unit Name: Rainsboro silt loam, 3-8% NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB7-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Agrostis stolonifera	35	✓	FACW
2. Chamerion angustifolium	15		FAC
3. Convolvulus arvensis	5		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 15')			
1. Rubus pensylvanicus	10	✓	FAC
2. Toxicodendron radicans	5		FAC
3.			
4.			
5.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species	35	x 2 =	70
FAC species	35	x 3 =	105
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	70 (A)		175 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ✓ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

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

SOIL

Sampling Point: W-BB7-UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR4/3						clay loam	organic
5-20	10YR5/3						loamy clay	red/gray mottles

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB6-WP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): none Slope (%): <8

Subregion (LRR or MLRA): LRRN Lat: 40.2295701 Long: -079.9346449 Datum: NAD 83

Soil Map Unit Name: Culleoka-Weikert Shaly silt loams NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Cowardin Code: PEM
HGM: slope
WT: RPWWN
location of former strip mine, remediated. Surface riddled with "potholes" of varying sizes, all filled with water.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✔ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No ____	Depth (inches): 7
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 2

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:
very slight H2S odor

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB6-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Agrostis stolonifera	55	✔	FACW
2. juncus tenuis	10		FAC
3. Chamerion angustifolium	5		FAC
4. Alopecurus aequalis	5		OBL
5. sorghum halepense	5		FACU
6. convolvulus arvensis	5		UPL
7.			
8.			
9.			
10.			
11.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Woody Vine Stratum (Plot size: 5')			
1. Toxicodendron radicans	5	✔	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	55	x 2 =	110
FAC species	20	x 3 =	60
FACU species	5	x 4 =	20
UPL species	5	x 5 =	25
Column Totals:	90 (A)		220 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ✔ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

mostly reclaimed vegetation

SOIL Sampling Point: W-BB6-WP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR4/3	100					LC	organic
5-20	10YR4/2	95	2.5YR 4/6	5	C	M	LC	red/gray mottles

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

Culleoka-Weikert Shaly silt loams

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB6-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): plateau Local relief (concave, convex, none): concave Slope (%): 2-5

Subregion (LRR or MLRA): LRRN Lat: 40.22963424210 Long: -79.93481801570 Datum: NAD 83

Soil Map Unit Name: Culleoka-weikert shaly silt loams, 1-15% NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB6-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Asclepias lanceolata	10	✓	FACU
2. Daucus carota	10		FACU
3. Convolvulus arvensis	5		FACU
4. toxicodendron radicans	5		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 15')			
1. Rubus pensylvanicus	15	✓	FAC
2.			
3.			
4.			
5.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	
FACW species	0	x 2 =	
FAC species	20	x 3 =	60
FACU species	25	x 4 =	100
UPL species		x 5 =	
Column Totals:	45 (A)		160 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

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

SOIL

Sampling Point: W-BB6-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR4/3	100					CL	
7-12	10YR4/4	100					CL	
12-16	2.5Y5/2	100					CL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/13/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB12-WP

Investigator(s): A Lands, S Cowell, T Caddy, Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): <10

Subregion (LRR or MLRA): LRRN Lat: 40.2260 Long: -79.9287 Datum: NAD 83

Soil Map Unit Name: Dormont silt loam, 3-8% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
PEM
slope
isolate
surface disturbed by heavy equipment

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✔ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✔ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No ____	Depth (inches): 4
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB12-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Scirpus atrovirens	50	✔	OBL
2. Juncus tenuis	15		FAC
3. Trifolium repens	10		FACU
4. Trifolium hybridum	10		FACU
5. Polygonum pensylvanicum	5		FACW
6. microstegium vimineum	5		FAC
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	5	x 2 =	10
FAC species	15	x 3 =	45
FACU species	20	x 4 =	80
UPL species		x 5 =	
Column Totals:	90 (A)		185 (B)

Prevalence Index = B/A = 2.06

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB12-WP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y4/2	95	7.5YR 5/4	5	C	M	clay loam	
6-12	2.5Y4/1	95	7.5YR 5/4	5	C	M	loamy clay	
12-18	2.5Y4/2	100					loamy clay	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

Dormont silt loam, 3-8% slopes

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/13/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB12-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy Section, Township, Range: NA

Landform (hillslope, terrace, etc.): sideslope Local relief (concave, convex, none): linear Slope (%): 6-10

Subregion (LRR or MLRA): LRRN Lat: 40.22588000040 Long: -79.92900000030 Datum: NAD 83

Soil Map Unit Name: Dormont silt loam 15-25% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil ✓, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB12-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Trifolium repens	35	✓	FACU
2. Trifolium hybridum	10		FACU
3. Lolium perenne	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species 50	x 4 =	200
UPL species	x 5 =	
Column Totals: 50 (A)		200 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

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

SOIL

Sampling Point: W-BB12-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5Y4/4	100					clay loam	loamy clay

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB5-WP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): toe slope Local relief (concave, convex, none): none Slope (%): 3-5

Subregion (LRR or MLRA): LRRN Lat: 40.2491980 Long: -079.9294342 Datum: NAD 83

Soil Map Unit Name: Glenford silt loam, 3-8% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil ✔, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: depressional
WT: RPWWN
man made obstructions present, mostly fill material

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 5
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB5-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Scirpus atrovirens	20	✔	OBL
2. Juncus tenuis	15	✔	FAC
3. Dichanthelium clandestinum	15	✔	FAC
4. Carex cristatella	10		FACW
5. agrostis stolonifera	10		FACW
6. Chamerion angustifolium	10		FAC
7. rumex crispus	5		FAC
8.			
9.			
10.			
11.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	20	x 2 =	40
FAC species	45	x 3 =	135
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	85 (A)		195 (B)

Prevalence Index = B/A = 2.29

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB5-WP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y4/2	50					clay loam	
0-6	Gley 4/10Y	50					clay loam	
6-12	2.5Y5/4	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ✔ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

Glenford silt loam, 3-8% slope
fill material present

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Allegheny County Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB5-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): valley bottom Local relief (concave, convex, none): none Slope (%): 2-4

Subregion (LRR or MLRA): LRRN Lat: 40.24917854360 Long: -79.92963309210 Datum: NAD 83

Soil Map Unit Name: Udortents smoothed, gently sloping NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB5-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Chamerion angustifolium	20	✓	FAC
2. Artemesia vulgaris	15	✓	UPL
3. Daucus carota	10		FACU
4. Dipascus fullonum	10		FACU
5. Mellilotus albus	10		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	20	x 3 =	60
FACU species	30	x 4 =	120
UPL species	15	x 5 =	75
Column Totals:	65 (A)		255 (B)

Prevalence Index = B/A = 3.92

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

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

SOIL Sampling Point: W-BB5-UP

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR3/3	100					clay loam	
2-16	10YR4/3	100					clay loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB4-WP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 40.2542043 Long: -079.9262158 Datum: NAD 83

Soil Map Unit Name: Dormant-Culleoka Complex 15-25% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ✔, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Cowardin Code: PEM
HGM: isolated
WT: Depressional
located behind gas station. UST's are present as well as man made obstructions

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ✔ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No ____ Depth (inches): <5

Water Table Present? Yes ____ No ✔ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ✔ Depth (inches): ____

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB4-WP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. carex stipata	40	✔	OBL
2. juncus tenuis	20	✔	FAC
3. agrostis stolonifera	15		FACW
4. Chloris virgata	10		FAC
5. trifolium hybridum	5		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	15	x 2 =	30
FAC species	30	x 3 =	90
FACU species	5	x 4 =	20
UPL species		x 5 =	
Column Totals:	90 (A)		180 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ✔ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-BB4-WP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR3/2	95	7.5YR 4/6	5	C	M	clay loam	
5-18	10YR4/3	100					clay loam	fill material w/ coarse gravel

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ____

Remarks:

Dormant-Culleoka Complex 15-25% slopes, mostly fill material

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Washington County Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-BB4-UP

Investigator(s): A. Lands, S. Cowell, T. Caddy, J. Aklaku Section, Township, Range: NA

Landform (hillslope, terrace, etc.): terraced hillslope Local relief (concave, convex, none): concave Slope (%): 3-8%

Subregion (LRR or MLRA): LRRN Lat: 40.25399999960 Long: -79.92622000020 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 15-15% slope NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-BB4-UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Trifolium hybridum	15	✓	FACU
2. Cichorium intybus	10	✓	FACU
3. oxalis stricta	5		FACU
4. plantago major	5		FACU
5. Coronilla varia	5		FAC
6. lotus corniculatus	5		FACU
7. plantago lanceolata	5		FACU
8. taraxacum officianale	5		FACU
9.			
10.			
11.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	5	x 3 =	15
FACU species	50	x 4 =	200
UPL species		x 5 =	
Column Totals:	55 (A)		215 (B)

Prevalence Index = B/A = 3.91

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

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

SOIL Sampling Point: W-BB4-UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR4/2	100					clay loam	
6-20	10YR4/3	100					clay loam	fill material w/ coarse gravels

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Red Hook Compressor Station City/County: Greene Sampling Date: 06/09/2015

Applicant/Owner: EQT State: PA Sampling Point: W-N1

Investigator(s): JH, LM, JK Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR or MLRA): LRRN Lat: 39.91772914740 Long: -80.13069448700 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 4

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-N1

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Juncus effusus	70	✓	FACW
2. Asclepias incarnata	10		OBL
3. Carex lurida	5		OBL
4. Phalaris arundinaceae	2		FACW
5. Carex vulpinoidea	10		OBL
6. Impatiens capensis	5		FACW
7.			
8.			
9.			
10.			
11.			
	102 = Total Cover		
50% of total cover: 51	20% of total cover: 20.4		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

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

SOIL Sampling Point: W-N1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-17	10YR 5/2	80	10YR 6/8	10		M	SC	
			10YR 6/1	10	D	M		

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Red Hook Compressor Station City/County: Greene Sampling Date: 06/09/2015

Applicant/Owner: EQT State: PA Sampling Point: W-N1 UP

Investigator(s): JH, LM, JK Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 5

Subregion (LRR or MLRA): LRRN Lat: 39.91777586110 Long: -80.13079854330 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-N1 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Solidago altissima	30	✔	FACU
2. Trifolium pratense	5		FACU
3. Trifolium aureum	25	✔	UPL
4. Allium sp.	2		
5. Lotus corniculatus	10		FACU
6. Galium aparine	10		FACU
7. Melilotus officinalis	2		FACU
8.			
9.			
10.			
11.			
	84 = Total Cover		
50% of total cover: 42	20% of total cover: 16.8		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

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

SOIL Sampling Point: W-N1 UP

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-19	10YR 6/2	100					SC	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA1

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR or MLRA): LRRN Lat: 39.91576824580 Long: -80.13133243640 Datum: NAD 83

Soil Map Unit Name: Newark silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:

Cowardin Code: PEM
HGM: Riverine
WT: RPWWD
Large mound in middle of wetland. S-AA2 feeds W-AA1. Stream is dammed by road creating wetland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ✔	No ____	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 0-10

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:

Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA1

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1. Platanus occidentalis	5	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5')			
1. Carex vulpinoidea	60	✔	OBL
2. Scirpus cyperinus	20		FACW
3. Scirpus atrovirens	5		OBL
4. Eupatorium perfoliatum	20		FACW
5. Agrimonia parviflora	15		FACW
6. Solidago gigantea	5		FACW
7. Amphicarpaea bracteata	30	✔	FAC
8. Dipsacus laciniatus	5		FACU
9.			
10.			
11.			
	160 = Total Cover		
50% of total cover: 80	20% of total cover: 32		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

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

SOIL Sampling Point: W-AA1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 4/2	100					SCL	
3-10	10YR 5/1	93	10YR 3/6	2	RM	M/PL	SCL	
3-10	10YR 4/2	5						
10-20	10YR 5/6	100					SCL	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA1 UP

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5

Subregion (LRR or MLRA): LRRN Lat: 39.91589062750 Long: -80.13158042460 Datum: NAD 83

Soil Map Unit Name: Newark silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✔	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ____	No ✔	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:
Upland
Heavy rainfall for 4 days before and during surveys. Several streams in survey area were flooded.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA1 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Erigeron annuus	15		FACU
2. Potentilla indica	30	✔	FACU
3. Trifolium pratense	10		FACU
4. Daucus carota	15		UPL
5. Alliaria petiolata	5		FACU
6. Carex sp.	30	✔	ND
7. Ranunculus sp.	5		ND
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	60	x 4 =	240
UPL species	15	x 5 =	75
Column Totals:	75 (A)		315 (B)

Prevalence Index = B/A = 4.2

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND- Not determined.

SOIL Sampling Point: W-AA1 UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-19	10YR 4/2	85					SCL	
	10YR 5/3	10						
	10YR 8/6	5						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA5

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope/depression Local relief (concave, convex, none): None Slope (%): 5

Subregion (LRR or MLRA): LRRN Lat: 39.91355442740 Long: -80.12824347210 Datum: NAD 83

Soil Map Unit Name: Dekalb channery loam, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: Isolate
WT: RPWWN

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes ✔	No _____	Depth (inches): 1
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA5

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Poa sp.	80	✔	ND
2. Phalaris arundinacea	10		FACW
3. Poa trivialis	10		FACW
4. Daucus carota	5		UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	105 = Total Cover		
50% of total cover: 52.5	20% of total cover: 21		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

✔ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

Wetland with problematic hydrophytic vegetation Wetland is adjacent to Pratt Compressor Station (industrial area.) Ajacent drainage does not have bed or bank to make it a stream. Wetland fed by groundwater and rain events making it a slope wetland. Upland soils north and east of the wetland make it isolate.

ND - Not Determined.

* Vegetation not ID'd to species level not included in dominance test.

SOIL Sampling Point: W-AA5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-17	2.5Y 5/1	70	10YR 5/6	10	D	M	SC	
0-17	7.5YR 3/1	20						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA5 UP

Investigator(s): JH, LM, LS, CL Section, Township, Range: NAD 83

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5

Subregion (LRR or MLRA): LRRN Lat: 39.91360410120 Long: -80.12826299710 Datum: NAD 83

Soil Map Unit Name: Dekalb channery loam, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Hydric soil is present but lack of hydrology and vegetation makes this an upland sample plot.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA5 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Lotus corniculatus	40	✔	FACU
2. Dipsacus laciniatus	50	✔	UPL
3. Securigera varia	20		UPL
4. Cirsium arvense	5		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	115 = Total Cover		
50% of total cover: 57.5	20% of total cover: 23		
Woody Vine Stratum (Plot size: 15')			
1. Vitis riparia	5	✔	FACW
2.			
3.			
4.			
5.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	45	x 4 =	180
UPL species	70	x 5 =	350
Column Totals:	120 (A)		540 (B)

Prevalence Index = B/A = 4.5

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-AA5 UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-19	7.5YR4/2	95	10 YR5/6	5	C	M	SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

Hydric soil but no hydrology or hydrophytic dominant vegitation.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA6

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope/Depression Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR or MLRA): LRRN Lat: 39.91389543370 Long: -80.12716311240 Datum: NAD 83

Soil Map Unit Name: Huntington silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: Isolated
WT: RPWWN
Groundwater from W-AA6 flows into S-AA5

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes ✔	No _____	Depth (inches): 3
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA6

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	50	✔	FACW
2. Typha angustifolia	35	✔	OBL
3. Juncus effusus	5		FACW
4. Poa trivialis	20		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: W-AA6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-19	10YR 5/2	75	10YR 3/6	25	C	M/PL	SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA6 UP

Investigator(s): Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 8

Subregion (LRR or MLRA): LRRN Lat: 39.91399666630 Long: -80.12721311840 Datum: NAD 83

Soil Map Unit Name: Huntington silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✔

Are Vegetation _____, Soil _____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rainfall for 4 days before and during surveys. No water table or saturation 0-20." No other hydrology indicators present.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA6 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Ulmus rubra	8	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	8 = Total Cover		
50% of total cover: 4	20% of total cover: 1.6		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Cirsium arvense	60	✔	FACU
2. Phalaris arundinacea	40	✔	FACW
3. Apocynum cannabinum	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: W-AA6 UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-19	10YR 4/1	60					SCL	
	2.5Y 5/3	40						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA2

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 5

Subregion (LRR or MLRA): LRRN Lat: 39.91616667970 Long: -80.12612322510 Datum: NAD 83

Soil Map Unit Name: Dumps, mine NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✔	No ____	Depth (inches): 0
Water Table Present?	Yes ✔	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): ____

Wetland Hydrology Present? Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA2

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1. Fraxinus pennsylvanica	8	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	8 = Total Cover		
50% of total cover: 4	20% of total cover: 1.6		
Herb Stratum (Plot size: 5')			
1. Carex lurida	80	✔	OBL
2. Agrimonia parviflora	10		FACW
3. Microstegium vimineum	20		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: W-AA2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 4/1	93					SC	
9-19	10YR 4/1	98	10YR 5/6	7	C	M/PL	SC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA2 UP

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 10

Subregion (LRR or MLRA): LRRN Lat: 39.91628509170 Long: -80.12603265380 Datum: NAD 83

Soil Map Unit Name: Dumps, mine NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Cowardin Code:
HGM:
WT:
Heavy rainfall for 4 days before and during surveys. Several streams in survey area were flooded.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA2 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Aesculus octandra	30	✓	FACU
2. Robinia pseudoacacia	30	✓	FACU
3. Acer rubrum	10		FAC
4. Quercus rubra	30	✓	FACU
5.			
6.			
7.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Sapling/Shrub Stratum (Plot size: 15')			
1. Fraxinus americana	10		FACU
2. Prunus americana	40	✓	FACU
3. Sassafras albidum	15	✓	FACU
4. Quercus alba	10		FACU
5.			
6.			
7.			
8.			
9.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Herb Stratum (Plot size: 5')			
1. Aesculus octandra	18	✓	FACU
2. Prunus serotina	10		FACU
3. Potentilla indica	8		FACU
4. Prunus americana	25	✓	FACU
5. Quercus alba	10		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	71 = Total Cover		
50% of total cover: 35.5	20% of total cover: 14.2		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	236	x 4 =	944
UPL species	0	x 5 =	0
Column Totals:	246 (A)		974 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-AA2 UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 5/3	100					SCL	
2-19	10YR 5/6	100					SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/09/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA3

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 8

Subregion (LRR or MLRA): LRRN Lat: 39.91694532470 Long: -80.12500339490 Datum: NAD 83

Soil Map Unit Name: Dormant-Culleoka complex, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓

Are Vegetation ____, Soil ____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Cowardin Code: PEM
HGM: Slope
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 0
Water Table Present?	Yes ✓	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA3

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Typha angustifolia	40	✓	OBL
2. Carex vulpinoidea	10		OBL
3. Poa trivialis	60	✓	FACW
4. Juncus effusus	15		FACW
5. Solidago sp	5		
6. Lotus corniculatus	5		UPL
7.			
8.			
9.			
10.			
11.			
	135 = Total Cover		
50% of total cover: 67.5	20% of total cover: 27		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: W-AA3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR6/1	70	10YR4/6	10	RM	M/PL	SCL	
			10YR5/3	20	RM	M/PL	SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date:

Applicant/Owner: EQT State: PA Sampling Point: W-AA3 UP

Investigator(s): J. Heule L. McCarrell, L. Sexton, C. Lee Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 10

Subregion (LRR or MLRA): LRRN Lat: 39.91699149540 Long: -80.12501773560 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✔	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ____	No ✔	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA3 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Lotus corniculatus	30	✔	UPL
2. Cirsium arvense	40	✔	FACU
3. Solidago altissima	10		FACU
4. Poa pratensis	50	✔	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	130 = Total Cover		
50% of total cover: 65	20% of total cover: 26		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	30	x 5 =	150
Column Totals:	130 (A)		550 (B)

Prevalence Index = B/A = 4.2

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-AA3 UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-19	10YR 4/3	80					SC	
	10YR 7/8	20						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA4

Investigator(s): JH, LM, LS, CL Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): LRRN Lat: 39.91675806970 Long: -80.11522332030 Datum: NAD 83

Soil Map Unit Name: Dormont silt loam, 8 to 15 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✓ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 0
Water Table Present?	Yes ✓	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA4

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex lurida	65	✓	OBL
2. Carex vulpinoidea	50	✓	OBL
3. Phalaris arundinacea	5		FACW
4. Poa trivialis	5		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	125 = Total Cover		
50% of total cover: 62.5	20% of total cover: 25		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: W-AA4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 5/1	100					SILC	
3-19	10YR 5/1	80	10YR 3/6	80	C	M/PL	SILC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Wetzel Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA4 UP

Investigator(s): JH, LM, LS, CL Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 4

Subregion (LRR or MLRA): LRRN Lat: 39.916774 Long: -80.115212 Datum: NAD 83

Soil Map Unit Name: Dormont silt loam, 8 to 15 percent slopes (DoC) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA4 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Cirsium arvense	60	✓	FACU
2. Securigera varia	40	✓	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	60	x 4 =	240
UPL species	40	x 5 =	200
Column Totals:	100 (A)		440 (B)

Prevalence Index = B/A = 4.4

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: W-AA4 UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/1	100					SCL	
12-20	10YR 7/6	100					SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA7

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 15

Subregion (LRR or MLRA): LRRN Lat: 39.91692035220 Long: -80.11417398970 Datum: NAD 83

Soil Map Unit Name: Dormont silt loam, 8 to 15 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ✓ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): 0
Water Table Present?	Yes ✓	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA7

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Scirpus atrovirens	10		OBL
2. Carex vulpinoidea	60	✓	OBL
3. Phalaris arundinacea	20		FACW
4. Poa trivialis	15		FACW
5. Poa palustris	40	✓	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	145 = Total Cover		
50% of total cover: 72.5	20% of total cover: 29		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: W-AA7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-19	10YR 3/1	15	10YR 5/8	5	C	M	SC	
	10YR 5/1	80						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/10/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA7 UP

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 20

Subregion (LRR or MLRA): LRRN Lat: 39.91692609920 Long: -80.11395393570 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 8 to 15 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA7 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Cirsium arvense	25	✓	FACU
2. Securigera varia	12		UPL
3. Rubus allegheniensis	80	✓	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	117 = Total Cover		
50% of total cover: 58.5	20% of total cover: 23.4		
Woody Vine Stratum (Plot size: 15')			
1. Rubus allegheniensis	10	✓	FACU
2.			
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	115	x 4 =	460
UPL species	12	x 5 =	60
Column Totals:	127 (A)		520 (B)

Prevalence Index = B/A = 4.1

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: W-AA7 UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/1	100					SCL	
12-20	10YR 7/6	100					SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA8

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.91723329800 Long: -80.10237266320 Datum: NAD 83

Soil Map Unit Name: Dekalb channery loam, 25 to 80 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓

Are Vegetation ____, Soil ____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Cowardin Code: PEM
HGM: Isolated
WT: RPWWN

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ✓	No ____	Depth (inches): 3
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA8

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex lurida	40	✓	OBL
2. Carex vulpinoidea	30	✓	OBL
3. Juncus effusus	40	✓	FACW
4. Poa trivialis	25		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	135 = Total Cover		
50% of total cover: 67.5	20% of total cover: 27		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Western 50% of wetland has been mowed in the last 2 months, eastern 50% has not. Therefore, the western part of the wetland has problematic vegetation. Water table at 0" for entire plot. Wetland ID in the area with hydric vegetation.

SOIL Sampling Point: W-AA8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 5/2	70	10YR 4/6		C	M	SC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Bedrock

Depth (inches): 9"

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA8 UP

Investigator(s): J. Heule, L. McCarell, L. Sexton, C. Lee Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Flat plain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.91720006700 Long: -80.10240104760 Datum: NAD 83

Soil Map Unit Name: Dekalb channery loam, 25 to 80 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rainfall for 4 days before and during surveys. Several streams in survey area were flooded.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA8 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Trifolium pratense	25		FACU
2. Daucus carotaz	10		UPL
3. Securigera varia	20		UPL
4. Phleum pratense	60	✓	FACU
5. Dactylis glomerata	30	✓	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	145 = Total Cover		
50% of total cover: 72.5	20% of total cover: 29		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	115	x 4 =	460
UPL species	30	x 5 =	150
Column Totals:	145 (A)		610 (B)

Prevalence Index = B/A = 4.2

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-AA8 UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/1	100					SCL	
12-20	10YR7/6	100					SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 10/09/2015

Applicant/Owner: EQT State: PA Sampling Point: W-M1

Investigator(s): J. McGuirk, A. Mengel Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hill slope Local relief (concave, convex, none): Linear Slope (%): 12-15%

Subregion (LRR or MLRA): LRRN Lat: 39.91492671900 Long: 80.10000660220 Datum: NAD 83

Soil Map Unit Name: Dekalb channery loam, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: Slope
WT: Isolate

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-M1

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	75	✔	FACW
2. Solidago altissima	10		FACU
3. Rosa multiflora	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: W-M1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2"	10YR 2/1	100%					CL	Organics
2-8"	2.5Y 5/2	80	7.5YR 5/6	20	C	PL	GRCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ✔ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 10/09/2015

Applicant/Owner: EQT State: PA Sampling Point: W-M1 UPL

Investigator(s): J. McGuirk, A. Mengel Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hill slope Local relief (concave, convex, none): Linear Slope (%): 8-10%

Subregion (LRR or MLRA): LRRN Lat: 39.91492671900 Long: -80.10000660220 Datum: NAD 83

Soil Map Unit Name: Dekalb channery loam, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-M1 UPL

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Gleditsia triacanthos	15	✔	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		

Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Herb Stratum (Plot size: 5')			
1. Phleum pratense	40	✔	FACU
2. Dactylis glomerata	40	✔	FACU
3. Achillea millefolium	10		FACU
4. Plantago lanceolata	10		UPL
5. Solidago sp.	10		ND
6. Solanum carolinense	5		FACU
7.			
8.			
9.			
10.			
11.			
	115 = Total Cover		
50% of total cover: 57.5	20% of total cover: 23		

Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not determined

SOIL

Sampling Point: W-M1 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR 4/3	95	7.5YR 4/4	5	C	M	SiL	
6-12"	10YR 6/2	100%					GRL	Disturbed
12+								Refusal

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Shale

Depth (inches): 12"

Hydric Soil Present? Yes ____ No ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA9

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.91473751940 Long: -80.09409456670 Datum: NAD 83

Soil Map Unit Name: Glenford silt loam, 3 to 8 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓

Are Vegetation ____, Soil ____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Cowardin Code: PEM
HGM: Isolated
WT: RPWWN

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ✓	No ____	Depth (inches): 3
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA9

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	5		FACW
2. Carex vulpinoidea	30	✓	OBL
3. Juncus tenuis	20		FAC
4. Poa trivialis	60	✓	FACW
5. Phleum pratense	5		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	120 = Total Cover		
50% of total cover: 60	20% of total cover: 24		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: W-AA9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-19	10YR 5/1	97	10YR 5/8	3	C	M	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

Soft iron-manganese masses in question do not have diffuse boundaries.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/11/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA9 UP

Investigator(s): J. Heule L. Sexton C. Lee L. McCarrell Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Flat plain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.91470007700 Long: -80.09407900410 Datum: NAD 83

Soil Map Unit Name: Glenford silt loam, 3 to 8 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rainfall for 4 days before and during surveys. Several streams in survey area were flooded.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA9 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Ulmus rubra	8	✓	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	8 = Total Cover		
50% of total cover: 4	20% of total cover: 1.6		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Unknown grass	35	✓	ND
2. Daucus carotaz	18		FACW
3. Apocynum cannabinum	10		FACU
4. Dichanthelium clandestinum	5		FAC
5. Hyssop officinalis	30	✓	UPL
6. Rubus allegheniensis	15		FACU
7.			
8.			
9.			
10.			
11.			
	113 = Total Cover		
50% of total cover: 56.5	20% of total cover: 22.6		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	18	x 2 =	36
FAC species	13	x 3 =	39
FACU species	25	x 4 =	100
UPL species	30	x 5 =	150
Column Totals:	86 (A)		325 (B)

Prevalence Index = B/A = 3.8

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-AA9 UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	10YR4/1	90					SC	
	10YR7/6	10						
11-19	10YR7/6	100					SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/12/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA10

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.90452367680 Long: -80.09013204320 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓

Are Vegetation ____, Soil ____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD
PEM is cut out of forrest, not a PFO

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ✓	No ____	Depth (inches): 7
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA10

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1. Nyssa sylvatica	3	✓	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	3 = Total Cover		
50% of total cover: 1.5	20% of total cover: 0.6		
Herb Stratum (Plot size: 5')			
1. Carex lurida	20		OBL
2. Agrimonia parviflora	25	✓	FACW
3. Impatiens capensis	20		FACW
4. Leersia oryzoides	40	✓	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	105 = Total Cover		
50% of total cover: 52.5	20% of total cover: 21		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: W-AA10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/2	100					SL	
3-19	10YR 2/2	20	10YR 3/6	15	D	M	SL	
	10YR 5/1	65						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ **No** _____

Remarks:

10 percent muck 3-19".

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 07/12/2015

Applicant/Owner: EQT State: PA Sampling Point: W-AA10 UP

Investigator(s): JH, LM, LS, CL Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5

Subregion (LRR or MLRA): LRRN Lat: 39.90453565550 Long: -80.09019300780 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✔ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✔

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✔	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ____	No ✔	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ____	No ✔	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✔	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Heavy rainfall for 4 days before and during surveys.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-AA10 UP

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus americana	55	✔	FACU
2. Celtis occidentalis	40	✔	FACU
3.			
4.			
5.			
6.			
7.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Verbesina alternifolia	80	✔	FAC
2. Viola sp	8		
3. Grass sp	15		
4. Boehmeria cylindrica	5		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	108 = Total Cover		
50% of total cover: 54	20% of total cover: 21.6		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	80	x 3 =	240
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals:	180 (A)		630 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: W-AA10 UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/1	100					SCL	
12-19	10YR 7/6	100					SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 10/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-M3

Investigator(s): J. McGuirk, A. Mengel Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Valley bottom Local relief (concave, convex, none): Concave Slope (%): 2-4%

Subregion (LRR or MLRA): LRRN Lat: 39.902613 Long: -80.086839 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 25 to 50 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-M3

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	5	✔	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Sapling/Shrub Stratum (Plot size: 15')			
1. Salix nigra	5	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 5')			
1. Verbesina alternifolia	30	✔	FAC
2. Typha angustifolia	20	✔	OBL
3. Agrimonia parviflora	10		FACW
4. Salix nigra	10		OBL
5. Dichanthelium clandestinum	10		FAC
6. Solidago altissima	5		FACU
7. Scirpus atrovirens	5		OBL
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: W-M3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8"	10YR 4/2	90	7.5YR 4/4	10	C	PL	SiL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 10/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-M4

Investigator(s): J. McGuirk, A. Mengel Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hill slope Local relief (concave, convex, none): Concave Slope (%): 3-5%

Subregion (LRR or MLRA): LRRN Lat: 39.90235947890 Long: -80.08697573750 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 25 to 50 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
Cowardin Code: PEM
HGM: Slope
WT: RPWWN

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ✓ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): 1"
Water Table Present?	Yes ✓	No _____	Depth (inches): 0"
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0"

Wetland Hydrology Present? **Yes** ✓ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-M4

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	50	✓	FACW
2. Typha angustifolia	20	✓	OBL
3. Onoclea sensibilis	10		FACW
4. Carex vulpinoidea	10		OBL
5. Asclepias incarnata	5		OBL
6. Juncus effusus	5		FACW
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-M4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 3/1	97	10YR 4/4	3	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 10/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-M2

Investigator(s): J. McGuirk, A. Mengel Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Valley bottom Local relief (concave, convex, none): Concave Slope (%): 3-5%

Subregion (LRR or MLRA): LRRN Lat: 39.90155980100 Long: -80.08556468700 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 25 to 50 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✓ **No** _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): 0"
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0"

Wetland Hydrology Present? **Yes** ✓ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-M2

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1. Salix nigra	10	✓	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5')			
1. Typha angustifolia	50	✓	OBL
2. Phalaris arundinacea	30	✓	FACW
3. Juncus effusus	20		FACW
4. Poa trivialis	10		FACW
5. Verbena hastata	5		FACW
6. Carex lurida	5		OBL
7. Eupatorium perfoliatum	5		FACW
8.			
9.			
10.			
11.			
	125 = Total Cover		
50% of total cover: 62.5	20% of total cover: 25		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-M2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8"	10YR 4/1	90	7.5YR 4/4	10	C	PL	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 10/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-M2, M3, M4 UPL

Investigator(s): J. McGuirk, A. Mengel Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hill slope Local relief (concave, convex, none): Convex Slope (%): 3-5%

Subregion (LRR or MLRA): LRRN Lat: 39.90221161600 Long: -80.08653293760 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 25 to 50 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-M2, M3, M4 UPL

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Phleum pratense	40	✔	FACU
2. Dactylis glomerata	20	✔	FACU
3. Potentilla indica	15		FACU
4. Andropogon virginicus	15		FACU
5. Trifolium pratense	10		FACU
6. Plantago lanceolata	5		UPL
7. Achillea millefolium	5		FACU
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-M2, M3, M4 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4"	7.5YR 4/4	100					SiL	
4-12"	7.5YR 5/3	80	7.5YR 5/6	10	C	M	CL	
			10YR 6/1	10	D	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 10/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-M5

Investigator(s): J. McGuirk, A. Mengel Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Valley bottom Local relief (concave, convex, none): Concave Slope (%): 0-1%

Subregion (LRR or MLRA): LRRN Lat: 39.90132669870 Long: -80.08949790100 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 25 to 50 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-M5

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	15	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Sapling/Shrub Stratum (Plot size: 15')			
1. Salix nigra	10	✔	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5')			
1. Typha angustifolia	75	✔	OBL
2. Ranunculus hispidus	5		FAC
3. Mimulus ringens	5		OBL
4. Epilobium coloratum	5		FACW
5. Carex sp.	5		ND
6. Eupatorium perfoliatum	3		FACW
7. Persicaria sagittata	3		OBL
8.			
9.			
10.			
11.			
	101 = Total Cover		
50% of total cover: 50.5	20% of total cover: 20.2		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not determined

SOIL Sampling Point: W-M5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 5/2	95	5YR 5/4	5	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 10/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-M6

Investigator(s): J. McGuirk, A. Mengel Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Valley bottom Local relief (concave, convex, none): Concave Slope (%): 0-3%

Subregion (LRR or MLRA): LRRN Lat: 39.90157019710 Long: -80.08954794330 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 25 to 50 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✔ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-M6

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Typha angustifolia	30	✔	OBL
2. Schoenoplectus tabernaemontani	30	✔	OBL
3. Juncus effusus	20		FACW
4. Scirpus atrovirens	10		OBL
5. Agrimonia parviflora	10		FACW
6. Solidago sp.	5		ND
7. Poa sp.	5		ND
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✔ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not determined

SOIL Sampling Point: W-M6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 5/2	95	5YR 4/4	5	C	PL	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Greene Sampling Date: 10/08/2015

Applicant/Owner: EQT State: PA Sampling Point: W-M5, M6 UPL

Investigator(s): J. McGuirk, A. Mengel Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Valley bottom Local relief (concave, convex, none): Convex Slope (%): 0-2%

Subregion (LRR or MLRA): LRRN Lat: 39.90170628860 Long: -80.08933135920 Datum: NAD 83

Soil Map Unit Name: Dormont-Culleoka complex, 25 to 50 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-M5, M6 UPL

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Dactylis glomerata	40	✔	FACU
2. Verbesina alternifolia	20	✔	FAC
3. Cirsium vulgare	10		FACU
4. Solanum carolinense	10		FACU
5. Solidago sp.	10		ND
6. Achillea millefolium	10		FACU
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	20	x 3 =	60
FACU species	70	x 4 =	280
UPL species		x 5 =	
Column Totals:	90 (A)		340 (B)

Prevalence Index = B/A = 3.77

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not determined

SOIL

Sampling Point: W-M5, M6 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 4/3	100%					SiL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Wetzel Sampling Date: 10/21/2015

Applicant/Owner: EQT State: WV Sampling Point: W-Z1

Investigator(s): SAZ, CS Section, Township, Range: NA

Landform (hillslope, terrace, etc.): flloodplain Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.562971 Long: -80.543704 Datum: NAD 83

Soil Map Unit Name: Skidmore gravelly loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-Z1

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	15	✓	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Sapling/Shrub Stratum (Plot size: 15')			
1. Acer negundo	10	✓	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 5')			
1. Dichanthelium clandestinum	20	✓	FAC
2. Phalaris arundinacea	30	✓	FACW
3. Vernonia noveboracensis	15		FACW
4. Viola sororia	15		FAC
5. Symphyotrichum prenanthoides	10		FAC
6. Persicaria maculosa	10		FACW
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: W-Z1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/2	100					SiL	
8-20	10YR 4/2	90	10YR 5/8	10	C	M/PL	SiL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Wetzel Sampling Date: 10/21/2015

Applicant/Owner: EQT State: WV Sampling Point: W-Z1 UPL

Investigator(s): SAZ, CS Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.563019 Long: -80.54361 Datum: NAD 83

Soil Map Unit Name: Skidmore gravelly loam NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-Z1 UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 0)			
1. Dactylis glomerata	65	✓	FACU
2. Trifolium pratense	20	✓	FACU
3. Echinochloa crus-galli	10		FAC
4. Plantago major	5		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-Z1 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/4	70	7.5 YR 5/6	10	C	M	GL	
	5Y 6/6	20						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Coarse fragments

Depth (inches): 5

Hydric Soil Present? **Yes** ___ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Wetzel Sampling Date: 10/21/2015

Applicant/Owner: EQT State: WV Sampling Point: W-Z3

Investigator(s): SAZ, CS Section, Township, Range: NA

Landform (hillslope, terrace, etc.): flloodplain Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.552937 Long: -80.544539 Datum: NAD 83

Soil Map Unit Name: Skidmore gravelly loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWN
Data form for wetlands W-Z3A and W-Z3B.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-Z3

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex lurida	30	✓	OBL
2. Carex vulpinoidea	20	✓	OBL
3. Arthraxon hispidus	20	✓	FAC
4. Juncus effusus	15		FACW
5. Cyperus esculentus	10		FACW
6. Scirpus atrovirens	5		OBL
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation has been disturbed over significant portions of W-Z3A & W-ZB, straw is covering bare ground.

SOIL

Sampling Point: W-Z3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/2	80	7.5YR 5/8	10	C	M/PL	SiCL	
	2.5Y 6/8	10						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

Very disturbed soils throughout most of wetland, sample point taken in a less disturbed area.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Wetzel Sampling Date: 10/21/2015

Applicant/Owner: EQT State: WV Sampling Point: W-Z3 UPL

Investigator(s): SAZ, CS Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): LRRS Lat: 39.553178 Long: -80.544416 Datum: NAD 83

Soil Map Unit Name: Skidmore gravelly loam NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-Z3 UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 0)			
1. Dactylis glomerata	50	✓	FACU
2. Juncus effusus	15	✓	FACW
3. Trifolium pratense	15	✓	FACU
4. Plantago lanceolata	10		UPL
5. Daucus carota	10		UPL
6. Phalaris arundinacea	10		FACW
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-Z3 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/3	100					L	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 5

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Wetzel Sampling Date: 10/21/2015

Applicant/Owner: EQT State: WV Sampling Point: W-Z2

Investigator(s): SAZ, CS Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): flloodplain Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.550181 Long: -80.544762 Datum: NAD 83

Soil Map Unit Name: Skidmore gravelly loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** **Yes** ✓ **No** _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
Cowardin Code: PEM
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? **Yes** ✓ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-Z2

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5')			
1. Carex vulpinoidea	70	✓	OBL
2. Carex lurida	10		OBL
3. Scirpus polyphyllus	5		OBL
4. Juncus canadensis	5		OBL
5. Persicaria sagittata	5		OBL
6. Juncus effusus	5		FACW
7. Cyperus esculentus	5		FACW
8.			
9.			
10.			
11.			
	105 = Total Cover		
50% of total cover: 52.5	20% of total cover: 21		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-Z2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 4/2	80	7.5YR 5/8	20	C	M/PL	SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: EEP City/County: Wetzel Sampling Date: 10/21/2015

Applicant/Owner: EQT State: WV Sampling Point: W-Z2 UPL

Investigator(s): SAZ, CS Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 0

Subregion (LRR or MLRA): LRRN Lat: 39.550418 Long: -80.544845 Datum: NAD 83

Soil Map Unit Name: Skidmore gravelly loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
Upland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W-Z2 UPL

Tree Stratum (Plot size: 0)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

50% of total cover: 0 20% of total cover: 0

Sapling/Shrub Stratum (Plot size: 0)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	0 = Total Cover		

50% of total cover: 0 20% of total cover: 0

Herb Stratum (Plot size: 0)			
1. Dactylis glomerata	60	✓	FACU
2. Clinopodium vulgare	15		UPL
3. Trifolium pratense	10		FACU
4. Glechoma hederacea	10		FACU
5. Verbesina alternifolia	5		FAC
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		

50% of total cover: 50 20% of total cover: 20

Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		

50% of total cover: 0 20% of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-Z2 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-5	10YR 4/4	100					SiL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: coarse fragments

Depth (inches): 5

Hydric Soil Present? **Yes** _____ **No** ✓

Remarks:

STREAM ID S-BB1	**STREAM NAME** Lobbs Run
LAT 40.253691 **LONG** -79.962318	**DATE** 07/08/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ✔ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✔ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 2.0 ft
Top of Bank Height:
LB 1.0 ft RB 1.0 ft
Water Depth: 5.00 in
Water Width: 2.0 ft
High Water Mark: 4.0 in
Flow Direction: West

Stream Erosion
✔ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✔ No

Dam Present ___ Yes ✔ No

Sinuosity ✔ Low ___ Medium ___ High

Gradient
✔ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✔ Flowing water

Velocity
✔ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 80 % Run 10 %
Pool 10 %

Turbidity
___ Clear ✔ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	60
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	10
Silt	0.004-0.06 mm	10
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	30
Muck-Mud	black, very fine organic (FPOM)	5
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✔ Forest ___ Commercial
___ Field/Pasture ✔ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
✔ Partly open ___ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
✔ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✔ Narrow <16ft

Wetland Present ___ Yes ✔ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	Crawfish holes, mayflies, water bugs, skimmers

STREAM ID S-BB2	**STREAM NAME** UNT to Lobbs Run
LAT 40.249311 **LONG** -79.957857	**DATE** 07/08/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent ___ Ephemeral ✔	**WATER TYPE** TNW ___ RPW ___ NRPW ✔

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 1.0 ft
Top of Bank Height:
LB 1.0 ft RB 1.0 ft
Water Depth: 2.00 in
Water Width: 11.0 in
High Water Mark: 2.0 in
Flow Direction: North

Stream Erosion
✔ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✔ No

Dam Present ___ Yes ✔ No

Sinuosity ✔ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ✔ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✔ Flowing water

Velocity
___ Fast ✔ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 80 % Run 10 %
Pool 10 %

Turbidity
___ Clear ✔ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	60
Clay	< 0.004 mm (slick)	40

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	30
Muck-Mud	black, very fine organic (FPOM)	70
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
✔ Field/Pasture ___ Industrial
___ Agricultural ✔ Residential
___ Other:

Canopy Cover
✔ Partly open ___ Partly shaded
___ Shaded ✔ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✔ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✔ Narrow <16ft

Wetland Present ✔ Yes ___ No
Wetland ID W-BB2

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Source is seep/well at top of hill
crawfish holes.

STREAM ID S-BB5	**STREAM NAME** Monongehela River
LAT 40.242072 **LONG** -79.949452	**DATE** 07/08/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS AL,SC,TC,JA	
FLOW REGIME Perennial ✔ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ✔ RPW ___ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 860.0 ft
Top of Bank Height:
LB 30.0 ft RB 70.0 ft
Water Depth: ___ ft
Water Width: 767.(ft
High Water Mark: ___ in
Flow Direction: East

Stream Erosion
✔ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✔ No

Dam Present ___ Yes ✔ No

Sinuosity ✔ Low ___ Medium ___ High

Gradient
✔ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✔ Flowing water

Velocity
✔ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run 100 %
Pool %

Turbidity
___ Clear ✔ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	15
Cobble	64-256 mm (2.5"-10")	30
Gravel	2-64 mm (0.1"-2.5")	25
Sand	0.06-2mm (gritty)	20
Silt	0.004-0.06 mm	5
Clay	< 0.004 mm (slick)	5

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	30
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ✔ Commercial
___ Field/Pasture ✔ Industrial
___ Agricultural ✔ Residential
___ Other:

Canopy Cover
✔ Partly open ___ Partly shaded
___ Shaded ✔ Open

Indicate the dominant type (Check one)
✔ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
✔ Wide > 30ft ___ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✔ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Substrate material could not be determined
OHWM could not be accurately determined
Salamanders, frogs, fish, snakes

STREAM ID S-BB4	**STREAM NAME** Bunola Run
LAT 40.23785276 **LONG** -79.94687252	**DATE** 07/08/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS AL,SC,TC,JA	
FLOW REGIME Perennial ✓ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 20.0 ft
Top of Bank Height:
LB 4.0 ft RB 2.0 ft
Water Depth: 12.00 in
Water Width: 5.0 ft
High Water Mark: 18.0 in
Flow Direction: East

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ✓ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 80 % Run 10 %
Pool 10 %

Turbidity
✓ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	15
Cobble	64-256 mm (2.5"-10")	30
Gravel	2-64 mm (0.1"-2.5")	25
Sand	0.06-2mm (gritty)	20
Silt	0.004-0.06 mm	5
Clay	< 0.004 mm (slick)	5

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	30
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	

STREAM ID S-BB6	**STREAM NAME** UNT to Bunola Run
LAT 40.238830 **LONG** -79.943779	**DATE** 07/08/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS AL,SC,TC,JA	
FLOW REGIME Perennial ✔ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✔ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 3.0 ft
Top of Bank Height:
LB 1.0 ft RB 2.0 ft
Water Depth: 7.00 in
Water Width: 1.0 ft
High Water Mark: 5.0 in
Flow Direction: North

Stream Erosion
✔ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✔ No

Dam Present ___ Yes ✔ No

Sinuosity ✔ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✔ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✔ Flowing water

Velocity
___ Fast ✔ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 70 % Run 30 %
Pool %

Turbidity
✔ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	70
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	10
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	10
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ✔ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
___ Shaded ✔ Open

Indicate the dominant type (Check one)
___ Trees ✔ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ✔ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✔ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✔ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Catchment feature, drains into river
Skimmers, water bugs, crawfish holes.

STREAM ID S-BB3	**STREAM NAME** Kelly Run
LAT 40.228285 **LONG** -79.932636	**DATE** 07/08/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS AL,SC,TC,JA	
FLOW REGIME Perennial ✔ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✔ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 30.0 ft
Top of Bank Height:
LB 4.0 ft RB 2.0 ft
Water Depth: 18.00 in
Water Width: 20.0 ft
High Water Mark: 12.0 in
Flow Direction: Northeast

Stream Erosion
✔ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✔ No

Dam Present ___ Yes ✔ No

Sinuosity ___ Low ✔ Medium ___ High

Gradient
✔ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✔ Flowing water

Velocity
✔ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 80 % Run 10 %
Pool 10 %

Turbidity
✔ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	60
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	10
Silt	0.004-0.06 mm	10
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	30
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
✔ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
✔ Partly open ___ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
✔ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ✔ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✔ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✔ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	Salamanders, frogs, mayflies, water bugs, skimmers

STREAM ID S-N1	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.918213 **LONG** -80.128345	**DATE** 06/09/2015
CLIENT EQT	**PROJECT NAME** MVP
INVESTIGATORS JH, LM, JK	
FLOW REGIME Perennial ___ Intermittent ✔ Ephemeral ___	**WATER TYPE** TNW ___ RPW ___ NRPW ✔

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 7.0 ft
Top of Bank Height:
LB 20.0 in RB 72.0 in
Water Depth: 0.00 in
Water Width: 0.0 ft
High Water Mark: 5.0 in
Flow Direction: South

Stream Erosion
___ None ✔ Moderate ___ Heavy

Artificial, Modified or Channelized
✔ Yes ___ No

Dam Present ___ Yes ✔ No

Sinuosity ✔ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✔ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
✔ No water, stream bed dry
___ Stream bed moist
___ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 0 % Run 0 %
Pool 0 %

Turbidity
___ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
✔ Other No water

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	10
Gravel	2-64 mm (0.1"-2.5")	25
Sand	0.06-2mm (gritty)	65
Silt	0.004-0.06 mm	0
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	5
Muck-Mud	black, very fine organic (FPOM)	20
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ✔ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
___ Shaded ✔ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
✔ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✔ Narrow <16ft

Wetland Present ___ Yes ✔ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ✔ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Channelized to direct water around existing fenced facility

STREAM ID S-N2	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.917568 **LONG** -80.130835	**DATE** 06/09/2015
CLIENT EQT	**PROJECT NAME** MVP
INVESTIGATORS JH, LM, JK	
FLOW REGIME Perennial ___ Intermittent ✔ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✔ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 2.0 ft
Top of Bank Height:
LB 1.0 ft RB 1.0 ft
Water Depth: 0.00 in
Water Width: 0.0 ft
High Water Mark: 2.0 in
Flow Direction: Southwest

Stream Erosion
___ None ✔ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✔ No

Dam Present ___ Yes ✔ No

Sinuosity ✔ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✔ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
✔ No water, stream bed dry
___ Stream bed moist
___ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 0 % Run 0 %
Pool 0 %

Turbidity
___ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
✔ Other No water

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	10
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	50
Silt	0.004-0.06 mm	20
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	5
Muck-Mud	black, very fine organic (FPOM)	5
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ✔ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
___ Shaded ✔ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✔ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✔ Narrow <16ft

Wetland Present ✔ Yes ___ No
Wetland ID W-N1

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	S-N3 feeds into S-N2. Connected with W-N1

STREAM ID S-N3	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.918078 **LONG** -80.1302	**DATE** 06/09/2015
CLIENT EQT	**PROJECT NAME** MVP
INVESTIGATORS JH, LM, JK	
FLOW REGIME Perennial ___ Intermittent ✔ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✔ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 3.0 ft
Top of Bank Height:
LB 6.0 in RB 6.0 in
Water Depth: 0.00 in
Water Width: 0.0 ft
High Water Mark: 6.0 in
Flow Direction: Southwest

Stream Erosion
___ None ✔ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✔ No

Dam Present ___ Yes ✔ No

Sinuosity ✔ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✔ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
✔ No water, stream bed dry
___ Stream bed moist
___ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 0 % Run 0 %
Pool 0 %

Turbidity
___ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
✔ Other No water

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	10
Cobble	64-256 mm (2.5"-10")	5
Gravel	2-64 mm (0.1"-2.5")	0
Sand	0.06-2mm (gritty)	50
Silt	0.004-0.06 mm	35
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	0
Muck-Mud	black, very fine organic (FPOM)	10
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ✔ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
✔ Shaded ___ Open

Indicate the dominant type (Check one)
___ Trees ✔ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✔ Narrow <16ft

Wetland Present ___ Yes ✔ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Drains from a culvert and converges with S-N2 through another culvert

STREAM ID S-AA1	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.91687549 **LONG** -80.12493326	**DATE** 07/08/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ✓ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 10.0 ft
Top of Bank Height:
LB 16.0 in RB 15.0 in
Water Depth: 3.00 in
Water Width: 81.0 in
High Water Mark: 10.0 in
Flow Direction: South

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
✓ Yes ___ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
✓ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 60 % Run 20 %
Pool 20 %

Turbidity
___ Clear ✓ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		10
Boulder	> 256 mm (10")	20
Cobble	64-256 mm (2.5"-10")	50
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	0
Silt	0.004-0.06 mm	0
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	10
Muck-Mud	black, very fine organic (FPOM)	15
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ✓ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ✓ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✓ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Channelized under highway through cement culvert. 5 foot waterfall

STREAM ID S-AA2	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.915698 **LONG** -80.131299	**DATE** 07/08/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 1.5 ft
Top of Bank Height:
LB 6.0 in RB 6.0 in
Water Depth: 0.50 in
Water Width: 1.0 ft
High Water Mark: 2.0 in
Flow Direction: Southeast

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
✓ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 0 % Run 0 %
Pool 100 %

Turbidity
___ Clear ✓ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	0
Sand	0.06-2mm (gritty)	10
Silt	0.004-0.06 mm	80
Clay	< 0.004 mm (slick)	10

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	80
Muck-Mud	black, very fine organic (FPOM)	10
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✓ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ✓ Yes ___ No
Wetland ID W-AA1

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Adjacent to W-AA1. The road creates a dam which creates the wetland

STREAM ID S-AA5	**STREAM NAME** South Fork Tenmile Creek
LAT 39.91246121 **LONG** -80.12781246	**DATE** 07/10/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ✓ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ✓ RPW ___ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 70.0 ft
Top of Bank Height:
LB 13.0 ft RB 15.0 ft
Water Depth: 4.00 ft
Water Width: 45.0 ft
High Water Mark: 6.5 ft
Flow Direction: Southwest

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
✓ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 10 % Run 90 %
Pool 0 %

Turbidity
___ Clear ___ Slightly turbid ✓ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ✓ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ✓ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Investigators cannot see bottom of stream.

STREAM ID S-AA7	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.91337453 **LONG** -80.12736829	**DATE** 07/10/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 8.0 ft
Top of Bank Height:
LB 2.0 ft RB 2.5 ft
Water Depth: 4.00 in
Water Width: 5.0 ft
High Water Mark: 10.0 in
Flow Direction: West

Stream Erosion
___None ✓ Moderate ___Heavy

Artificial, Modified or Channelized
✓ Yes ___ No

Dam Present ___Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___Moderate (2 ft/100 ft) ___Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
✓ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 40 % Run 30 %
Pool 30 %

Turbidity
___ Clear ✓ Slightly turbid ___Turbid
___ Opaque ___Stained
___Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	20
Cobble	64-256 mm (2.5"-10")	50
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	5
Silt	0.004-0.06 mm	5
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	5
Muck-Mud	black, very fine organic (FPOM)	0
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ✓ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___Partly open ___Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ___Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___Rooted emergent ___Rooted submergent ___Rooted floating ___Free floating
___Floating algae ___Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Tributary to S-AA5

STREAM ID S-AA3	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.916234 **LONG** -80.126083	**DATE** 07/08/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 4.0 ft
Top of Bank Height:
LB 10.0 in RB 14.0 in
Water Depth: 0.00 in
Water Width: 0.0 ft
High Water Mark: 5.0 in
Flow Direction: South

Stream Erosion
___None ✓Moderate ___Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___Yes ✓No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___No water, stream bed dry
✓Stream bed moist
___Standing water
___Flowing water

Velocity
___Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 0 % Run 0 %
Pool 0 %

Turbidity
___ Clear ___Slightly turbid ___Turbid
___ Opaque ___Stained
✓Other No water

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	50
Sand	0.06-2mm (gritty)	50
Silt	0.004-0.06 mm	0
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	40
Muck-Mud	black, very fine organic (FPOM)	0
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___Partly open ___Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ✓Yes ___No
Wetland ID W-AA2

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___Rooted emergent ___Rooted submergent ___Rooted floating ___Free floating
___Floating algae ___Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Adjacent to W-AA2

STREAM ID S-AA4	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.916873 **LONG** -80.124933	**DATE** 07/09/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ✓ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 5.0 ft
Top of Bank Height:
LB 16.0 in RB 21.0 in
Water Depth: 2.00 in
Water Width: 30.0 in
High Water Mark: 7.0 in
Flow Direction: South

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
✓ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 50 % Run 20 %
Pool 30 %

Turbidity
✓ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	30
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	50
Silt	0.004-0.06 mm	0
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	30
Muck-Mud	black, very fine organic (FPOM)	10
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ✓ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✓ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ✓ Yes ___ No
Wetland ID W-AA3

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ✓ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	Adjacent to W-AA3

STREAM ID S-AA8	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.91667051 **LONG** -80.11525436	**DATE** 07/10/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent ___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 3.0 ft
Top of Bank Height:
LB 1.5 ft RB 1.5 ft
Water Depth: 1.00 in
Water Width: 0.5 ft
High Water Mark: 0.5 ft
Flow Direction: Southeast

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
✓ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 0 % Run 20 %
Pool 80 %

Turbidity
___ Clear ✓ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	0
Sand	0.06-2mm (gritty)	0
Silt	0.004-0.06 mm	50
Clay	< 0.004 mm (slick)	50

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	50
Muck-Mud	black, very fine organic (FPOM)	10
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
___ Shaded ✓ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✓ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ✓ Yes ___ No
Wetland ID W-AA4

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	Runs through W-AA4

STREAM ID S-AA9	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.91708932 **LONG** -80.11402927	**DATE** 07/10/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 4.0 ft
Top of Bank Height:
LB 18.0 in RB 18.0 in
Water Depth: 1.00 in
Water Width: 3.0 in
High Water Mark: 0.5 ft
Flow Direction: Southwest

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ✓ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 100 % Run % Pool %

Turbidity
✓ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	0
Sand	0.06-2mm (gritty)	0
Silt	0.004-0.06 mm	50
Clay	< 0.004 mm (slick)	50

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	20
Muck-Mud	black, very fine organic (FPOM)	25
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
✓ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
✓ Partly open ___ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✓ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ✓ Yes ___ No
Wetland ID W-AA7

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Stream ends at W-AA7

STREAM ID S-AA10	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.91742961 **LONG** -80.11058282	**DATE** 07/10/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent ✓ Ephemeral ___	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 5.0 ft
Top of Bank Height:
LB 2.0 ft RB 2.0 ft
Water Depth: 3.00 in
Water Width: 10.0 in
High Water Mark: 15.0 ft
Flow Direction: South

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
✓ Yes ___ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ✓ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ✓ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 80 % Run 0 %
Pool 20 %

Turbidity
✓ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		25
Boulder	> 256 mm (10")	50
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	10
Sand	0.06-2mm (gritty)	5
Silt	0.004-0.06 mm	10
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	50
Muck-Mud	black, very fine organic (FPOM)	0
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
✓ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✓ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Completely shaded, hard to find. Runs through culvert under road

STREAM ID S-AA11	**STREAM NAME** UNT to Ruff Creek
LAT 39.91747678 **LONG** -80.10698305	**DATE** 07/10/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 6.5 ft
Top of Bank Height:
LB 61.0 in RB 60.0 in
Water Depth: 0.00 in
Water Width: 0.0 ft
High Water Mark: 40.0 ft
Flow Direction: Southeast

Stream Erosion
___None ___Moderate ✓Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___Yes ✓No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ___Moderate (2 ft/100 ft) ✓Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___No water, stream bed dry
✓Stream bed moist
___Standing water
___Flowing water

Velocity
___Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run %
Pool %

Turbidity
___ Clear ___Slightly turbid ___Turbid
___ Opaque ___Stained
✓Other No water

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	10
Cobble	64-256 mm (2.5"-10")	10
Gravel	2-64 mm (0.1"-2.5")	0
Sand	0.06-2mm (gritty)	5
Silt	0.004-0.06 mm	20
Clay	< 0.004 mm (slick)	55

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	10
Muck-Mud	black, very fine organic (FPOM)	10
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓Forest ___Commercial
___Field/Pasture ___Industrial
___Agricultural ___Residential
___Other:

Canopy Cover
✓Partly open ___Partly shaded
___Shaded ___Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✓Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓Narrow <16ft

Wetland Present ___Yes ✓No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓Rooted emergent ___Rooted submergent ___Rooted floating ___Free floating
___Floating algae ___Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Heavy erosion

STREAM ID S-AA12	**STREAM NAME** Ruff Creek
LAT 39.91742494 **LONG** -80.10568522	**DATE** 07/10/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ✓ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ✓ RPW ___ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 75.0 ft
Top of Bank Height:
LB 12.0 ft RB 8.0 ft
Water Depth: 26.00 in
Water Width: 34.0 ft
High Water Mark: 7.0 ft
Flow Direction: South

Stream Erosion
___None ___Moderate ✓Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___Moderate (2 ft/100 ft) ___Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
✓ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 75 % Run 25 %
Pool 0 %

Turbidity
___ Clear ___Slightly turbid ✓Turbid
___ Opaque ___Stained
___Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	
Muck-Mud	black, very fine organic (FPOM)	65
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
✓ Partly open ___Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___Rooted submergent ___Rooted floating ___Free floating
___ Floating algae ___Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Investigators cannot see the bottom of the stream due to turbidity. Water level is high due to recent rain event.

STREAM ID S-AA13	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.91252677 **LONG** -80.09465444	**DATE** 07/11/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 3.0 ft
Top of Bank Height:
LB 15.0 in RB 12.0 in
Water Depth: 0.50 in
Water Width: 15.0 in
High Water Mark: 8.0 in
Flow Direction: South

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
✓ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run %
Pool 100 %

Turbidity
✓ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	5
Cobble	64-256 mm (2.5"-10")	10
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	30
Silt	0.004-0.06 mm	5
Clay	< 0.004 mm (slick)	30

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	40
Muck-Mud	black, very fine organic (FPOM)	15
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
✓ Partly open ___ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	Tributary to S-AA14

STREAM ID S-AA14	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.91245274 **LONG** -80.0943711	**DATE** 07/11/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 3.0 ft
Top of Bank Height:
LB 18.0 in RB 1.0 ft
Water Depth: 0.00 in
Water Width: 0.0 ft
High Water Mark: 4.0 in
Flow Direction: Southwest

Stream Erosion
___None ✓ Moderate ___Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___No water, stream bed dry
✓ Stream bed moist
___Standing water
___Flowing water

Velocity
___Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run %
Pool %

Turbidity
___ Clear ___Slightly turbid ___Turbid
___ Opaque ___Stained
___Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	0
Sand	0.06-2mm (gritty)	25
Silt	0.004-0.06 mm	0
Clay	< 0.004 mm (slick)	75

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	30
Muck-Mud	black, very fine organic (FPOM)	0
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
✓ Partly open ___Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___Rooted submergent ___Rooted floating ___Free floating
___ Floating algae ___Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Stream turns into much wider stream outside of corridor.

STREAM ID S-AA15	**STREAM NAME** South Fork Tenmile Creek
LAT 39.90982517 **LONG** -80.09229348	**DATE** 07/11/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ✓ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 100.0 ft
Top of Bank Height:
LB 17.0 ft RB 12.0 ft
Water Depth: 3.00 ft
Water Width: 25.0 ft
High Water Mark: 6.0 ft
Flow Direction: SE

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
✓ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run 100 %
Pool %

Turbidity
___ Clear ___ Slightly turbid ✓ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ✓ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ✓ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Investigators cannot see the bottom of the stream to evaluate substrate components. Investigators cannot safely access the north side of the bank to delineate the bank using GPS points. North bank 10 horizontal feet from the railroad.

STREAM ID S-AA24	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.9075366 **LONG** -80.0912906	**DATE** 07/12/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent ✓ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 6.0 ft
Top of Bank Height:
LB 2.0 ft RB 2.0 ft
Water Depth: 1.00 in
Water Width: 20.0 in
High Water Mark: 10.0 in
Flow Direction: Southeast

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 40 % Run 10 %
Pool 50 %

Turbidity
___ Clear ✓ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		15
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	20
Gravel	2-64 mm (0.1"-2.5")	10
Sand	0.06-2mm (gritty)	0
Silt	0.004-0.06 mm	45
Clay	< 0.004 mm (slick)	10

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	20
Muck-Mud	black, very fine organic (FPOM)	50
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

S-AA23 is a tributary to this stream

STREAM ID S-AA23	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.90722013 **LONG** -80.09118362	**DATE** 07/12/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 9.0 ft
Top of Bank Height:
LB 3.0 ft RB 3.0 ft
Water Depth: 0.00 in
Water Width: 0.0 ft
High Water Mark: 1.0 ft
Flow Direction: East

Stream Erosion
___None ___Moderate ✓Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ___Moderate (2 ft/100 ft) ✓Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
✓ Stream bed moist
___ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run %
Pool %

Turbidity
___ Clear ___Slightly turbid ___Turbid
___ Opaque ___Stained
___Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	70
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	15
Sand	0.06-2mm (gritty)	15
Silt	0.004-0.06 mm	0
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	40
Muck-Mud	black, very fine organic (FPOM)	0
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___Partly open ___Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ___Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___Rooted emergent ___Rooted submergent ___Rooted floating ___Free floating
___Floating algae ___Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Tributary to S-AA24

STREAM ID S-AA22	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.90707654 **LONG** -80.09114841	**DATE** 07/12/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 7.0 ft
Top of Bank Height:
LB 2.0 ft RB 3.0 ft
Water Depth: 0.50 in
Water Width: 15.0 in
High Water Mark: 10.0 in
Flow Direction: East

Stream Erosion
___None ✓ Moderate ___Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 50 % Run 10 %
Pool 40 %

Turbidity
___ Clear ✓ Slightly turbid ___Turbid
___ Opaque ___Stained
___Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	30
Silt	0.004-0.06 mm	20
Clay	< 0.004 mm (slick)	30

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	50
Muck-Mud	black, very fine organic (FPOM)	30
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___Partly open ___Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ___Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___Rooted emergent ___Rooted submergent ___Rooted floating ___Free floating
___Floating algae ___Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	

STREAM ID S-AA21	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.90661814 **LONG** -80.09089011	**DATE** 07/12/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent ✓ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 4.0 ft
Top of Bank Height:
LB 4.0 ft RB 4.0 ft
Water Depth: 1.00 in
Water Width: 1.0 ft
High Water Mark: 2.0 ft
Flow Direction: East

Stream Erosion
___None ___Moderate ✓Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___No water, stream bed dry
___Stream bed moist
___Standing water
✓Flowing water

Velocity
___Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 60 % Run 10 %
Pool 30 %

Turbidity
___ Clear ✓Slightly turbid ___Turbid
___ Opaque ___Stained
___Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	5
Gravel	2-64 mm (0.1"-2.5")	15
Sand	0.06-2mm (gritty)	15
Silt	0.004-0.06 mm	30
Clay	< 0.004 mm (slick)	35

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	25
Muck-Mud	black, very fine organic (FPOM)	15
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___Partly open ___Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ___Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___Rooted emergent ___Rooted submergent ___Rooted floating ___Free floating
___Floating algae ___Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Two track roads running perpendicular to stream. Debris litter in stream

STREAM ID S-AA20	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.90452337 **LONG** -80.09019849	**DATE** 07/12/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ✓ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 1.0 ft
Top of Bank Height:
LB 1.0 ft RB 1.0 ft
Water Depth: 1.00 in
Water Width: 6.0 in
High Water Mark: 3.0 in
Flow Direction: East

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ✓ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 45 % Run 15 %
Pool 75 %

Turbidity
___ Clear ✓ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	
Gravel	2-64 mm (0.1"-2.5")	
Sand	0.06-2mm (gritty)	30
Silt	0.004-0.06 mm	60
Clay	< 0.004 mm (slick)	10

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	10
Muck-Mud	black, very fine organic (FPOM)	0
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
✓ Partly open ___ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✓ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID W-AA10

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

STREAM ID S-AA17	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.90295128 **LONG** -80.08927605	**DATE** 07/12/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ✓ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 12.0 ft
Top of Bank Height:
LB 5.0 ft RB 7.0 ft
Water Depth: 22.00 in
Water Width: 4.0 ft
High Water Mark: 2.0 ft
Flow Direction: East

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ✓ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 60 % Run 10 %
Pool 30 %

Turbidity
___ Clear ✓ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		5
Boulder	> 256 mm (10")	30
Cobble	64-256 mm (2.5"-10")	30
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	10
Silt	0.004-0.06 mm	5
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	15
Muck-Mud	black, very fine organic (FPOM)	20
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
✓ Partly open ___ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

S-AA18 and S-AA19 are both tributaries to this stream

STREAM ID S-AA18	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.90281892 **LONG** -80.08921583	**DATE** 07/12/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent ✓ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 2.0 ft
Top of Bank Height:
LB 6.0 in RB 6.0 in
Water Depth: 0.50 in
Water Width: 4.0 in
High Water Mark: 2.0 in
Flow Direction: Northeast

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 75 % Run 0 %
Pool 25 %

Turbidity
✓ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	10
Sand	0.06-2mm (gritty)	20
Silt	0.004-0.06 mm	50
Clay	< 0.004 mm (slick)	20

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	15
Muck-Mud	black, very fine organic (FPOM)	15
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Tributary to S-AA17

STREAM ID S-AA19	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.90280125 **LONG** -80.08931079	**DATE** 07/12/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ___ Intermittent ✓ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 2.0 ft
Top of Bank Height:
LB 3.0 ft RB 3.0 ft
Water Depth: 0.50 in
Water Width: 6.0 in
High Water Mark: 1.0 ft
Flow Direction: Northeast

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ___ Low ✓ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
✓ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run %
Pool 100 %

Turbidity
___ Clear ___ Slightly turbid ✓ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	0
Cobble	64-256 mm (2.5"-10")	0
Gravel	2-64 mm (0.1"-2.5")	0
Sand	0.06-2mm (gritty)	20
Silt	0.004-0.06 mm	50
Clay	< 0.004 mm (slick)	30

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	15
Muck-Mud	black, very fine organic (FPOM)	10
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	Tributary to S-AA18

STREAM ID S-AA16	**STREAM NAME** UNT to South Fork Tenmile Creek
LAT 39.90186278 **LONG** -80.08527456	**DATE** 07/12/2015
CLIENT EQT	**PROJECT NAME** EQT EEP
INVESTIGATORS JH, LM, LS, CL	
FLOW REGIME Perennial ✓ Intermittent ___ Ephemeral ___	**WATER TYPE** TNW ___ RPW ✓ NRPW ___

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 11.0 ft
Top of Bank Height:
LB 57.0 in RB 39.0 in
Water Depth: 7.00 in
Water Width: 55.0 in
High Water Mark: 22.0 in
Flow Direction: Northwest

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
✓ Yes ___ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run 100 %
Pool %

Turbidity
✓ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		0
Boulder	> 256 mm (10")	20
Cobble	64-256 mm (2.5"-10")	70
Gravel	2-64 mm (0.1"-2.5")	10
Sand	0.06-2mm (gritty)	0
Silt	0.004-0.06 mm	0
Clay	< 0.004 mm (slick)	0

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	15
Muck-Mud	black, very fine organic (FPOM)	0
Marl	grey, shell fragments	0

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ___ Industrial
✓ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
___ Grasses ✓ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Flows through culvert under access road. Large PEM wetland surrounding stream. All of wetland boundary is outside corridor/access road

STREAM ID S-M1	**STREAM NAME** UNT to Muddy Creek
LAT 39.90179 **LONG** -80.08954	**DATE** 10/08/2015
CLIENT EQT	**PROJECT NAME** EEP
INVESTIGATORS J. McGuirk, A. Mengel	
FLOW REGIME Perennial ___ Intermittent ___ Ephemeral ✓	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 10.0 ft
Top of Bank Height:
LB 4.0 ft RB 4.0 ft
Water Depth: 0.00 in
Water Width: 0.0 ft
High Water Mark: 3.0 in
Flow Direction: North

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
✓ No water, stream bed dry
___ Stream bed moist
___ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run %
Pool %

Turbidity
___ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	20
Gravel	2-64 mm (0.1"-2.5")	10
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	30
Clay	< 0.004 mm (slick)	40

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	90
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
✓ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ✓ Partly shaded
___ Shaded ___ Open

Indicate the dominant type (Check one)
___ Trees ✓ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ✓ Yes ___ No
Wetland ID W-M5, W-M6

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	No Macros observed.

STREAM ID S-Z1	**STREAM NAME** Mobley Run
LAT 39.562907 **LONG** -80.543684	**DATE** 10/21/2015
CLIENT EQT	**PROJECT NAME** EEP
INVESTIGATORS SAZ, CS	
WATER TYPE TNW ☐ RPW ☑ NRPW ☐	**FLOW REGIME** Perennial ☑ Intermittent ☐ Ephemeral ☐

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 15.0 ft
Top of Bank Height:
LB 3.5 ft RB 3.5 ft
Water Depth: 1.00 in
Water Width: 3.0 ft
Ordinary High Water Mark (Width): 6.0 in
Ordinary High Water Mark (Height): 6.0 in
Flow Direction: South

Stream Erosion
__ None ✓ Moderate __ Heavy

Artificial, Modified or Channelized
__ Yes ✓ No

Dam Present __ Yes ✓ No

Sinuosity ✓ Low __ Medium __ High

Gradient
✓ Flat (0.5/100 ft) __ Moderate (2 ft/100 ft) __ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
__ No water, stream bed dry
__ Stream bed moist
__ Standing water
✓ Flowing water

Velocity
__ Fast __ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 75 % Run % Pool 25 %

Turbidity
✓ Clear __ Slightly turbid __ Turbid
__ Opaque __ Stained
__ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	40
Gravel	2-64 mm (0.1"-2.5")	40
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	20
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	10
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
✓ Forest __ Commercial
✓ Field/Pasture __ Industrial
__ Agricultural __ Residential
__ Other:

Canopy Cover
__ Open ✓ Partly shaded
__ Shaded

Indicate the dominant type
__ Trees ✓ Shrubs
__ Grasses __ Herbaceous

Floodplain Width
__ Wide > 30ft __ Moderate 15-30ft
__ Narrow <16ft

Wetland Present __ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
__ Rooted emergent __ Rooted submergent __ Rooted floating __ Free floating
__ Floating algae __ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Water pennys

STREAM ID S-J63	**STREAM NAME** UNT to Mobley Run
LAT 39.562554 **LONG** -80.543564	**DATE** 10/21/2015
CLIENT EQT	**PROJECT NAME** EEP
INVESTIGATORS SAZ, CS	
WATER TYPE TNW ☐ RPW ☑ NRPW ☐	**FLOW REGIME** Perennial ☑ Intermittent ☐ Ephemeral ☐

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 7.0 ft
Top of Bank Height:
LB 3.5 ft RB 3.5 ft
Water Depth: 2.00 in
Water Width: 3.0 ft
Ordinary High Water Mark (Width): 3.5 ft
Ordinary High Water Mark (Height): 1.0 ft
Flow Direction: West

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 60 % Run 40 %
Pool 0 %

Turbidity
___ Clear ✓ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	30
Gravel	2-64 mm (0.1"-2.5")	10
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	60
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	15
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
✓ Field/Pasture ___ Industrial
___ Agricultural ✓ Residential
___ Other:

Canopy Cover
✓ Open ___ Partly shaded
___ Shaded

Indicate the dominant type
___ Trees ___ Shrubs
✓ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ✓ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

STREAM ID S-A2a	**STREAM NAME** UNT to North Fork Fishing Creek
LAT 39.552673 **LONG** -80.544944	**DATE** 10/21/2015
CLIENT EQT	**PROJECT NAME** EEP
INVESTIGATORS SAZ, CS	
WATER TYPE TNW ☐ RPW ☑ NRPW ☐	**FLOW REGIME** Perennial ☑ Intermittent ☐ Ephemeral ☐

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 12.0 ft
Top of Bank Height:
LB 4.0 ft RB 4.0 ft
Water Depth: 2.00 in
Water Width: 3.0 ft
Ordinary High Water Mark (Width): 4.0 ft
Ordinary High Water Mark (Height): 1.0 ft
Flow Direction: North

Stream Erosion
___ None ✓ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 75 % Run % Pool 25 %

Turbidity
___ Clear ✓ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	50
Gravel	2-64 mm (0.1"-2.5")	20
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	30
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
✓ Field/Pasture ___ Industrial
___ Agricultural ✓ Residential
___ Other:

Canopy Cover
✓ Open ___ Partly shaded
___ Shaded

Indicate the dominant type
___ Trees ___ Shrubs
✓ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ✓ Yes ___ No
Wetland ID W-Z2 & W-Z3

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Large pools downstream of culvert with many small fish

STREAM ID S-A3a	**STREAM NAME** UNT to North Fork Fishing Creek
LAT 39.551893 **LONG** -80.545090	**DATE** 10/21/2015
CLIENT EQT	**PROJECT NAME** EEP
INVESTIGATORS SAZ, CS	
WATER TYPE TNW ☐ RPW ☐ NRPW ☑	**FLOW REGIME** Perennial ☐ Intermittent ☐ Ephemeral ☑

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 5.0 ft
Top of Bank Height:
LB 1.5 ft RB 1.5 ft
Water Depth: 0.00 in
Water Width: 0.0 ft
Ordinary High Water Mark (Width): 3.0 ft
Ordinary High Water Mark (Height): 6.0 ft
Flow Direction: East

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
___ Yes ✓ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
___ Flat (0.5/100 ft) ✓ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
✓ No water, stream bed dry
___ Stream bed moist
___ Standing water
___ Flowing water

Velocity
___ Fast ___ Moderate
___ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle % Run %
Pool %

Turbidity
___ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) 100

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	40
Gravel	2-64 mm (0.1"-2.5")	40
Sand	0.06-2mm (gritty)	20
Silt	0.004-0.06 mm	
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	20
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
✓ Field/Pasture ___ Industrial
___ Agricultural ✓ Residential
___ Other:

Canopy Cover
___ Open ✓ Partly shaded
___ Shaded

Indicate the dominant type
___ Trees ___ Shrubs
✓ Grasses ___ Herbaceous

Floodplain Width
✓ Wide > 30ft ___ Moderate 15-30ft
___ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
✓ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

APPENDIX B
WETLAND PHOTOGRAPHS

Photograph Number:	1	**Feature Name:**	W-BB1	**Date:**	07/08/2015
Direction:	NE	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	2	**Feature Name:**	W-BB3	**Date:**	07/09/2015
Direction:	SE	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	3	**Feature Name:**	W-BB2	**Date:**	07/08/2015
Direction:	W	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	4	**Feature Name:**	W-BB9	**Date:**	07/11/2015
Direction:	SE	**Plant Community:**	PFO	**Remarks:**	N/A

Photograph Number:	5	**Feature Name:**	W-BB8	**Date:**	07/11/2015
Direction:	N	**Plant Community:**	PFO	**Remarks:**	N/A

Photograph Number:	6	**Feature Name:**	W-BB7	**Date:**	07/11/2015
Direction:	SE	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	7	**Feature Name:**	W-BB6	**Date:**	07/11/2015
Direction:	NW	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	8	**Feature Name:**	W-BB12	**Date:**	07/13/2015
Direction:	NE	**Plant Community:**	PFO	**Remarks:**	N/A

Photograph Number:	9	**Feature Name:**	W-N1	**Date:**	06/09/2015
Direction:	SW	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	10	**Feature Name:**	W-AA1	**Date:**	07/08/2015
Direction:	SW	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	11	**Feature Name:**	W-AA5	**Date:**	07/10/2015
Direction:	NE	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	12	**Feature Name:**	W-AA6	**Date:**	07/10/2015
Direction:	SW	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	13	**Feature Name:**	W-AA2	**Date:**	07/08/2015
Direction:	S	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	14	**Feature Name:**	W-AA3	**Date:**	07/09/2015
Direction:	S	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	15	**Feature Name:**	W-AA4	**Date:**	07/10/2015
Direction:	S	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	16	**Feature Name:**	W-AA7	**Date:**	07/10/2015
Direction:	SW	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	17	**Feature Name:**	W-AA8	**Date:**	07/11/2015
Direction:	W	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	18	**Feature Name:**	W-M1	**Date:**	10/08/2015
Direction:	N	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	19	**Feature Name:**	W-AA9	**Date:**	07/11/2015
Direction:	E	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	20	**Feature Name:**	W-AA10	**Date:**	07/10/2015
Direction:	E	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	21	**Feature Name:**	W-M3	**Date:**	10/08/2015
Direction:	NW	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	22	**Feature Name:**	W-M4	**Date:**	10/08/2015
Direction:	SW	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	23	**Feature Name:**	W-M2	**Date:**	10/08/2015
Direction:	E	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	24	**Feature Name:**	W-M5	**Date:**	10/08/2015
Direction:	E	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	25	**Feature Name:**	W-M6	**Date:**	10/08/2015
Direction:	E	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	26	**Feature Name:**	W-Z1	**Date:**	10/21/2015
Direction:	S	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	27	**Feature Name:**	W-Z2	**Date:**	10/21/2015
Direction:	N	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	28	**Feature Name:**	W-Z3A	**Date:**	10/21/2015
Direction:	S	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	29	**Feature Name:**	W-Z3B	**Date:**	10/21/2015
Direction:	NE	**Plant Community:**	PEM	**Remarks:**	N/A

APPENDIX C
STREAM PHOTOGRAPHS

Photograph Number:	26	**Feature Name:**	S-BB1	**Date:**	07/08/2015
Direction:	W, Upstream	**Flow Regime:**	Intermittent	**Remarks:**	N/A

Photograph Number:	27	**Feature Name:**	S-BB2	**Date:**	07/08/2015
Direction:	S, Upstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	28	**Feature Name:**	S-BB3	**Date:**	07/08/2015
Direction:	N, Downstream	**Flow Regime:**	Perennial	**Remarks:**	Kelly Run

Photograph Number:	29	**Feature Name:**	S-N1	**Date:**	06/09/2015
Direction:	S, Downstream	**Flow Regime:**	Intermittent	**Remarks:**	N/A

Photograph Number:	30	**Feature Name:**	S-N2	**Date:**	06/09/2015
Direction:	SW, Downstream	**Flow Regime:**	Intermittent	**Remarks:**	N/A

Photograph Number:	31	**Feature Name:**	S-N3	**Date:**	06/09/2015
Direction:	E, Upstream	**Flow Regime:**	Intermittent	**Remarks:**	N/A

Photograph Number:	32	**Feature Name:**	S-AA1	**Date:**	07/08/2015
Direction:	SE, Downstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	33	**Feature Name:**	S-AA2	**Date:**	07/08/2015
Direction:	SE, Downstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	35	**Feature Name:**	S-AA5	**Date:**	07/10/2014
Direction:	S, Across	**Flow Regime:**	Perennial	**Remarks:**	South Fork Tenmile Creek

Photograph Number:	36	**Feature Name:**	S-AA7	**Date:**	07/10/2015
Direction:	NW, Downstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	37	**Feature Name:**	S-AA3	**Date:**	07/08/2015
Direction:	S, Downstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	38	**Feature Name:**	S-AA4	**Date:**	07/09/2015
Direction:	S, Downstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	39	**Feature Name:**	S-AA8	**Date:**	07/10/2015
Direction:	SE, Downstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	40	**Feature Name:**	S-AA9	**Date:**	07/10/2015
Direction:	NE, Upstream	**Flow Regime:**	Ephermeral	**Remarks:**	N/A

Photograph Number:	41	**Feature Name:**	S-AA10	**Date:**	07/10/2015
Direction:	S, Downstream	**Flow Regime:**	Intermittent	**Remarks:**	N/A

Photograph Number:	42	**Feature Name:**	S-AA11	**Date:**	07/10/2015
Direction:	SE, Downstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	43	**Feature Name:**	S-AA12	**Date:**	07/16/2015
Direction:	E, Across	**Flow Regime:**	Perennial	**Remarks:**	Ruff Creek

Photograph Number:	44	**Feature Name:**	S-AA13	**Date:**	07/11/2015
Direction:	NE, Upstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	45	**Feature Name:**	S-AA14	**Date:**	07/12/2015
Direction:	SW, Downstream	**Flow Regime:**	Intermittent	**Remarks:**	N/A

Photograph Number:	46	**Feature Name:**	S-AA15	**Date:**	07/11/2015
Direction:	SE, Downstream	**Flow Regime:**	Perennial	**Remarks:**	South Fork Tenmile Creek

Photograph Number:	47	**Feature Name:**	S-AA24	**Date:**	07/12/2015
Direction:	NW, Upstream	**Flow Regime:**	Intermittent	**Remarks:**	N/A

Photograph Number:	48	**Feature Name:**	S-AA23	**Date:**	07/12/2015
Direction:	NE, Downstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	49	**Feature Name:**	S-AA22	**Date:**	07/12/2015
Direction:	NW, Upstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	50	**Feature Name:**	S-AA21	**Date:**	07/12/2015
Direction:	E, Downstream	**Flow Regime:**	Intermittent	**Remarks:**	N/A

Photograph Number:	51	**Feature Name:**	S-AA20	**Date:**	07/12/2015
Direction:	W, Upstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	52	**Feature Name:**	S-AA17	**Date:**	07/12/2015
Direction:	SW, Upstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	53	**Feature Name:**	S-AA18	**Date:**	07/12/2015
Direction:	NE, Downstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	54	**Feature Name:**	S-AA19	**Date:**	07/12/2015
Direction:	S, Upstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	55	**Feature Name:**	S-AA16	**Date:**	03/18/2014
Direction:	SE, Upstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	56	**Feature Name:**	S-M1	**Date:**	10/08/2015
Direction:	S, Upstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

Photograph Number:	57	**Feature Name:**	S-Z1	**Date:**	10/21/2015
Direction:	N, Upstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	58	**Feature Name:**	S-J63	**Date:**	10/21/2015
Direction:	W, Upstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	59	**Feature Name:**	S-A2a	**Date:**	10/21/2015
Direction:	N, Upstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	60	**Feature Name:**	S-A3a	**Date:**	10/21/2015
Direction:	E, Downstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

APPENDIX D
HYDRIC SOILS LIST

Hydric Soils List
Allegheny County, Pennsylvania

Map Unit Symbol	Map Unit Name	Component Name and Phase	Landforms
At	Atkins silt loam	Atkins	flood plains
BrB	Brinkerton silt loam, 2 to 8 percent slopes	Brinkerton	draws
BrC	Brinkerton silt loam, 8 to 15 percent slopes	Brinkerton	
BrC	Brinkerton silt loam, 8 to 15 percent slopes	Atkins	flood plains
CaB	Cavode silt loam, 2 to 8 percent slopes	Brinkerton	draws
CaC	Cavode silt loam, 8 to 15 percent slopes	Brinkerton	draws
CeB	Caneadea silt loam, 3 to 8 percent slopes	Canadice	lakebeds (relict)
CeB	Caneadea silt loam, 3 to 8 percent slopes	Mill	ground moraines
CoD	Cookport loam, 15 to 25 percent slopes	Andover	mountain slopes
Du	Dumps, coal wastes	Wet spots	depressions
Dw	Dumps, industrial wastes	Wet spots	draws
ErB	Ernest silt loam, 2 to 8 percent slopes	Brinkerton	hills

ErC	Ernest silt loam, 8 to 15 percent slopes	Brinkerton	hills
EvB	Ernest-Vandergrift silt loams, 3 to 8 percent slopes	Brinkerton	hillslopes
EvC	Ernest-Vandergrift silt loams, 8 to 15 percent slopes	Brinkerton	hillslopes
EvD	Ernest-Vandergrift silt loams, 15 to 25 percent slopes	Brinkerton	hillslopes
GvB	Guernsey-Vandergrift silt loams, 3 to 8 percent slopes	Brinkerton	hills
GvC	Guernsey-Vandergrift silt loams, 8 to 15 percent slopes	Brinkerton	hills
GvD	Guernsey-Vandergrift silt loams, 15 to 25 percent slopes	Brinkerton	hills
Gx	Gullied land	Brinkerton	draws
Hu	Huntington silt loam	Atkins	flood plains
Ln	Lindside silt loam	Melvin	flood plains
Ne	Newark silt loam	Brinkerton	depressions
Ne	Newark silt loam	Atkins	flood plains
Ph	Philo silt loam	Atkins	flood plains
TaB	Tilsit silt loam, 3 to 8 percent slopes	Brinkerton	hills
UGB	Urban land-Guernsey complex, gently sloping	Thorndale	draws
URB	Urban land-Rainsboro complex, gently sloping	Ginat	terraces
UWB	Urban land-Wharton complex, gently sloping	Armagh	hills

VcB	Vandergrift-Cavode silt loams, 3 to 8 percent slopes	Brinkerton	hillslopes
VcC	Vandergrift-Cavode silt loams, 8 to 15 percent slopes	Brinkerton	
VcD	Vandergrift-Cavode silt loams, 15 to 25 percent slopes	Brinkerton	
WhB	Wharton silt loam, 3 to 8 percent slopes	Cavode	hills
WhB	Wharton silt loam, 3 to 8 percent slopes	Brinkerton	depressions

Hydric Soils List
Greene and Washington Counties, Pennsylvania

Map Unit Symbol	Map Unit Name	Component Name and Phase	Landforms
Du	Dumps, mine	Wet spots	depressions
Fa	Fluvaquents, loamy	Melvin	flood plains
GdA	Glenford silt loam, 0 to 3 percent slopes	Purdy	terraces
GdB	Glenford silt loam, 3 to 8 percent slopes	Purdy	terraces
GdC	Glenford silt loam, 8 to 15 percent slopes	Purdy	terraces
Hu	Huntington silt loam	Atkins	flood plains
LbA	Library silty clay loam, 0 to 3 percent slopes	Purdy	terraces
Nw	Newark silt loam	Atkins, Brinkerton	flood plains, depressions
Py	Purdy silt loam	Purdy	terraces
Sk	Skidmore gravelly loam	Melvin	flood plains
UdB	Udorthents, smoothed, gently sloping	Wet spots	depressions
UdD	Udorthents, smoothed, moderately steep	Wet spots	depressions
Modified from Hydric Soils of the United States (NRCS 2014)			

Hydric Soils List
Wetzel County, West Virginia

Map Unit Symbol	Map Unit Name	Component Name and Phase	Component Percent	Landforms
EkB	Elk silt loam, 3 to 8 percent slopes	Melvin	3	Flood plains
GsB	Glenford silt loam, 3 to 8 percent slopes	Melvin	5	Flood plains
Hn	Huntington silt loam	Melvin	5	Flood plains
No	Nolin loam	Melvin	5	Flood plains
Sk	Skidmore gravelly loam	Melvin	3	Flood plains
Modified from Hydric Soils of the United States (NRCS 2014)				

APPENDIX E
RESUMES

Experience Summary

Mr. Heule's experience as a Biologist and Environmental Planner includes a background in jurisdictional wetlands and other Waters of the United States delineations, Federal Endangered Species Act (ESA), state and local endangered and threatened species, Bald and Golden Eagle Protection Act (BGEPA), and state-listed noxious weeds. Mr. Heule has conducted biological resource field studies in 7 states, and has conducted desktop housing assessments for communities in North Dakota and Wyoming. Additionally, Mr. Heule is a licensed (Backcountry) Emergency Medical Technician, with more than 3 years of experience with patient care, public safety, and emergency response coordination. He has been recognized for his commitment to safety through Tetra Tech's monthly safety awards twice. Mr. Heule is currently enrolled in Graduate-level studies at the University of Colorado Denver, where he is studying Geographic Information Systems (GIS. These studies include an emphasis on ArcGIS, an Environmental Systems Research Institute (Esri) supported software useful for application in environmental planning with mapmaking, geospatial analytic, and data visualization capabilities.

Education

BA, Ecology and Evolutionary Biology, University of Colorado–Boulder, 2014
At-sea reinforced coursework (semester) with field practicum in 13 countries in Africa, Asia, and Central America, University of Virginia, 2011

Registrations/Certifications

Graduate Certificate in GIS, University of Colorado, Denver, in process

Corporation Project Experience

Wetland Scientist, April–August 2015
Equitrans, Mountain Valley Pipeline Project, West Virginia, Virginia, and Pennsylvania
Mr. Heule led field reconnaissance in teams of three wetland delineators for a proposed 42-inch natural gas pipeline project. Mr. Heule's specific tasks included providing skills identifying hydric soils and hydrophytic vegetation to delineate jurisdictional wetlands and other waters of the U.S. In addition, Mr. Heule was in charge of safety and well-being, quality of work, and overall progress for the team. Wetlands and other Waters of the U.S. were mapped using Trimble® software. Mr. Heule has over 8 weeks experience delineating wetlands and other Waters of the U.S. in the Northern Piedmont Region. This project will run through the summer of 2016.

Biologist, March 2015
NextEra Energy Resources, LLC Wind Energy Center, Taylor, ND
Mr. Heule assisted in field reconnaissance to microsite wind turbines to avoid wetlands and other waters of the United States. If impacts to wetlands and waters cannot be avoided, follow-on desk analysis of wetland and surface water resources, field reconnaissance of these resources, and wetland delineations and Section 404 permitting as necessary.

Environmental Planner, March 2015–Present
Housing and Socioeconomic Study, Mercer and Emmons Counties, ND; Platt County, WY
Mr. Heule analyzed population and economic data to support housing and economic studies for rural communities in North Dakota and Wyoming. Large energy projects bring both benefits and challenges to small, rural communities. Challenges include increasing populations, increases in crime, and impacts to roads and infrastructure and services such as schools and healthcare. Mr. Heule's specific tasks included the analysis of community daycare service capabilities, community member interviews, census data analysis, and housing market analysis. The goal of the housing studies is to predict future housing

trends and determine the needs of the local workforce from an economic perspective. These studies will continue through December of 2015.

Biologist, May 2015–Present
Xcel Energy, West Main Natural Gas Pipeline, Boulder County, CO
Mr. Heule conducted tree inventories and weed surveys to make recommendations to Excel Energy for the purpose of creating an integrated noxious weed management plan and tree preservation plan as mandated by Boulder County. Tasks have included desktop analysis, independent field reconnaissance, and reporting findings and recommendations. This project will be completed in the fall of 2016.

Biologist, August 2015
Public Service Company of Colorado (PSCo), Sterling Ranch Natural Gas Pipeline, Douglas County, CO
Mr. Heule conducted desktop analysis, field reconnaissance, and report writing to provide recommendations to avoid protected biological resources in the Backcountry Wilderness Area of Highlands Ranch. Mr. Heule identified the need for burrowing owl surveys, wetland and other Waters of the U.S. delineation, and raptor surveys within the project area. Mr. Heule completed the report that describes Tetra Tech's recommendations.

Wetland Scientist, August 2015–Present
NextEra and Norvento Energy, Ninnescah and Bloom Wind Farms, Platt and Ford Counties, KS
Mr. Heule conducted micrositing, desktop analysis, and wetland delineation efforts for a proposed windfarm infrastructure that included turbines, access roads, and transmission lines. Specific tasks included plant and soil identification in the Great Plains region, playa wetland jurisdictional determination, and micrositing turbines to avoid water resources on-the-fly. These projects will end in 2016.

Biologist, February 2015
NextEra Energy, Dickenson Wind Farm, ND
Mr. Heule conducted desktop analysis, field reconnaissance, and reporting to provide recommendations to NextEra Energy to avoid Clean Water Act Section 404 permitting for a proposed wind farm in North Dakota. Mr. Heule used his knowledge and understanding of the U.S. Army Corps of Engineers jurisdiction over wetlands and other Waters of the U.S. to map avoidance areas for NextEra.

Biologist, May 2015
Mora Transmission Line, LLC, Mora Transmission Line Project, Mora County, NM
Mr. Heule provided recommendations to avoid biological resources for a proposed replacement to a transmission line in Mora County, New Mexico. Mr. Heule completed a desktop analysis and field reconnaissance to identify biological resources protected under the federal Endangered Species Act (ESA), Bald and Golden Eagle Protection Act (BGEPA), Clean Water Act (CWA), and local-level environmental protection legislation. Mr. Heule completed the report that describes Tetra Tech's recommendations.

Previous Experience

Clinical Service Technician, 2014
Apria Healthcare
Provided care to geriatric and pediatric patients by developing a plan for domestic respiratory therapy.

Intern—CO-Labs, 2014
Teacher—Outdoor Labs
Taught environmental science lessons to middle school students on a volunteer basis.

Resident Advisor (RA) –University of Colorado at Boulder 2013-2014
Recognized by peers for outstanding leadership to colleagues with the Staff Leadership Award.

Emergency Medical Technician (EMT), 2012–2014
University of Colorado at Boulder EMS
Provided emergency care, improved event safety, and worked with other agencies to coordinate transport to local hospitals.

Discipline Codes

Biologist
Urban/Regional Planning

Skill Sets

Biological
Biological assessments
Wetlands delineation

Social
Planning

Other
Geographic Information Systems (GIS)

Related Company Information

Payroll Number: 546590
Employment Status: Part-time
Preferred First Name: John
Office Location: Denver, CO
Hire Date: 2/2/2015
Years with Other Firms: 3
Years with Current Firm: >1
Total Years of Experience: 3
Supervisor: Steve Yarbrough, Biologist
Office Phone: (303) 291-6260
Cell Phone: (303) 253-1647
Fax:
E-mail Address: john.heule@tetratech.com
Other E-mail Address (if any): john.heule@gmail.com
Resume Last Revised: 9/8/2015

Angela Lands

Environmental Scientist

EXPERIENCE SUMMARY

Mrs. Lands is an Environmental Scientist with over four years progressive experience in environmental management, research and consulting. She has considerable experience working with multiple teams of professionals to meet the needs of clients and the company.

She has performed and provided project level management for numerous Phase I/II Environmental Site Assessments. Mrs. Lands has supervised, coordinated and/or conducted field activities involving soil, soil gas, paint, water, and air sampling, stormwater and groundwater quality monitoring programs, full delineations, waste characterizations, and risk assessments of contaminated soil and/or groundwater, land use determination, comprehensive stream assessments, USACE regulated wetland delineations, field observation for underground storage tank (UST) removal projects, and site evaluations for Spill Prevention Control and Countermeasure Plans (SPCC). She is an experienced field supervisor who has managed soil and groundwater field investigations such as monitor well installation and excavations of soils impacted with chlorinated solvents and oil for the petroleum industry. Mrs. Lands has assisted with groundwater and soil subsurface environmental remediation investigations, and supervised regulatory interaction and reporting. Additionally, she is experienced with managing and maintaining comprehensive project documentation and employing detailed projects plans to monitor and track project progress and performance.

Mrs. Lands has extensive experience developing, preparing and executing various written deliverables such as environmental assessment reports, compliance reports, Health and Safety Standard Operating Procedures, risk assessment summaries, SPCC plans, delineation reports, and soil and water quality summaries for federal, state and local regulatory agencies, petroleum clients, and academia. In addition, Mrs. Lands has prepared field logs for soil borings and installation of monitoring wells, soil, paint, air, and water sampling logs, and has developed health and safety plans in compliance with company, state and federal regulations. Mrs. Lands has assisted with the development of various National Environmental Policy Act (NEPA) research, documentation and reporting projects.

Other qualifications include stormwater management, Texas Railroad Commission (RRC) and Texas Commission on Environmental Quality (TCEQ) regulatory compliance procedures for air, water, and petroleum. TCEQ compliance includes reviewing air permit applications, drafting Air Permits by Rule (PBR) applications and assisting with PBR registrations. RRC compliance includes assistance with permitting, production reporting, well completion, etc. of oil and gas wells, facilities and activities.

EDUCATION

B.A., Physical Geography, Environmental Science Specialization, 2010, Kennesaw State University

CERTIFICATIONS

US Army Corps of Engineers Wetland Delineation, certificate #7105, 12/2013

TRAINING

Stormwater Permitting and Management, TEEX, 5/2014

Project Management, PM Level 1, Tetra Tech, NUS, 2/2014

Heartsaver First Aid, CPR, AED, American Heart Association, 10/2013

OSHA 29 CFR 1910.1200 Hazard Communications, Tetra Tech, NUS, 10/2013

OSHA 29 CFR 1910.120 8-Hr Refresher, Tetra Tech, NUS, 10/2013

Confined Spaces, JJ Keller, 6/2013

Hydrogen Sulfide Training, QSSI, 12/2012

NEPA refresher, BLM, 11/2012

Air Permitting, TCEQ, 10/2012

Watershed Management, EPA, 10/2012

OFFICE

San Antonio, Texas

YEARS OF EXPERIENCE

4+

YEARS WITH TETRA TECH

2

RELEVANT EXPERIENCE

- *Environmental Analysis/Management*

Environmental Scientist; HPIP Gonzales Holdings, LLC; Gonzales County, TX; May 2013 – January 2014. Served as a team member assisting with biological surveys, stream assessments, and identification and delineation of wetlands in and around a proposed 25 mile gas pipeline corridor.

Environmental Scientist; Rooney Engineering/Sunoco; Mitchell, Nolan, Taylor, Shackelford, Callahan, Stephens, Eastland, Erath, Somervell, Johnson, and Hill counties in North Texas; October 2013-April 2014. Served as a team member assisting with biological surveys, stream assessments, and identification and delineation of wetlands in and around 325 miles of proposed gas pipeline corridors.

Environmental Science student, KSU; City of Acworth, GA; Acworth, GA; October 2009. Served as team member responsible for the biological, ecological, hydrological assessment and delineation of wetlands of streams leading into Lake Acworth. Final report of findings was presented to the City of Acworth.

- *Sampling (Groundwater, Soil, Paint)*

Environmental Scientist; Halliburton; Laredo, TX, May 2014. Obtained groundwater samples from three monitor wells using low flow pump method and prepared samples for laboratory analysis.

Environmental Scientist; Breitburn Florida, LLC; LeHigh Acres, FL; March 2013-Present. Conducts bi-annual groundwater monitoring at three tank batteries in the LeHigh Acres area. Obtain groundwater samples from 15 monitor wells by bailing/purging, low-flow, and/or submersible pump methods and prepares samples for laboratory analysis. Analytical results are reviewed and chronicled in water quality report format after each sampling event as a client deliverable.

Environmental Scientist; Gibsons Energy; Stockdale, TX; April-May 2014. Obtained soil samples from excavated areas around two plugged and abandoned oil wells to verify or refute the presence of hydrocarbon impacted soils. Samples were collected in jars using grab sample method and prepared for laboratory analysis. Screened samples for volatile organic vapors by way of head space analysis using a Photo Ionization Detector. Analytical results were reviewed and chronicled in report format as a client deliverable.

Environmental Scientist; Flint Hill Resources; Austin, Waco, San Antonio, TX; June 2013-Present. Obtains paint samples from crude oil storage tanks on an as needed basis to verify or refute lead content. Samples are collected using the cold scrape method then prepared for laboratory analysis. Analytical results were reviewed and chronicled in report format as a client deliverable after each sampling event.

Environmental Scientist; SM Energy; Beckham, Greer, Washita, Harmon, Roger Mills counties in Oklahoma, Wheeler and Collingsworth counties in Texas and Bossier Parish, Louisiana; December 2012-March 2013. Conducted pre-development sampling of soil and water in the vicinity of proposed drilling areas. Obtained surface water and groundwater samples by bailing/purging, low-flow, and/or submersible pump methods. Obtained soil samples in jars using grab sample method. All samples were prepared for laboratory analysis. Analytical results were reviewed and chronicled in report format as a client deliverable.

Environmental Scientist; Koch Pipeline, Sunfield Station; Starr County, TX; April 2013. Obtained samples of contaminated soil near a degraded pipeline. Samples were collected in jars using grab sample method and prepared for laboratory analysis.

Environmental Scientist; Tervita/Shell Pilanco; Catarina, TX; January 2013. Obtained samples of remediated soil on various oil pads on the property. Samples were collected in jars using grab sample and/or auger method and prepared for laboratory analysis.

- *Phase I/II Environmental Site Assessments*

Environmental Scientist/Project Manager; Globe Energy Services, LLC; Kenedy, Daisetta, Carrizo Springs, TX; May 2014. Conducted Phase I Environmental Site Assessment in accordance with ASTM Standard Practice for Environmental Site Assessments, E 1527-05 and 40 CFR Part 312 to include site reconnaissance, records review, and map and figure production using ArcGIS. Prepared final written report to serve as client deliverable. Project Management duties included developing cost estimate, scope, work authorization, and task delegation.

Environmental Scientist; Gibsons Energy; Stockdale, TX; April 2014. Conducted Phase I Environmental Site Assessment in accordance with ASTM Standard Practice for Environmental Site Assessments, E 1527-05 and 40 CFR Part 312 to include site reconnaissance, records review, and map and figure production using ArcGIS. A limited phase II evaluation was conducted to determine if historical petroleum activities adversely affected the property. This included soil sampling, PID use, and field supervision of subcontractors using magnetometers to locate any anomalies. Produced final written report to serve as client deliverable.

Environmental Scientist/Project Manager; Enviro Vat, Denver City, TX; March 2014. Conducted Phase I Environmental Site Assessment in accordance with ASTM Standard Practice for Environmental Site Assessments, E 1527-13 and 40 CFR Part 312 to include site reconnaissance, records review, and map and figure production using ArcGIS. Prepared final written report to serve as client deliverable. Project Management duties included creating MSA, developing cost estimate, scope, work authorization, and task delegation.

Environmental Scientist; Universal Pressure Pumping, Inc., Atascosa County, TX; February 2014. Conducted Phase I Environmental Site Assessment in accordance with ASTM Standard Practice for Environmental Site Assessments, E 1527-13 and 40 CFR Part 312 to include records review and map and figure production using ArcGIS. Prepared final written report to serve as client deliverable.

Environmental Scientist/Project Manager; Globe Energy Services, LLC; Nixon, TX; January 2014. Conducted Phase I Environmental Site Assessment in accordance with ASTM Standard Practice for Environmental Site Assessments, E 1527-05 and 40 CFR Part 312 to include site reconnaissance, records review, and map and figure production using ArcGIS. Prepared final written report to serve as client deliverable. Project Management duties included developing cost estimate, scope, work authorization, and task delegation.

Environmental Scientist; HPIP Gonzales Holdings, LLC; Gonzales County, TX; May 2013. Conducted Phase I Environmental Site Assessment in accordance with ASTM Standard Practice for Environmental Site Assessments, E 1527-05 and 40 CFR Part 312 to include site reconnaissance, records review, and map and figure production using ArcGIS. Prepared final written report to serve as client deliverable.

Environmental Scientist; D.R. Horton; Weld County, CO; May 2013. Conducted records review and report preparation for Phase I Environmental Site Assessment in accordance with ASTM Standard Practice for Environmental Site Assessments, E 1527-00 and 40 CFR Part 312. Created report for use in final environmental site assessment.

Environmental Scientist; Pioneer Natural Resources Company; LaSalle County, TX; January 2013. Conducted Phase I Environmental Site Assessment in accordance with ASTM Standard Practice for Environmental

Site Assessments, E 1527-05 and 40 CFR Part 312 to include records review and map and figure production using ArcGIS. Prepared final written report to serve as client deliverable.

Environmental Scientist; McJunkin Red Man Corporation; Asherton, Crane, Midland, Odessa, Kermit, and San Angelo Texas; Carlsbad, Artesia, and Eunice New Mexico; November-December 2012. Conducted 10 Phase I Environmental Site Assessments in accordance with ASTM Standard Practice for Environmental Site Assessments, E 1527-05 and 40 CFR Part 312 to include records review and map and figure production using ArcGIS. Prepared final written report to serve as client deliverable.

Environmental Scientist; Southern Company; Henderson County, TX; November, 2012. Conducted Phase I site reconnaissance in accordance with American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments, E 1527-05 and 40 CFR Part 312. Created report for use in final environmental site assessment.

Environmental Scientist; Northeast Crossing Neighborhood Revitalization, LTD; San Antonio, TX; November 2012. Conducted Phase I site reconnaissance in accordance with American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments, E 1527-05 and 40 CFR Part 312. Created report for use in final environmental site assessment.

- *Air Quality*

Environmental Scientist; Concho Operating, LLC; San Antonio and Houston, TX; October-November 2012. Assisted with details of TCEQ Permit By Rule (PBR) Applications, PBR registration (PI-7), and supporting documentation for PBR Claim Modification.

- *Oil and Gas*

Environmental Scientist; Pyote Water Systems, LLC; Carrizo Springs, TX; June 2014. Conducted inspection of a Saltwater Disposal Facility for the development of the SPCC Plan. Activities included collection of all tank, pump, and containment information on the site, measuring dimensions of containments and secondary containments, and taking photographs of facility. Findings and photos were recorded for use in SPCC plan.

Environmental Scientist; Pioneer Natural Resources Company; various facilities in Eagle Ford Shale Play; January 2013-Present. Gathers details on oil storage locations, tanks, pumps, containments and other on-site equipment of point of delivery (POD) sites, saltwater disposal units, compressor stations, and other oil/gas facilities for creation or revisions of SPCC plans. Creates SPCC plans by reporting findings, along with preventive maintenance, safety inspections, emergency response procedures, training for workers involved with handling oil, inspections and maintenance schedules, and facility operations guidelines. Creates site maps, diagrams and figures using AutoCad and ArcGIS. Prepares final written SPCC plan to serve as client deliverable.

Environmental Scientist; Parsley Petroleum; Reagan and Upton Counties, TX; January-February 2014. Performed site assessments of injection wells, salt water disposal units, and production facilities for environmental audit purposes. Activities included collection of all tank, pump, and containment information on the site, measuring dimensions of containments and secondary containments, taking photographs of facility and conducting NORM Surveys.

❖ *Geotechnical*

Environmental Scientist; Halliburton; Laredo, TX; May 2014. Served as field supervisor for soil boring and drilling, installation, and completion of monitor well by drilling contractor. Collected groundwater samples prior to well completion. Screened soil borings for volatile organic vapors by way of head space analysis using a Photo Ionization Detector. Surveyed elevation at each monitor well relative to mean sea level using a TopCon Laser Level, measured groundwater depth at each well, and used the data for the development of a groundwater gradient map.

❖ *Remediation*

Environmental Scientist; Occidental Petroleum Company (Oxy); Chaves County, NM; September-October 2013. Provided oversight of excavation, transportation and liner installation of assessment area. Conducted assessment and remediation of contaminated soils at abandoned oil and gas facility. Collected samples from excavated soil to delineate oil spill. Conducted field analysis to determine contamination levels. Prepared samples for further laboratory analysis, reported analytical findings and delineation details.

Environmental Scientist; Cimarex; Eddy County, NM; August 2013. Provided oversight of excavation, transportation and liner installation of assessment area. Conducted assessment and remediation of contaminated soils at an active oil and gas facility. Collected samples from excavated soil to delineate oil spill. Conducted field analysis to determine contamination levels. Prepared samples for further laboratory analysis, reported analytical findings and delineation details.

❖ *Environmental Compliance*

Environmental Scientist; Forge Energy; San Antonio, TX; January 2014-Present. Supervises a regulatory compliance team conducting compliance reviews and regulatory audits. Team is also responsible for permitting, production, and completion reporting for the client's oil and gas facilities in southwest Texas.

❖ *NEPA*

Contract Specialist; US Army Corps of Engineers; Mountain Pine, AR; 2001-2004. Assisted in the preparation of NEPA documents in accordance with the Council on Environmental Quality (CEQ) regulation 40 CFR 1500-1508. Documents included Environmental Information Documents, Environmental Assessments, Environmental Impact Statements, and Findings of No Significant Impact.

❖ *Health and Safety*

Environmental Scientist; Forge Energy, San Antonio, TX; May 2014. Provided assistance in the development of Standard Operating Procedures for Health and Safety. Topics included Benzene Awareness, Hydrogen Sulfide Awareness, Stop Work Initiative, Respiratory Protection, and Personal Protective Equipment.

CHRONOLOGICAL HISTORY

- Environmental Scientist, Tetra Tech, Inc., October 2012-present, San Antonio, TX.
- Contract Specialist, US Army Corps of Engineers, 2001-2007, Mountain Pine, AR; Cartersville, GA.
- Contract Closeout Administrator; US Army Corps of Engineers and US Agency for International Development, May 2004-January 2005, Baghdad, Iraq
- US Army, 1994-1996, Fort Carson, CO and Uijongbu, South Korea
- US Army Reserves, 1997-2000, Fort Belvoir, VA and New Boston, TX.

SCIENTIFIC/TECHNICAL PUBLICATIONS

N/A

MEMBERSHIPS

Geological Society of America
National Groundwater Association
Project Management Institute

AWARDS

- Global Engagement Certificate, Kennesaw State University, November 2010 - Recognized achievements of valuable learning in areas of global perspectives, intercultural skills, environmental awareness and global citizenship.
- Commander's Award for Civilian Service, U.S. Department of the Army, November 2004 - An honorary award presented by the Department of the Army to civilian employees for commendable service or achievement.
- Medal for Global War on Terrorism, U.S. Department of Defense, November 2004 - Service medal awarded for direct support in service to the Global War on Terrorism.
- Various military awards, U.S. Army, January 1993-January 1996

TETRA TECH

Jason McGuirk
Wetland/Environmental Scientist IV

EXPERIENCE SUMMARY

Mr. Jason McGuirk has six years of professional experience in wetland delineation, permitting, fisheries and wildlife, and stream assessments and classification in Pennsylvania, New York, Ohio, and Alaska. Mr. McGuirk has conducted hundreds of wetland delineations, stream evaluations as well as conducted and produced habitat assessments, and post monitoring impact statements and assessments on over 800 miles of proposed natural gas pipeline, and fifty plus proposed well pad sites. He has extensive knowledge in watercourse classification and assessment including the Rosgen method. In particular attention of his has been focused on fisheries habitat and macro-invertebrate work, with over fifty miles of stream classifications in Alaska. Mr. McGuirk's educational background is in Fisheries and Aquaculture with a minor focus in Marine Biology and Wildlife management.

RELEVANT EXPERIENCE

Environmental Scientist III; Sunoco Logistics; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects, Engendered Species Surveys; Reptilia (*Glyptemys muhlenbergii*), Plantae (*Ellisia nyctelea*); Pennsylvania. Segments 1, 2, and 3 wetlands field lead, and crew leader. Responsibilities include organizing and conducting all field work operations for multiple wetlands crews, wetland delineations and stream assessments for the proposed 450 mile Pennsylvania Pipeline Project. Additional work included proposing potential re-route on an environmental basis.

Environmental Scientist III; MarkWest Liberty Midstream & Resources, LLC; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects; Pennsylvania. Responsible for performing and assisting with wetland delineations for various proposed natural gas pipeline projects in southwestern Pennsylvania. Specific tasks included field survey, report preparation, and wetland functional assessments.

Environmental Scientist III; MarkWest Ohio Gathering Company, LLC; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects; Ohio. Responsible for performing and assisting with wetland delineations for various proposed natural gas pipeline projects in eastern Ohio. Specific tasks included field survey, report preparation, and completion of Ohio EPA specific wetland and stream assessments.

EDUCATION

B.T. Fisheries and Aquaculture, SUNY Cobleskill, 2011T

REGISTRATIONS

Wild Plant Management Permit, PA, 2014, Permit # 14-651

AREA OF EXPERTISE

Wetland Delineation and Stream Identification, Fisheries, and Botanical Surveys

TRAINING/CERTIFICATIONS

Winter Vegetation ID, Rutgers University, 2012

Amtrak Contractor Certification, 2014

Certified Wetland Assessment Delineator, NY, 2009

OFFICE

Pittsburgh, PA

YEARS OF EXPERIENCE

6+

YEARS WITH TETRA TECH

2+

Environmental Scientist III; Gulfport Energy Corporation; Wetland Delineations for Miscellaneous Natural Gas Well Pad Projects; Ohio. Responsible for performing and assisting with wetland delineations for various proposed natural well pads southeastern Ohio. Specific tasks included field survey, report preparation, PCN preparation, and completion of Ohio EPA specific wetland and stream assessments.

Environmental Scientist III; MarkWest Liberty Midstream & Resources, LLC; Wetland Delineation and Engendered Species Survey (*Ranunculus flabellaris and Alopecurus aequalis*) for Vanport to Butler Gas Pipeline; Butler County, Pennsylvania. Responsible for performing and assisting with wetland delineation and endangered species survey along pipeline right-of-way. Specific tasks included field survey and report preparation.

Environmental Scientist III; Antero Resources Appalachian Corp.; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects; Ritchie and Doddridge Counties, West Virginia. Responsible for performing and assisting with wetland delineations for various proposed natural gas well pads and access roads in northern West Virginia. Specific tasks included field survey and report preparation.

Wetland & Watercourse Biologist; Chesapeake Energy; Schoharie County, PA; November 2011 to October 2012. Responsible for conducting wetland delineations for proposed pipe line routes and reroutes. Performed PA Rapid Assessments, stream evaluation, and preparation of wetland report for 30 miles of pipeline in Northeastern Pennsylvania.

Wetland & Watercourse Biologist; Southwest Energy L.P; Schoharie County, PA; November 2011 to October 2012. Responsible for conducting wetland delineations on proposed Well pad and compressor sites. Performed PA Rapid Assessments, stream evaluation, and preparation of wetland report for 15 proposed well pad locations in Northeastern Pennsylvania.

Wetland & Watercourse Biologist; Southwest Energy L.P; Susquehanna County, PA; November 2011 to October 2012. Responsible for conducting wetland delineations on proposed Well pad and compressor sites. Performed PA Rapid Assessments, stream evaluation, and preparation of wetland report for 20 proposed well pad locations in Northeastern Pennsylvania.

Wetland & Watercourse Biologist; Chesapeake Energy; Carroll, Jefferson County, OH; November 2011 to October 2012. Responsible for conducting wetland delineations for proposed pipe line routes and reroutes. Performed ORAM and QHEI Assessments, and preparation of wetland report for 30 miles of pipeline in Eastern Ohio.

Wetland & Watercourse Biologist; Shell Oil; Butler County, PA; November 2011 to October 2012. Responsible for conducting wetland delineations for proposed pipe line routes and reroutes. Performed PA Rapid Assessments, stream evaluation, and preparation of wetland report for 40 miles of pipeline in Western Pennsylvania.

Wetland & Watercourse Biologist; Chesapeake Energy; Schoharie County, PA; November 2011 to October 2012. Responsible for conducting Indiana Bat habitat surveys on multiple proposed natural gas pipelines in Northeastern Pennsylvania.

Wetland & Watercourse Biologist; Chesapeake Energy; Schoharie County, PA; November 2011 to October 2012. Responsible for conducting post construction habitat monitoring and assessment of constructed natural gas pipelines in Northeastern Pennsylvania.

CHRONOLOGICAL HISTORY

Wetland Environmental Scientist IV; Tetra Tech, Inc.; Pittsburgh, PA, June 2014 - Present

Wetland Environmental Scientist III; Tetra Tech, Inc.; Pittsburgh, PA, February 2013 - June 2014

Wetland & Watercourse Biologist; Hanover Engineering & Associates; Towanda, PA, November 2011 - October 2012

Assistant Hatchery Manager; SUNY Cobleskill; Cobleskill, NY, September – May of 2009- 2011

Biological Fisheries Technician, US Forest Service; Thorne Bay, AK, May 2010 - August 2010

Fisheries Technician, Cook Inlet Aquaculture Association, Kenai, AK, May 2009 – August 2009

SCIENTIFIC/TECHNICAL PUBLICATIONS

- McGuirk, J, M, "Walleye (*Sander vitreus)* spawning movements and habitat utilization in Otsego Lake, NY, 2011

MEMBERSHIPS

- N/A

AWARDS

- David E. Moorehouse Award for Outstanding Junior in Fisheries and Aquaculture B.T.

TETRA TECH

Cody R. Stoliker

ENVIRONMENTAL SCIENTIST I

EXPERIENCE SUMMARY

Cody R. Stoliker has approximately 1 year of professional experience in wetland delineation, permitting, and stream assessments and classification in Pennsylvania, New York, Ohio, and West Virginia. With 4 years of fisheries and wildlife management experience, specializing in large game conservation, Mr. Stoliker has technician experience working with bear, elk, moose, deer, and wolves in Wyoming, as well as biologist work with whitetail deer, red stag, feral hogs, and the endangered American Burying Beetle in Oklahoma along pipeline routes where he produced habitat assessments, post monitoring impact statements and performed population control. Mr. Stoliker is assisting Tetra Tech field leads and other environmental scientists to assess and delineate streams and wetlands along natural gas pipeline routes, access roads, right-of-ways, and well pad sites. Cody R. Stoliker's educational background is in Wildlife Management with a minor focus in wetland assessment/delineation and fisheries.

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RELEVANT EXPERIENCE

Environmental Scientist I; Sunoco Logistics; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects Pennsylvania. Responsible for performing and assisting with wetland delineations and stream assessments for the proposed Pennsylvania Pipeline Project. Other responsibilities included report preparation and wetland functional assessments.

Environmental Scientist I; MarkWest Liberty Midstream & Resources, LLC; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects; Pennsylvania. Responsible for performing and assisting with wetland delineations for various proposed natural gas pipeline projects in southwestern Pennsylvania. Specific tasks included field survey, report preparation, and wetland functional assessments.

Environmental Scientist I; MarkWest Ohio Gathering Company, LLC; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects; Ohio. Responsible for performing and assisting with wetland delineations for various proposed natural gas pipeline projects in eastern Ohio. Specific tasks included field survey, report preparation, and completion of Ohio EPA specific wetland and stream assessments.

EDUCATION

Bachelor of Technology, Wildlife Management, 2013, State University of New York at Cobleskill

AREA OF EXPERTISE

Large Game Wildlife Management & Conservation, Wetland Assessment

REGISTRATIONS/ AFFILIATIONS

Ducks Unlimited 2012- Present

Rocky Mountain Elk Foundation 2013 – Present

National Wild Turkey Federation 2013 - Present

TRAINING/CERTIFICATIONS

Certified Wetland Assessment Delineator, NY, 2010

NYS Certified Class A Interior Firefighter

OFFICE

Tetra Tech OGA
Pittsburgh, PA

YEARS OF EXPERIENCE

1

YEARS WITH TETRA TECH

1

SCIENTIFIC/TECHNICAL PUBLICATIONS

N/A

CHRONOLOGICAL HISTORY

Environmental Scientist I, Tetra Tech, 2014-2015, Pittsburgh, PA

Wildlife Biologist/Ranch Manager, Oklahoma Trophy Ranch, 2013-2014, Allen, OK

Wildlife Management Technician, Rolling Thunder & Rim Ranches, Spring-Fall 2013, Bondurant, WY

Assistant Herdsman, Bison Island, 2012-2013, Sharon Springs, NY

Avian Survey Technician, NYS Dept. of Environmental Conservation, Winter 2011, Albany NY

TETRA TECH

Stephanie A. Zabowski Lieb
Environmental Scientist III

EXPERIENCE SUMMARY

Ms. Stephanie Zabowski Lieb is a wetland/environmental scientist with 5+ years of experience in wetland delineation and stream evaluation, and rare, threatened & endangered botanical surveying and assessment, throughout Pennsylvania, Ohio, and West Virginia. This includes preparation of wetland delineation and stream evaluation reports, botanical reports, US Army Corps Joint and Nation Wide Permits, and PA Department of Environmental Protection General Permits. Stephanie has additional experience preforming geographic information systems (GIS) data processing and figure creation using ArcGIS10.1. She also has experience performing bat hibernaculum and summer roost tree habitat surveys in West Virginia.

RELEVANT EXPERIENCE

Wetland/Environmental Scientist III; Sunoco Logistics; OPP Natural Gas Pipeline Projects, Ohio and West Virginia; August 2015 to present. Responsibilities included aiding in wetland delineations and stream assessments for the proposed 70 miles of the Ohio Pipeline and West Virginia Pipeline Projects.

Wetland/Environmental Scientist III; MarkWest Liberty Midstream & Resources, LLC; Fox to Houston Natural Gas Pipeline Project, Washington County, PA; August 2015 to present. Responsible for conducting wetland delineations and stream assessments for the approximate 1 mile of proposed pipeline.

Environmental Scientist; Pittsburgh Botanic Garden; Kentucky Hollow Site, Allegheny County, PA; 2015. Responsible conducting wetland delineations and stream assessments for the approximate 40 acre area for proposed construction of trails and passive acid mine drainage treatment system. Prepared wetland delineation and stream assessment reports and associated GIS data processing and figure creation.

Environmental Scientist; EQT Gathering; NIMC S001 Pipeline Project, Allegheny & Washington Counties, PA; 2015. Responsible for conducting botanical survey for wild hyacinth (*Cammasia scilloides*) and snow trillium (*Trillium nivale*), PA state-listed species. Responsible for preparing a botanical survey report.

Environmental Scientist; Grace Baptist Church Additions; Grace Baptist Church, Allegheny County, PA; 2015. Responsible for compiling components of the NPDES permit package and GIS figure creation for church additions.

Environmental Scientist; NiSource Midstream Services, LLC; East Washington Gathering Pipeline Project, Washington County, PA; 2015. Assisted in the transplantation of Short's sedge

EDUCATION

B.S. Environmental Resource Management, The Pennsylvania State University, May 2009

Minors: Wildlife and Fisheries Science, May 2009; Watershed and Water Resources, May 2009

REGISTRATIONS

Wild Plant Management Permit, PA, 2015
Permit # 15-650

AREA OF EXPERTISE

Wetland Delineation and Stream Identification; RTE Botanical Surveys

TRAINING/CERTIFICATIONS

USFWS and WV DNR Sponsored Training for the Identification of the Federally Listed Running Buffalo Clover, Virginia Spirea, and Small Whorled Pogonia, May 2015.

2015 PA Plant Forum and Winter Woody ID workshop. Sponsored by the PA DCNR and Western Pennsylvania Conservancy, April 2015.

USACE 1987 Manual and Regional Supplement Wetland Delineation Training, Swamp School, 2013.

Ohio Rapid Assessment Method for Wetlands Training, Ohio EPA, 2013.

Grasses, Sedges and Rushes Identification Workshop. Taught by Sarah Chamberlain, 2013.

Sedge Identification Workshop. Taught by Dr. Timothy Block and Dr. Ann Rhoads, 2013.

OFFICE

Pittsburgh, PA

YEARS OF EXPERIENCE

5+

YEARS WITHIN FIRM

0

CONTACT

Stephanie.ZabowskiLieb@TetraTech.com

(*Carex shortiana*), a PA state-listed species, as part of mitigation request by PA DCNR. Responsible for associated GIS data processing and figure creation.

Environmental Scientist; West Newton Borough; 100 Pemberton Place Retaining Wall, Westmoreland County, PA; 2015. Responsible for compiling joint permit registration package and associated GIS figure creation for a 130 foot long retaining wall.

Environmental Scientist; Plum Borough School District; Regency Park Elementary School, Allegheny County, PA; 2015. Responsible for conducting wetland delineations and stream assessments for the approximate 5 acre school property. Prepared wetland delineation and stream assessment reports and associated GIS data processing and figure creation.

Environmental Scientist; Freeport Area School Athletic Field; Freeport Area School District, Butler County, PA; 2015. Responsibilities for compiling components of the NPDES permit package and associated GIS figure creation.

Environmental Scientist; EQT Corporation; Above Ground Storage Tank Inspection/Registration, various Counties, WV; 2014. Responsible for GIS data processing, shapefile creation, organization, progress tracking, and mapping of 1600+ above ground storage tanks.

Environmental Scientist; Sunoco Logistics; Pennsylvania Pipeline Project, Cambria County, PA; 2014. Responsible for conducting botanical survey for federally listed Northeastern Bulrush (*Scirpus ancistrochaetus*) along the 23 mile pipeline route in Cambria County, PA and associated data processing.

Environmental Scientist; Bethel Park Municipal Authority; Bethel Park Wastewater Treatment Plant Expansion, Allegheny County, PA; 2014. Responsible for compiling joint permit registration package and associated GIS figure creation for wastewater treatment plant expansion.

Environmental Scientist; EQT Gathering; Yablonski Well Line Project, Washington & Greene Counties, PA; 2014. Responsible for conducting botanical survey for fringed bluets (*Houstonia canadensis*) and tall larkspur (*Delphinium exaltatum*), PA state-listed species, and preparing associated botanical report for 3 mile pipeline project.

Environmental Scientist; Y-Grade Pipeline Project; Hilcorp Energy Company, Columbiana County, OH; 2014. Responsible for conducting wetland delineations and stream assessments of access roads for proposed pipeline project. Prepared wetland delineation and stream assessment report. Assisted in erosion and sediment control monitoring during pipeline construction.

Environmental Scientist; various projects; Antero Resources, various counties, WV; 2014. Responsible for conducting wetland delineations and stream assessments for various proposed pipeline projects. Prepared wetland delineation and stream assessment reports.

Biologist II; NRG Homer City Services, LLC; Homer City Ash Landfill Expansion, Indiana County, PA; 2013. Responsible for conducting wetland delineations and stream assessments for the approximate 130 acre proposed ash landfill expansion Prepared wetland delineation and stream assessment reports and associated GIS data processing and figure creation.

Biologist II; MarkWest Liberty Midstream & Resources, LLC; Burg to Wack Pipeline, Butler County, PA; 2013. Responsible for conducting wetland delineations and stream assessments for the approximate 2.5 mile proposed pipeline. Prepared wetland delineation and stream assessment reports, associated GIS data processing and figure creation, and PA DEP general permit package.

Biologist II; MarkWest Liberty Midstream & Resources, LLC; Bame to Bluestone Pipeline, Butler County, PA; 2013. Responsible for conducting wetland delineations and stream assessments for the approximate 3 mile proposed pipeline. Prepared wetland delineation and stream assessment reports, associated GIS data processing and figure creation, and PA DEP general permit package.

Biologist II; MarkWest Liberty Midstream & Resources, LLC; Stebbins to McElhinney Pipeline, Butler County, PA; 2013. Responsible for conducting wetland delineations and stream assessments for the approximate 3 mile proposed pipeline. Prepared wetland delineation and stream assessment reports, associated GIS data processing and figure creation, and PA DEP general permit package.

Biologist II; EQT Gathering, LLC; NIJU S026 Pipeline, Washington County, PA; 2013. Responsible for conducting wetland delineations and stream assessments for the approximate 2.5 mile proposed pipeline. Prepared wetland delineation and stream assessment reports, associated GIS data processing and figure creation, and PA DEP general permit package. Assisted with archeology field work and GIS figure creation.

Biologist II; MarkWest Liberty Midstream & Resources, LLC; Lynn to Stebbins Pipeline, Butler County, PA; 2013. Responsible for conducting a wetland delineation and stream investigation, as well as a botanical survey for a PA state-listed species. Prepared a wetland delineation and stream identification report, botanical survey report, associated GIS data processing and figure creation, and PA DEP general permit package.

Biologist II; EQT Gathering, LLC; MOME S007 Pipeline, Harrison County, WV; 2012. Responsible for preparing nationwide permit package. Also assisted in Indiana Bat habitat assessment and report preparation.

Environmental Scientist; Williams; Huczko to Clark Pipeline Project, Westmoreland County, PA; 2012. Assisted in surveys for PA state-listed species including purple fringeless orchid (*Platanthera peramoena*), bushy bluestem *(Andropogon glomeratus*), shining ladies' tresses (*Spiranthes lucida*), and mountain bugbane (*Actea podocarpa*). Prepared reports for PA state regulatory agencies and associated GIS figure creation.

Environmental Scientist; Williams; Jury to 6-inch Pipeline Project, Westmoreland County, PA; 2011. Assisted in botanical surveys for PA state-listed species including purple rocket (*Iodanthus pinnatifidus*), scouring rush (*Equisetum x ferrissii*), and Torrey's sedge (*Juncus torreyi*) for a 4 mile natural gas pipeline project. Prepared reports for PA state regulatory agencies and associated GIS figure creation.

Environmental Scientist; XTO; North Discharge/Indiana Extension Pipeline Project, Westmoreland & Indiana Counties, PA; 2011. Assisted in a wetland delineation/stream survey and a survey for PA state-listed species including purple fringeless orchid (Platanthera peramoena), bushy bluestem (Andropogon glomeratus), shining ladies' tresses (*Spiranthes lucida*), leafcup (*Smallanthus uvedalius*), and eastern coneflower (*Rudbeckia fulgida*) for a 12 mile natural gas pipeline project. Prepared reports for PA state regulatory agencies and associated GIS figure creation.

Environmental Scientist; Williams; Gamelands to Jordan Pipeline Project, Greene County, PA; 2011. Assisted in surveys for state-listed species including shining ladies' tresses (Spiranthes ovalis), wild senna (*Senna marilandica*), leaf-cup (*Smallanthus uvedalius*), sourwood (*Oxydendron arboreum*), crested dwarf iris *(Iris cristata*), St. Andrew's cross *(Hypericum stragulum*), harbinger-of-spring *(Erigenia bulbosa*), lobed spleenwort *(Asplenium pinnatifidum*), puttyroot (*Aplectrum hyemale*), single-headed pussytoes (*Antennaria solitaria*), and blue monkshood (*Aconitum uncinatum*). Prepared reports for PA state regulatory agencies.

Environmental Scientist; Range Resources; Multiple Temporary and Permanent Water Pipelines; Washington County, Pennsylvania. 2010 to 2011. Responsible for wetland delineations and stream evaluations on dozens of temporary and permanent water pipelines linking frac water impoundments in the Washington County area. Also prepared wetland delineation and stream assessment reports.

CHRONOLOGICAL HISTORY

Wetland/Environmental Scientist III; Tetra Tech, Inc.; Pittsburgh, PA, August 2015 – Present.

Environmental Scientist – Part-time; Pennsylvania Soil and Rock, Inc. Monroeville, PA, March 2015 – August 2015

Environmental Scientist; Dawood Engineering Inc., Canonsburg, PA, February 2014 – January 2015

Biologist II; AECOM Technical Services, Inc.; Pittsburgh, PA, August 2012 – February 2014

Environmental Scientist; Pennsylvania Soil and Rock, Inc.; Monroeville, PA, April 2010 – August 2012

Black Fly Suppression Program Intern; Pennsylvania Department of Environmental Protection; Pittsburgh, PA, May 2008 – August 2008

SCIENTIFIC/TECHNICAL PUBLICATIONS

- N/A

MEMBERSHIPS

- Botanical Society of Western Pennsylvania

AWARDS

- N/A

ATTACHMENT 15.2 - WETLAND RESTORATION PLAN

No permanent wetland impacts are associated with the Project activities and no Wetland Replacement Plan is required for the Project.

SECTION 16.0

REGISTRATION OF A GP-11

SECTION 16.0 - REGISTRATION OF A GP-11

This section is not applicable since no GP-11 registration has been proposed as part of the Project.