

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment General 1-g**



Mountain Valley Pipeline Project

Docket No. CP16-10-000

## **Fugitive Dust Control Plan**

January 2016

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## 1.0 Introduction

Land disturbance from clearing and excavation activities has the potential to generate a large amount of dust particles. Dust control measures are practices that help reduce surface and air movement of dust from disturbed soil surfaces.

Mountain Valley Pipeline, LLC (MVP) has developed this Fugitive Dust Control Plan to minimize visible fugitive dust emissions at or in proximity to the worksite. Fugitive dust is generated by the mechanical disturbance of granular material exposed to air. Dust from open sources is termed “fugitive” because it is not discharged to the atmosphere in a confined flow stream. This plan outlines dust control methods, that will be used on the Project to reduce fugitive dust emissions and outlines the recommended records to be maintained onsite during construction.

## 2.0 Fugitive Dust Emission Sources

The following Project activities have the potential to generate fugitive dust:

- Vegetation removal;
- Clearing and grading;
- Topsoil removal;
- Cutting and filling;
- Trenching;
- Backfilling;
- Track-out onto roads;
- Bulk material loading, hauling and unloading;
- Vehicle and motorized equipment movement on unpaved access roads;
- Use of material storage piles; and
- Use of parking, staging, and storage area.

Strategic construction sequencing can greatly reduce problematic dust generation. If land disturbance is required, additional temporary stabilization measures should be considered prior to initiating grading activities.

It is the responsibility of the Project contractor(s) and the designated Environmental Inspector(s) to ensure that contractor personnel are complying with all dust control measures and have authority to enforce and require compliance with this plan. The Project supervisors and EI's must ensure that:

1. sources of potential dust generation are identified;
2. specific areas of Project construction will be monitored for fugitive dust generation; and
3. appropriate dust suppression techniques are implemented when dust plumes are visible.

## 3.0 Fugitive Dust Control Methods

Implementation of construction and restoration Best Management Practices and operational controls will be used to mitigate fugitive dust emissions. The project earth disturbance permit will outline specific practices that control fugitive dust, including a construction sequence; use of rock construction entrances; and temporary soil stabilization methods. Operational controls are also implemented, including the use of a reduced speed limit on unpaved access roads as well as sweeping/vacuuming paved roadways when Project-related soils are tracked out onto paved surfaces.

Wet suppression, using water, is the predominate method of suppressing fugitive dust on unpaved roads and gravel pads as it causes finer materials to adhere into larger particles. Increasing the moisture content of the finer materials may be accomplished either naturally or mechanically. Moisture content of unpaved road surfaces can be naturally increased through rainfall. Moisture content can also be increased mechanically through the application of water. The amount of water required to sufficiently control fugitive dust emissions is dependent on the characteristics of materials (e.g., surface moisture content), ambient conditions (e.g., rainfall, humidity, temperature), activities occurring in the area (e.g., vehicle traffic, vehicle weight, speeds), etc. The Contractors will have one or more water trucks available per spread that will load water from approved permitted sources to spray areas for dust control. Disturbed and trafficable areas will be kept sufficiently damp during working hours in dry conditions to minimize wind-blown or traffic-generated dust emissions. Areas to be watered include, but are not limited to, the following:

- the construction corridor for each pipeline, including additional temporary workspace;
- contractor yards and staging areas;
- access roads;
- aboveground facility sites;
- active grading areas;
- un-stabilized areas;
- soil stockpiles; and
- parking areas.

The frequency at which water trucks will spray construction areas will vary based on weather and site conditions. More frequent applications will be required in dry conditions and where dust generation is likely. The following actions are taken to reduce fugitive dust from our operations.

### **3.1 Pipeline Construction Activities and Other Earth Disturbances**

Fugitive dust emissions from vegetation removal, clearing and grading, cutting and filling, topsoil removal, trenching, backfilling and stockpile storage will be controlled to a great extent by following the construction sequencing and disturbing limited areas at a time. If sustained visible dust plumes occur, dust suppression can be achieved by applying water along the travel lane and disturbed land via water truck. Spoil piles left undisturbed for four or more days should be temporarily stabilized with seed and mulch or tarped to prevent wind and water erosion.

### **3.2 Unpaved Roads**

Fugitive dust emissions generated by motorized equipment and miscellaneous vehicle traffic will be controlled by wet suppression as necessary. Fugitive dust emissions from active access roads will be controlled by periodic wetting of surfaces using a water truck. During periods of high truck traffic, road surfaces will be wetted more frequently to minimize dust emissions. Watering will occur less frequently if weather conditions (e.g., rain, frozen surfaces, etc.) are adequate to suppress dust. In addition, MVP will reduce the speed limit on the unpaved roads to control dust emissions

### **3.3 Paved Roads**

Fugitive dust emissions from paved roads will be controlled with a combination of water trucks, power washers, sweeping and/or vacuuming, as appropriate, to minimize the amount of fugitive dust that is generated and built up on the road surfaces.

### **3.4 Track-out onto Roads**

Track-out of loose materials will be controlled using rock construction entrances on access roads that begin at a junction with paved roads; this is done to prevent tracking of mud onto public roadways. Also, the use of sweeping and/or vacuuming will be used if any loose material goes beyond the rock construction entrances.

### **3.5 Deposition on Other Premises**

MVP will take all appropriate actions to prevent the deposition of solid or liquid materials onto any other premises from the Project site and access roads that may cause or contribute to visible dust emissions. Preventive actions may include, but are not limited to dust control, such as wet suppression, the operation of a sweeper truck on paved roadways equipped with water suppression, and the operation of a vacuum truck.

### **4.0 Tackifiers**

Contractor may propose the use of tackifiers to reduce fugitive dust provided that the product to be utilized has been approved by the appropriate federal and state agencies where its application will occur. Contractor will detail the proposed use of any such substances in their dust control plan and provide copies of the material safety data sheets and application procedures. Typically tackifiers used are DustFloc, RoadFloc and Kodiak Super TACKMixes.

### **5.0 Inspection, Monitoring, and Record Keeping**

The construction contractor will implement the dust control measures specified in this plan. All construction personnel will be informed of the measures in this plan. Environmental Inspectors will have primary responsibility for monitoring and enforcing the implementation of dust control measures by the construction contractor. The inspectors will also be responsible for ensuring that these measures are effective and proper documentation is maintained. When environmental conditions are dry, inspection of dust control measures will be conducted daily, and the environmental inspectors will be responsible for recording the following information on a daily basis:

- weather conditions, including temperature, wind speed and wind direction;
- number of water trucks in use;
- incidents where dust concentration is such that special abatement measures must be implemented;
- condition of soils (damp, crusted, unstable, other) on the right-of-way and other construction sites;
- condition of soils (damp, crusted, unstable, other) on access roads;
- condition of track-out pads;
- overall status of dust control compliance.

This information will be incorporated into the environmental inspector's daily report.

## 6.0 Plan Maintenance

A copy of this Fugitive Dust Control Plan will be retained at the spread's job site office and will be made available to the federal and state agencies upon request.

## 7.0 Staff Training

Prior to the start of construction, MVP will conduct environmental and safety training for Company and Contractor personnel. The training program will focus on the Federal Energy Regulatory Commission's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures); other construction, restoration, and mitigation plans, including this *Dust Control Plan*; and applicable permit conditions. In addition, MVP will provide large-group training sessions before each work crew begins construction with periodic follow-up training for groups of newly assigned personnel.

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**ATTACHMENTS**

**Attachment General 1-m**



**MOUNTAIN VALLEY PIPELINE PROJECT**  
Plan for Unanticipated Discovery of Paleontological Resources  
West Virginia and Virginia

**Prepared for**



**Prepared by**



**January 2016**

## **1.0 INTRODUCTION**

Mountain Valley Pipeline, LLC, a joint venture between affiliates of EQT Midstream Partners, LP, NextEra Energy, Inc., WGL Holdings, Inc. Vega Energy Partners, Ltd., and RGC Midstream, LLC. MVP is seeking a Certificate of Public Convenience and Necessity from the Federal Energy Regulatory Commission (FERC) pursuant to Section 7(c) of the Natural Gas Act authorizing it to construct and operate the proposed Project located in 17 counties in West Virginia and Virginia. MVP LLC plans to construct an approximately 301-mile, 42-inch-diameter natural gas pipeline to provide timely, cost-effective access to natural gas for use by local distribution companies industrial users and power generation in the Appalachian, Mid-Atlantic, and southeastern markets.

The 301-mile Project traverses several physiographic provinces and sub-provinces in the Appalachian Basin of West Virginia and Virginia and the Virginia Piedmont. In West Virginia the majority of the proposed route lies within the Western Allegheny Plateau section of the Appalachian Plateaus Province before crossing into the Ridge and Valley Province of Virginia on the southern flank of Peters Mountain (WVGES, 1996). The route turns to the southeast crossing the Great Valley and northern Blue Ridge sub-provinces of Virginia, before descending into the Piedmont Foothills and terminating in the Outer Piedmont sub-province in Pittsylvania County Virginia (Bailey 1999).

### **1.1 Paleontological Setting (Appalachian Basin West Virginia, Virginia)**

The sediments of the Appalachian Basin were originally deposited in a shallow tropical sea that existed throughout the Paleozoic Era, from about 570 million to 240 million years ago. This shallow sea received sediments throughout the Paleozoic Era from adjacent lands to the west and east and subsided under the accumulated weight of these sediments forming the Appalachian Basin (ref). With time and the tremendous pressures from the burial of the thousands of feet of these sediments became sedimentary rock. The current topographic expression within the ancient basin-area is the result of compressional forces (folding and thrust faults) from continental collisions of the North American and European-African plates.

Marine invertebrates flourished in the shallow tropical Paleozoic sea. After dying and falling to the bottoms of these seas, some organisms became fossilized in the sedimentary rock that later formed. Other fossils were also deposited by streams. Terrestrial and plant vertebrate fossils are found in throughout the Project area in scattered locations. More recent Pleistocene floral and faunal remains may be also be encountered in anaerobic environments such as bogs, or in other buried context if the chemical and physical conditions for preservation are favorable.

Neither the West Virginia Geological and Economic Survey, or the Virginia Division of Geology Minerals and Mines does tracks or regulates paleontological finds or the collection of fossils, and overall, it is unlikely that the segments of the pipeline in the Appalachian Basin would cause a material impact to recorded or undiscovered significant paleontological resources. The Pennsylvanian to Permian age cycles of marine to non-marine deposits of shale, siltstone and

sandstone contain marine invertebrate fossils (trilobites, brachiopods, gastropods and crinoids) with occasional disseminated terrestrial plant fossils and some fragmented and rare vertebrate remains of fish and amphibians.

## **1.2 Paleontological Setting (Blue Ridge and Piedmont)**

The Blue Ridge and Piedmont are composed largely of metamorphic and igneous rocks that have been deformed by stress, strain and heat associated with Mesozoic rifting as the super-continent of Pangea broke apart. Though many of these rocks were initially sedimentary and may have contained fossils from Palaeozoic continental seas, the fossils like the surrounding rock in which they are preserved have also been deformed by compressional and extensional forces.

Fossils of Mesozoic freshwater and land animals and plants can be found in a narrow band of rocks in the Piedmont in Mesozoic rift basins paralleling the eastern coast of the United States

The Virginia Division of Geology and Mines does not track or regulate paleontological finds or the collection of fossils, and overall, it is unlikely that the segments of the pipeline in Virginia would cause a material impact to recorded or undiscovered significant paleontological finds. Fossil remains found in Mesozoic rift basins may include ray-finned fish (semionotids, coelacanths) bony fish (palaeoniscids), dinosaur footprints and in rare cases dinosaur bone and skeletal fragments.

## **2.0 UNANTICIPATED DISCOVERIES OF PALEONTONLOGICAL RESOURCES**

If any unanticipated paleontological resources are discovered, they will most likely be isolated bones, teeth, or jaws, which would not cause delays in construction activities. There is a slight chance that substantial and scientifically significant articulated remains of vertebrate fossils of marine reptiles may be encountered in excavations in areas underlain by fossil bearing formations. It is also possible that the silicified remains of Pleistocene fauna may be present. If that occurs, work in the immediate vicinity of the find will cease and the following people will be contacted in each respective state to assess the significance of the find.

**West Virginia** West Virginia Geologic and Economic Survey, Mitch Blake, Geologist for Michael Ed. Hohn, Director and State Geologist. (304)-594-2331 [blake@geosrv.wvnet.edu](mailto:blake@geosrv.wvnet.edu)

**Virginia** Virginia Department of Mines Minerals and Energy, David Spears, State Geologist (434) 951-6350 [david.spears@dmme.virginia.gov](mailto:david.spears@dmme.virginia.gov)

## **3.0 PRECONSTRUCTION TRAINING**

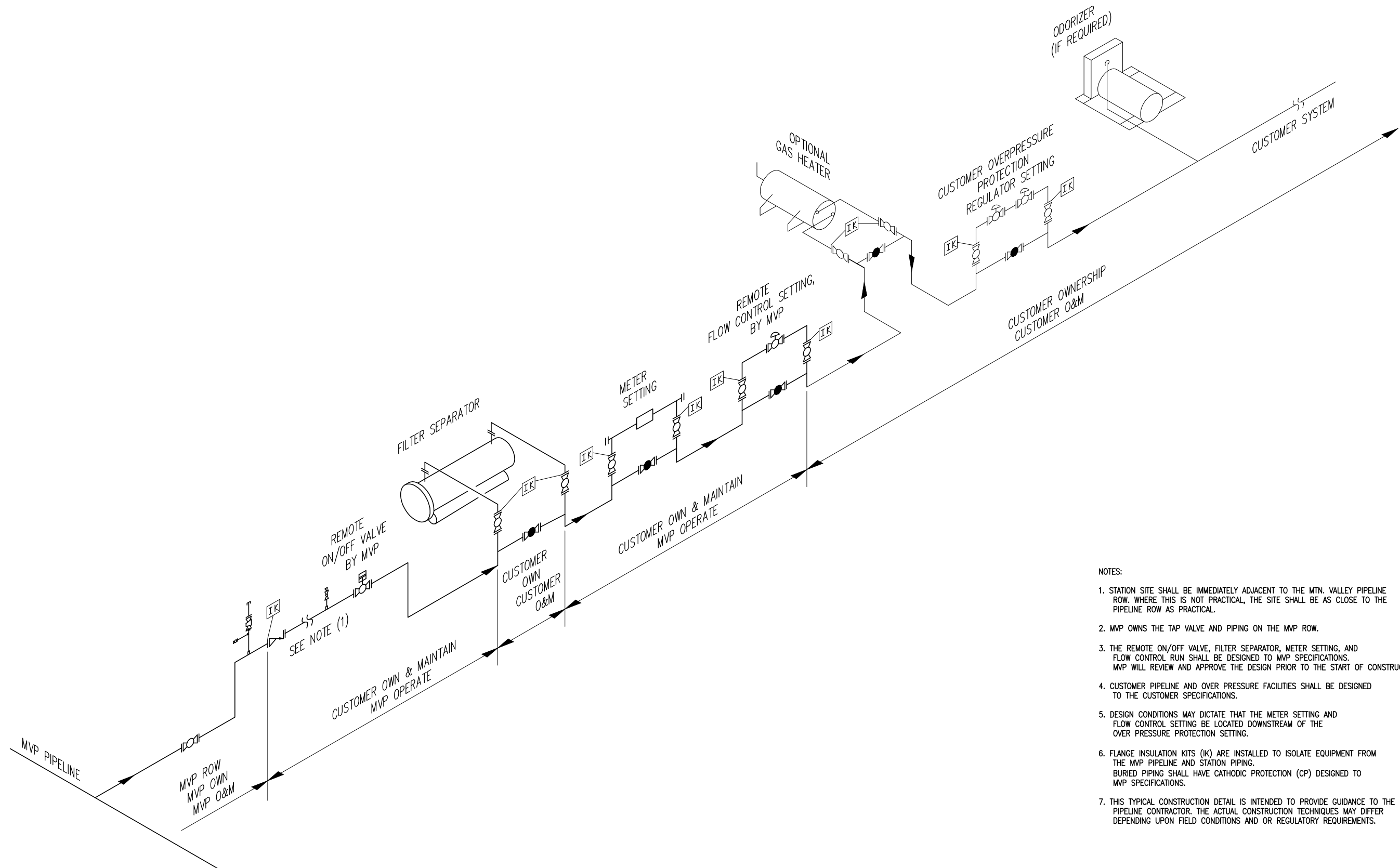
MVP will provide training to all Environmental Inspectors regarding the presence, type, and identification of fossil resources and the procedures to be followed when an unanticipated paleontological resource is discovered during construction activities.

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**ATTACHMENTS**

**Attachment RR1-2**



- NOTES:
1. STATION SITE SHALL BE IMMEDIATELY ADJACENT TO THE MTN. VALLEY PIPELINE ROW. WHERE THIS IS NOT PRACTICAL, THE SITE SHALL BE AS CLOSE TO THE PIPELINE ROW AS PRACTICAL.
  2. MVP OWNS THE TAP VALVE AND PIPING ON THE MVP ROW.
  3. THE REMOTE ON/OFF VALVE, FILTER SEPARATOR, METER SETTING, AND FLOW CONTROL RUN SHALL BE DESIGNED TO MVP SPECIFICATIONS. MVP WILL REVIEW AND APPROVE THE DESIGN PRIOR TO THE START OF CONSTRUCTION.
  4. CUSTOMER PIPELINE AND OVER PRESSURE FACILITIES SHALL BE DESIGNED TO THE CUSTOMER SPECIFICATIONS.
  5. DESIGN CONDITIONS MAY DICTATE THAT THE METER SETTING AND FLOW CONTROL SETTING BE LOCATED DOWNSTREAM OF THE OVER PRESSURE PROTECTION SETTING.
  6. FLANGE INSULATION KITS (IK) ARE INSTALLED TO ISOLATE EQUIPMENT FROM THE MVP PIPELINE AND STATION PIPING. BURIED PIPING SHALL HAVE CATHODIC PROTECTION (CP) DESIGNED TO MVP SPECIFICATIONS.
  7. THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE PIPELINE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

Plotted by: DILL, Mark on: January 14, 2016 - 9:40 AM

REFERENCE DRAWINGS		NO.	DATE	REVISION	BY	CHK	APPD	NO.	DATE	REVISION	BY	CHK	APPD
DRAWING NUMBER	DRAWING TITLE	0	11/10/15	ISSUED FOR REFERENCE	MED		RLM	-					
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TO THE BEST OF MY KNOWLEDGE, ALL COMPONENTS OF THIS DRAWING ARE DESIGNED IN ACCORDANCE WITH APPLICABLE GUIDELINES AND SPECIFICATIONS

**KENNY HAYNES** 11/10/15  
MECHANICAL DESIGN ENGINEER DATE

\_\_\_\_\_  
ELECTRICAL DESIGN ENGINEER DATE

NOTE: ANY CHANGES TO THE DESIGN SHOWN ON THIS DRAWING MUST BE APPROVED BY THE DESIGN ENGINEER.

	DRAWING TITLE: MOUNTAIN VALLEY PIPELINE TYPICAL TRANSMISSION DELIVERY POINT ISOMETRIC				
	PROJECT ID: -	FACILITY: M	STATE: S	IDENTIFICATION: MVP_PO D	SHEET: 01
DRAWING SCALE: NONE					

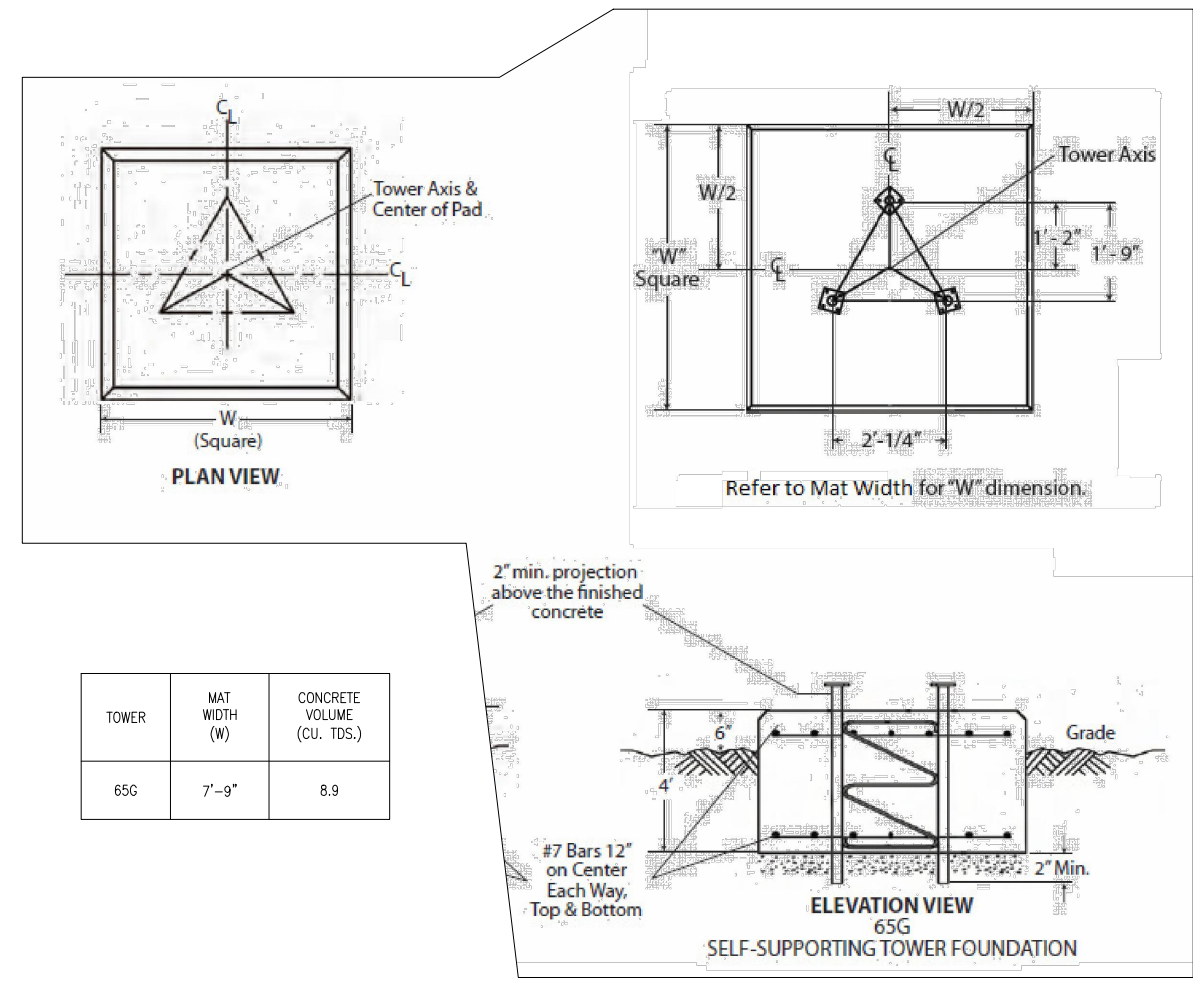
**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

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**ATTACHMENTS**

**Attachment RR1-3a**

FOUNDATION DETAILS

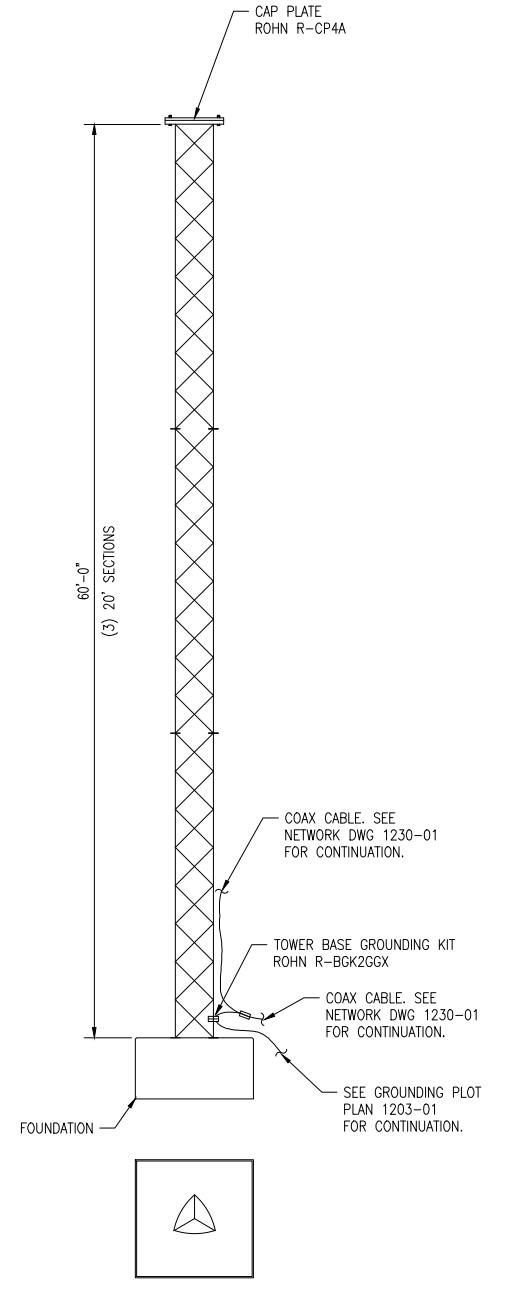


NOTE:

1. CONCRETE DETAILS ARE SHOWN THIS DRAWING FOR PROJECTS WHERE CIVIL DRAWINGS ARE NOT PROVIDED. PROJECT CIVIL DRAWINGS SUPERCEDE ANY FOUNDATION DETAILS SHOWN THIS DRAWING.
2. THIS TYPICAL CONSTRUCTION DETAIL IS INTENDED TO PROVIDE GUIDANCE TO THE CONTRACTOR. THE ACTUAL CONSTRUCTION TECHNIQUES MAY DIFFER DEPENDING UPON FIELD CONDITIONS AND OR REGULATORY REQUIREMENTS.

GENERAL CONCRETE NOTES:

1. CONTRACTOR SHALL FURNISH AND INSTALL CRUSHED ROCK, CONCRETE, REINFORCING STEEL, ANCHOR BOLTS, AND ALL NECESSARY FORMING MATERIAL.
2. ALL CONCRETE TO HAVE A 28-DAY COMPRESSIVE STRENGTH (F'c) OF 4500 PSI.
3. REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 60,000 PSI.
4. CONCRETE FOUNDATION TO BE INSTALLED IN ACCORDANCE WITH EQT'S "FACILITIES CONSTRUCTION AND COMMISSIONING" STANDARD.
5. GROUNDING PER EQT STANDARD DRAWING 1730-01 DETAIL 8 & 9.
6. CONTRACTOR TO SUPPLY AND INSTALL ALL EQUIPMENT ON THIS DRAWING EXCEPT WHERE NOTED OTHERWISE.



SELF SUPPORTING COMMUNICATIONS  
TOWER 65G - ELEVATION

Plotted by: Chris, Glenn on: January 14, 2016 - 3:10 PM

REFERENCE DRAWINGS		NO.	DATE	REVISION	BY	CHK	APPD	NO.	DATE	REVISION	BY	CHK	APPD
DRAWING NUMBER	DRAWING TITLE												

TO THE BEST OF MY KNOWLEDGE, ALL COMPONENTS OF THIS DRAWING ARE DESIGNED IN ACCORDANCE WITH APPLICABLE GUIDELINES AND SPECIFICATIONS				DRAWING TITLE: MOUNTAIN VALLEY PIPELINE ELECTRICAL TYPICAL SELF SUPPORTING COMMUNICATIONS TOWER 65G FOUNDATION - PLAN & ELEVATIONS	
KENNY HAYNES MECHANICAL DESIGN ENGINEER	1/8/16 DATE	PROJECT ID	FACILITY   STATE   IDENTIFICATION   SERIES   SHEET   REVISION		
JOSEPH HAUGHT ELECTRICAL DESIGN ENGINEER	1/8/16 DATE	DRAWING SCALE: NONE	U	S	STANDARD 1706 04 0
NOTE: ANY CHANGES TO THE DESIGN SHOWN ON THIS DRAWING MUST BE APPROVED BY THE DESIGN ENGINEER.					

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**Attachment RR1-3b**





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**Attachment RR1-4**



Mountain Valley Pipeline Project

Docket No. CP16-10-000

## **Fire Prevention and Suppression Plan**

October 2015  
Revised January 2016

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Attachment A U.S. Forest Service Standards and Guidelines Pertaining to Fire Prevention and Suppression

## 1.0 Introduction

The purpose of this Fire Prevention and Suppression Plan is to prevent a fire from occurring during and after the installation of the Mountain Valley Pipeline's facilities. It will describe the hazardous fuel sources and material that could initiate or contribute to the spread of a fire, as well as the communication plan and procedures to suppress the spread of fire.

Mountain Valley Pipeline, LLC (MVP) recognizes the potential for fire from hot work operations and developed a program to protect the public, employees, property, and the environment from fire resulting from hot work operations.

## 2.0 Purpose

The purpose of this *Fire Prevention and Suppression Plan* (Fire Plan) is to identify best management practices for preventing fires and responding to inadvertent fires that occur during construction of MVP. The Fire Plan identifies responsibilities and procedures for suppressing fire ignitions, responding to and reporting fire emergencies, and working with emergency response agencies in the event of fire, regardless of cause. The Fire Plan is designed to be consistent with applicable Federal and State/Commonwealth laws, regulations, plans, and policies, including Chapter 14 of the 2003 International Fire Code (Combustible Dust-Producing Operations) and Section A104 of the International Wildland-Urban Interface Code (Ignition Source Control).

The Fire Plan provides an implementation strategy to ensure immediate and aggressive action to suppress inadvertent fires that occur during construction of the Projects and establishes protocols and lines of communication for reporting fires that occur. Implementation of the Fire Plan will ensure that proper types and quantities of safety and fire extinguishing equipment are available in construction areas to suppress fires, and that construction workers are adequately trained for response to fires. The Plan will be used to familiarize MVP personnel with basic fire emergency planning, response, and evacuation procedures, and their individual roles in fire prevention and suppression. Planning and training will help MVP personnel respond effectively in the event of a fire, thereby avoiding or minimizing injuries and/or damage to property or the environment.

## 3.0 Training

Prior to the start of construction, MVP will conduct environmental and safety training for Company and Contractor personnel. The training program will focus on the Federal Energy Regulatory Commission's *Upland Erosion Control, Revegetation, and Maintenance Plan* and *Wetland and Waterbody Construction and Mitigation Procedures*; other construction, restoration, and mitigation plans, including this Fire Plan; and applicable permit conditions. In addition, MVP will provide large-group training sessions before each work crew begins construction with periodic follow-up training for groups of newly assigned personnel.

Training for fire suppression and response will include:

- the chain of command and fire reporting process;
- emergency contacts and numbers;
- basic fire prevention behavior controls;
- basic uses of hand tools, water backpacks, and other fire suppression equipment;
- fire suppression procedures and precautions; and
- emergency response and evacuation procedures.

Contractor Safe Work Rules will also provide a general overview of specific MVP policies and procedures and highlights of relevant OSHA standards for General Industry and Construction. This document does not include all of the standards or procedures that may be applicable to a job or task, nor is it inclusive of all of the information that may be necessary to be in compliance.

Fire prevention is extremely important at MVP. Aside from natural gas, there are additional fire hazards posed by hydrocarbons, liquids, crude oil and condensate. Also, there may be flammable compressed gases and ordinary combustibles depending on the work site and the jobs being performed. Contractors must comply with OSHA 29 CFR 1910.39, Fire Prevention and Suppression Plan, and 1926.151, Fire Prevention. Contractors must take appropriate steps and preventive measures to minimize the potential for a fire. These steps include, but are not limited to, the following:

- Only smoke in designated areas.
- Do not allow trash or flammable materials to accumulate.
- Identify and protect or eliminate potential sources of fuel, if possible.
- Recognize and eliminate potential ignition sources, including static electricity.
- Keep flammable liquids in approved, self-closing containers.
- Learn the location of firefighting equipment, emergency shutdowns and alarms.
- Each piece of construction equipment will be equipped with a fire extinguisher. All inspectors and managers on-site will have fire extinguishers with their vehicles.

#### **4.0 Coordination**

MVP and their Contractors will be responsible for fire prevention during construction. MVP, along with the appropriate emergency response or jurisdictional agencies, will be responsible for fire suppression and investigation. All MVP personnel, including contractors, will be responsible for complying with applicable laws and regulations for fire prevention and suppression as well as the measures described in this Fire Plan.

#### **4.1 Public Lands**

The MVP crosses forested public lands under the jurisdiction of the U.S. Forest Service (USFS) and National Park Service (NPS), as well as private timbered areas.

The National Forest crossed by MVP, the Jefferson National Forest (JNF) in Virginia, has standards and guidelines applicable to fire management. This Fire Plan is consistent with the applicable standards and guidelines identified within the Land and Resource Management Plans of the National Forest (see Attachment A). Fire prevention and suppression on the JNF will also be addressed in a Plan of Development or Construction, Operations, and Maintenance Plan to be prepared for the MVP as part of the SF-299 application. The MVP crosses NPS lands at the Blue Ridge Parkway. MVP will consult with each of these agencies regarding applicable standards and guidelines for fire prevention and suppression on these public lands.

#### **4.2 Interagency Coordination**

Interagency coordination of wildfire management in the southeastern United States is overseen by the Southern Area Multi-Agency Coordination Group (SAMACG), which includes representation from Federal land managing agencies and State/Commonwealth forestry agencies. The SAMACG and an adjunct organization, the Southern Area Coordination Center (SACC) includes Virginia. Virginia also has

a center for coordination of wildfire management. Interagency coordination of wildfire management in the northeastern United States is overseen by the Eastern Area Coordination Group (EACG), which includes representation from Federal land managing agencies and State/Commonwealth forestry agencies. The EACG and an adjunct organization, the Eastern Area Coordination Center (EACC), encompass Pennsylvania and West Virginia. Each of the two States/Commonwealths crossed by MVP has fire prevention and suppression laws, regulations, and programs. Responsible agencies include the West Virginia Division of Forestry and Virginia Department of Forestry. Each of these agencies participates in the appropriate SAMACG and EACG for coordination of wildfire management. When a fire is initially reported, local and partner firefighting agencies initially respond to the emergency. A local agency can ask for support from the appropriate State/Commonwealth or a regional coordination center if a fire could or does exceed the response capabilities of the local agency. The State/Commonwealth or regional coordination center may in turn request support from the National Interagency Coordination Center (NICC) if a regional center exhausts its fire suppression resources. During a fire emergency, coordination is implemented through the Incident Command System (ICS), which is part of the National Incident Management System (NIMS). ICS is a standard incident management system used by firefighters and emergency medical teams to establish an organizational structure for management. A chain of command initially is established by the local response agencies to direct the response. As an incident progresses, personnel with higher authority and training assume responsibility for directing the response. ICS and NIMS provide a framework that assists agencies, non-governmental organizations, and the private sector in preventing, responding to, and mitigating the effects of incidents and ensuring an appropriate response based on the capabilities of response agencies.

## **5.0 Responsibilities**

The construction contractors working on MVP will be required to implement the provisions of this Fire Plan. Additionally, each contractor will be required to prepare and implement an individual fire control plan, which will identify responsibilities and describe actions to be implemented by the contractor in the event of an inadvertent fire. Copies of each fire control plan will be appended to this Fire Plan. The key persons responsible for fire prevention and suppression during construction of the Projects are Chief Inspectors, Spread Superintendents, Field Safety Officers (FSOs), Facility Superintendents, Environmental Inspectors (EIs), and Authorized Officers (AOs). Contact information for these persons will be appended to the “issued-for-construction” Fire Plan prior to the start of construction. At a minimum, each construction spread for the pipeline and each aboveground facility site will have one FSO trained in accordance with National Fire Protection Standards (NFPS) 1521, Chapter 4, Responsibilities for a Health and Safety Officer.

### **5.1 Chief Inspector**

The Chief Inspector will be responsible for oversight of all activities along the pipeline, including fire prevention and suppression.

### **5.2 Spread Superintendents**

Spread Superintendents will be responsible for general construction operations associated with their individual spreads including compliance with this Fire Plan. Spread Superintendents will be in communication with Chief Inspectors, FSOs, EIs, AOs, and local emergency response, as necessary, to ensure that construction personnel are aware of fire hazards and prevention methods. Spread Superintendents will coordinate with Federal, State/Commonwealth, and local emergency responders

during periods of high or severe fire conditions to ensure that appropriate preventive measures are in place during construction. Spread Superintendents also will be responsible for:

- monitoring construction areas to identify fire hazards and risks;
- developing and implementing fire protection strategies;
- ensuring adequate firefighting equipment is deployed to high risk areas and that equipment is visible and accessible; and
- ensuring that all firefighting equipment is inspected on a regular basis and maintained in good condition.

### 5.3 Field Safety Officers

The FSOs will be responsible for managing on-site fire suppression documentation, ensuring that fire suppression equipment is available and maintained, ensuring that construction personnel are trained to use equipment properly, and communicating fire hazards and threat levels to construction personnel. Additional responsibilities of the FSOs include:

- reporting all uncontrolled fires within or in the vicinity of the construction area, regardless of source, to the Spread Superintendent, emergency responders, and nearest fire dispatch;
- conducting weekly inspection of tools, equipment, personal protective equipment, and first aid kits;
- developing and maintaining a register of emergency equipment;
- conducting weekly inspections of flammable materials; posting “No Smoking” and “Designated Smoking Area” signs and fire rules at appropriate locations within the construction area;
- providing initial response support in the event of a fire and supervising fire suppression activities until relieved;
- providing and gaining approval of site-specific burn and smoke management plans for pre-planned controlled fires that will be implemented in accordance with Federal, State/Commonwealth, and Local requirements;
- providing written burning and blasting schedules, as required, to the appropriate Federal, State/Commonwealth, and Local fire control jurisdiction;
- monitoring construction areas where activities may present safety issues, such as blasting;
- complying with regulatory requirements in the storage and handling of flammable substances and maintaining a registry of flammable substances;
- establishing facilities for on-site chemical management and maintaining Safety Data Sheets (formally known as Material Safety Data Sheets) for flammable materials;
- establishing controls that minimize exposure to flammable materials;
- ensuring that flammable substances are removed from the construction area when not in use or when the location is unattended;
- training and instructing workers in the use, handling, and storage of flammable materials;
- ensuring that construction personnel have been trained in the requirements of this Fire Plan; and
- monitoring compliance with applicable Federal, State/Commonwealth, and Local laws, ordinances, and regulations regarding fire prevention and suppression.



## **5.4 Facility Superintendents**

Facility Superintendents at aboveground facility sites will have the same responsibilities as the Spread Superintendents as described above.

## **5.5 Environmental Inspectors**

EIs provide environmental regulatory guidance and oversight. This oversight includes fire prevention and suppression within and in the vicinity of construction areas. EIs will be familiar with Federal, State/Commonwealth, and Local rules and regulations pertaining to fire prevention and response. In the event of a fire emergency, EIs will assist with fire suppression.

## **5.6 Authorized Officers (AO)**

AOs are representatives from Federal land managing or other agencies who supply information or provide direction regarding potential hazard conditions or changes in prevention methods. AO's may include Interagency Dispatch Centers or staff from land managing agencies. AO's will provide information on current fire danger ratings, the presence of other fires in the vicinity of construction areas, natural disaster warnings, and temporary restrictions on construction activities due to fire or other emergencies. If extreme fire danger is identified by a land managing agency, the AO may direct the Chief Inspector or Spread Superintendents to increase the level of fire monitoring, install additional fire prevention or suppression equipment, or stop work, if necessary. The Chief Inspector, Spread Superintendents, FSOs, EIs, AOs, and local fire authorities have the authority to stop or reduce construction activities or operations that pose a fire hazard until appropriate measures are implemented to minimize risk. The FSOs will accompany Spread Superintendents, AOs, or third-party compliance monitors on fire inspections and take corrective action when observing or having been notified that fire protection measures have not been properly installed or maintained.

## **6.0 Emergency Notification**

In the event of a fire or other emergency, construction personnel on the scene will notify the appropriate Spread Superintendent and FSO immediately. The Spread Superintendent will be responsible for immediately notifying the appropriate fire dispatch center and AO or land managing agency, where appropriate. In the case of a serious injury, first aid treatment will be provided onsite. The FSO or another supervisor will coordinate with local emergency responders if additional support is required. In the event of a fire emergency, personnel will contact 911 or the nearest emergency response center. Contact information for emergency responders will be appended to the "issued-for-construction" version of this Fire Plan. A fire emergency is defined as an incident requiring a coordinated response from one or more agencies. When a response is required, the Spread Superintendent or person in charge will communicate the location and extent of the fire and steps underway to control or suppress the fire.

## **7.0 Fire Danger Ratings**

Fire danger ratings based on standard vegetation fuel models will be used by land managing agencies or local fire authorities to determine required fire prevention, control, and monitoring efforts. Based on the fire danger ratings, certain activities such as blasting, welding, or grinding may be restricted at the discretion of a land managing agency or local fire authority. Additionally, the land managing agency or local fire authority may modify or change requirements based on changes in fire restriction notices or localized hazards or risks. Standard practice Industrial Fire Protection Levels are:

- Closed Season, when fire season requirements are in effect;
- Partial Shutdown, which prohibits activities except as indicated by the State/Commonwealth; and
- General Shutdown, when all operations are prohibited.

For Federal Lands, fire danger ratings and associated precautions relevant to the Projects include:

- No Fire Restrictions – normal fire precautions.
- Stage 1 Fire Restrictions – normal fire precautions, except that designated smoking areas and permits for burning are required.
- Stage 2 Red Flag Warning – special fire precautions including:
  - Extra precautions such as designating a fire watch, using a spark shield, or wetting work areas down prior to active construction.
  - Machine treatment of slash, skidding, yarding, blasting, welding, metal cutting, and offloading are subject to land managing agency requirements.
  - No slash burning is allowed.
  - Power saws must be shut down from 1:00 p.m. to 8:00 p.m. local time.
  - Hauling trucking must stay on the right-of-way or surfaced roads after 6:00 p.m. local time.
  - Additional personnel, equipment, and prevention measures are required.
- Stage 3 Fire Restrictions – special fire precautions including:
  - All restrictions listed above.
  - Shutdown of all construction activities except operations on soil or graded areas, watering, grading, trench excavation, padding, backfilling, and clean-up.
  - Activities such as blasting and welding require an exemption from the AO unless these activities are completed on the graded portions of the right-of-way.

State/Commonwealth and local fire agencies may authorize their own restrictions within jurisdictions for private lands. Requirements identified in agency-issued fire restrictions will be followed at all times.

The FSOs will contact the appropriate Federal, State/Commonwealth, or local fire management office to obtain information on fire danger ratings. Contacts will be daily when conditions are favorable for fires and weekly at other times. The FSOs will communicate the fire danger ratings to the Chief Inspector, Spread Superintendents, Facility Superintendents, EIs, and construction crews.

## **8.0 Fire Prevention**

### **8.1 Blasting**

Procedures for blasting are discussed in MVP's *Blasting Plan*. Additional measures to be implemented in blasting areas are described below. When fire danger is high, a two-person fire watch will patrol the blast area for a period of one hour after the completion of blasting. If blasting occurs when the fire danger rating is Stage 1, an FSO will be on site during the operation and remain on site for one hour after the completion of blasting. At least one Size 0 or larger shovel and one water-filled backpack pump or fire extinguisher will be on site. In addition, a fire watch will be assigned to each crew utilizing blasting equipment. When the fire danger rating is Stage 2 or 3, blasting will be prohibited unless an exemption is granted by the local fire authority. If an exemption is granted, additional fire prevention equipment and personnel will be on site prior to blasting. Equipment may include water trucks, fire tankers, shovels,

backpack pumps, bulldozers, etc. A fire watch will remain on site for at least two hours after the completion of blasting activities.

## 8.2 Welding

During fire season, welding, cutting, or drilling of metal components of the MVP will require the approval of the Spread Superintendent and the Chief Inspector. In areas where approval has been granted, vegetation will be cleared at a minimum diameter of 30 feet around the center of the work area unless the area has been watered to eliminate the fire danger. Each welding crew will be outfitted with at least one Size 0 or larger shovel, one water-filled backpack pump, and one five-pound dry powder ABC fire extinguisher.

When the fire danger rating is Stage 1, a fire watch will be assigned to each crew utilizing cutting and welding equipment. The fire watch will remain on site for one hour after the completion of welding activities.

When the fire danger rating is Stage 2, an exemption by the AO will be required prior to welding activities unless the activities are performed within the graded portions of the right-of-way or other work areas. If an exemption is granted, all Stage 1 measures will be implemented. In addition, a water tanker and bulldozer will be required to be on site during welding operations, and a fire watch will remain on site for at least two hours after the completion of welding activities.

When the fire danger rating is Stage 3, welding activities will require approval from the AO. If an approval is granted, all Stage 1 and 2 measures will be implemented. Fire restriction measures also apply to welding operations performed for equipment maintenance. All welding activities require a permit from the jurisdictional agency as per 29 CFR 1910 Subpart Q (welding) and 29 CFR 1910 Subpart I (personal protective equipment).

## 8.3 Equipment

The construction contractor will develop a list of equipment to be used during construction. Equipment used in the construction area may be inspected by the AO or other third-party compliance monitor prior to use on the Projects. The equipment may be used only while in good operating order.

## 8.4 Fire Extinguishers

The FSAs will inspect fire extinguishers on a monthly basis to verify that:

- each extinguisher is in its designated place, clearly visible, and not blocked by equipment or other objects that could interfere with access to the fire extinguisher during an emergency;
- the nameplate with operating instructions is legible and facing outwards;
- the pressure gauge is showing that the extinguisher is fully charged;
- the pin and tamper seal are intact; and
- the extinguisher is in good condition, showing no signs of physical damage, corrosion or leakage.

The FSO performing the monthly inspection will initial and date each extinguisher inspection tag. Defective units will be taken out of service and replaced immediately. Fire extinguishers will be used in accordance with 29 CFR 1910.157. Use of fire extinguishers by construction personnel to suppress fires will only be undertaken if:

- the fire is small and is not spreading to other areas;
- escaping the area is possible;
- the fire extinguisher is in working condition and the individual understands how to use it; and
- the fire extinguisher has been professionally inspected and tagged annually;

## **8.5 Spark Arrestors**

Spark arresters used for portable equipment, such as chainsaws, will be in good working condition. Light trucks and cars with factory installed or equivalent mufflers, in good condition, may be used on roads where the roadway is cleared of vegetation. Vehicles equipped with catalytic converters are potential fire hazards. These vehicles will be inspected and cleaned, as necessary, and parked on areas cleared of vegetation. All vehicles operating in vegetation-covered areas will maintain clean and clear undercarriage and exhaust systems, with no chaff, grass, or brush lodged in the exhaust system and skid plates. Cross-country driving outside designated work areas will be prohibited.

## **8.6 Equipment Parking and Storage**

Equipment parking areas and small stationary engine sites will be cleared of all extraneous flammable materials. Gas and oil storage areas will be cleared of extraneous flammable material and “No Smoking” signs will be posted within these areas. All used and discarded oil, oil filters, oily rags, or other waste will be disposed of in approved and marked containers. Containers will be stored in approved locations and removed from the site by licensed contractors or approved personnel and disposed of or recycled at approved facilities. Glass containers will not be used to hold gasoline or other flammable materials.

## **8.7 Power Saws**

All gasoline-powered saws will be provided with approved spark arresters/mufflers and maintained in good operating condition. Chainsaw operation will comply with the following:

- the arrester/muffler will contain a 0.023-inch mesh, stainless steel screen;
- chainsaw operators will have a fire extinguisher or water backpack and shovel available;
- chainsaws will be moved at least 10 feet from the place of fueling before starting; and
- chainsaw fuel and oil will be carried in safety cans designed for that purpose.

## **8.8 Warning Devices**

Highway flares or other devices with open flames will not be allowed in the construction area because of the danger for fire. Contractors will only use electric or battery-operated warning devices within the construction area. Smoke detectors will be provided in all buildings constructed for the Projects. These detectors will provide a distinctive and recognizable signal to ensure timely evacuation from the area of fire or to perform actions designated by this plan or by the FSO. The FSO will test smoke detectors to ensure their safe operation.

## **8.9 Warming and Cooking Fires**

Warming and cooking fires will be prohibited on the right-of-way.

## 8.10 Smoking

Smoking is allowed only in areas designated by the FSO. Smoking signs visible to all personnel will be posted at designated areas. The supervisory personnel will be responsible for enforcing smoking restrictions. “No Smoking” signs will be posted in all refueling areas and in areas where flammable materials are used, stored, or discarded.

## 8.11 Refueling

All fuel trucks will be equipped with a 35-pound minimum ABC fire extinguisher. If required, helicopter refueling trucks will be electrically grounded to the helicopter during refueling. Storage areas will be cleared of all extraneous flammable materials. All discarded oil, oil filters, oily rags, or other potentially flammable wastes will be disposed of or as described in Section 6.5 above. Only approved and properly maintained containers will be used to store or transport flammable liquids.

## 9.0 Burning

Prior to burning brush, MVP will apply for and adhere to all local ordinances in addition to acquiring all applicable permits from the proper agencies. Notifications will be given to local fire departments about the locations and durations that burning activities will be taking place. All burning activities will be supervised by a qualified fire watch, equipped with a fire extinguisher, and other applicable suppression equipment and materials such as sand or water. The fire watch will monitor all burning activities until all fire or smoldering debris is extinguished. All debris will be extinguished prior to leaving the work area each day. All brush that will be burned will be started using a propane torch only. There will not be any additives used to enhance the start of the fire or to maintain the fire.

## 10.0 Fire and Emergency Response Equipment

### 10.1 Construction Vehicles

All foreman vehicles and crew buses assigned to the construction area will be equipped with one 10-pound ABC fire extinguisher, one shovel, and an operable backpack water pump of four-gallon capacity. One water truck per construction spread during blasting “red flag warnings” and a fire danger rating of Stage 2 will be outfitted with a pressure pump, adjustable nozzle, threaded rubber-lined hose with a minimum of 300 feet of 1½-inch cotton jacket, and have a minimum water storage capacity of 1,500 gallons. Water trucks on the right-of-way will be able to help with wildfire fighting in the vicinity of the Projects. The construction companies use water trucks that typically have a 4,000-gallon capacity and 150 feet of 1½-inch water hose that would support fire suppression activities. Many of these vehicles have water cannons mounted on the roof. All vehicles and auxiliary equipment will be equipped with properly functioning and baffled exhaust systems.

### 10.2 Fire Fighting Tools

At least three 10-person tool caches will be maintained per spread. One cache will be placed in an EI’s vehicle. The second cache will be located with the Spread Superintendent, or Facility Superintendent. The third cache will be assigned to the FSO. Tool boxes will be red in color, sealed with metal box-car-type seals, and labeled “For Fire Fighting Only.” The tool caches will contain the following:

- 10 electric headlamps with batteries;
- one first aid kit, 10-person unit;

- two knapsacks;
- five pulaskis with sheaths;
- five long-handled, round-point, Size 0 shovels; five fire rakes; and
- 10 one-gallon canteens, filled with water.

The Spread Superintendent will expedite delivery of the tool caches upon request of the FSO or AO or when alerted to an emergency requiring the tools. In case a tool cache or first aid kit has been used, it will be immediately replenished. All replenished tool caches or first aid boxes will be inspected by the FSO. These will then be resealed before being returned to the construction site.

## **11.0 Evacuation**

During an emergency evacuation, MVP will depend upon response teams, consisting of trained personnel, to attend to injured and/or trapped victims. Construction workers providing medical attention will not help beyond their capability. MVP will establish a site specific emergency communications system utilizing cell phones, hand-held radios, and/or satellite phones to notify workers of emergencies and contact local law enforcement and fire departments. If an immediate evacuation of a construction work area is required, the Chief Inspector, Spread Supervisor, FSO, EI, or other supervisor will direct the evacuation via the nearest escape route to a “safe area.” Otherwise, evacuations will be directed by local emergency responders. Designated evacuation wardens will be assigned to each spread or station to account for all personnel present before, during, and after the evacuation. Construction workers will not return to an evacuated work area until emergency responders have deemed it safe and the Chief Inspector, Spread Supervisor, or Facility Superintendent has given an “all clear” signal.

## Attachment A

### U.S. FOREST SERVICE STANDARDS AND GUIDELINES PERTAINING TO FIRE PREVENTION AND SUPPRESSION

The Fire Prevention and Suppression Plan is consistent with the George Washington National Forest standards and guidelines associated with wildfire prevention and suppression.

#### George Washington National Forest

The George Washington National Forest's 2014 "*Revised Land and Resource Management Plan*" contains the following standards and guidelines regarding fire management:

#### Wildland Fire Management:

**FW-147** When used for control lines, trails (including tread, structures and improvements) will be restored to pre-burn conditions as soon as practicable.

**FW-148** Fire control lines (whether constructed by hand or mechanically) that tie into travel ways (trails, roads, etc.), will be obliterated and the topography restored to original contour as soon as possible following the fire.

#### Wildfires:

**FW-149** Ensure firefighter and public safety as the first priority. Secondly, protect property and natural and cultural resources based on the relative values to be protected.

**FW-150** Suppress human-caused wildfires (either accidental or arson).

**FW-151** The full range of suppression tactics (from full suppression to monitoring) may be used, consistent with forest and management prescription area direction.

**FW-152** Suppress wildfires at minimum cost, considering firefighter and public safety, benefits, and values to be protected, consistent with resource objectives.

**FW-153** Where needed to prevent erosion, fire lines are revegetated and water-barred promptly after the fire is controlled.

**FW-154** Lightning-caused fires are allowed to play their natural ecological role as long as they occur within prescribed weather and fuel conditions and do not pose unmitigated threats to life and/or private property, particularly to that property within the wildland/urban interface zone.

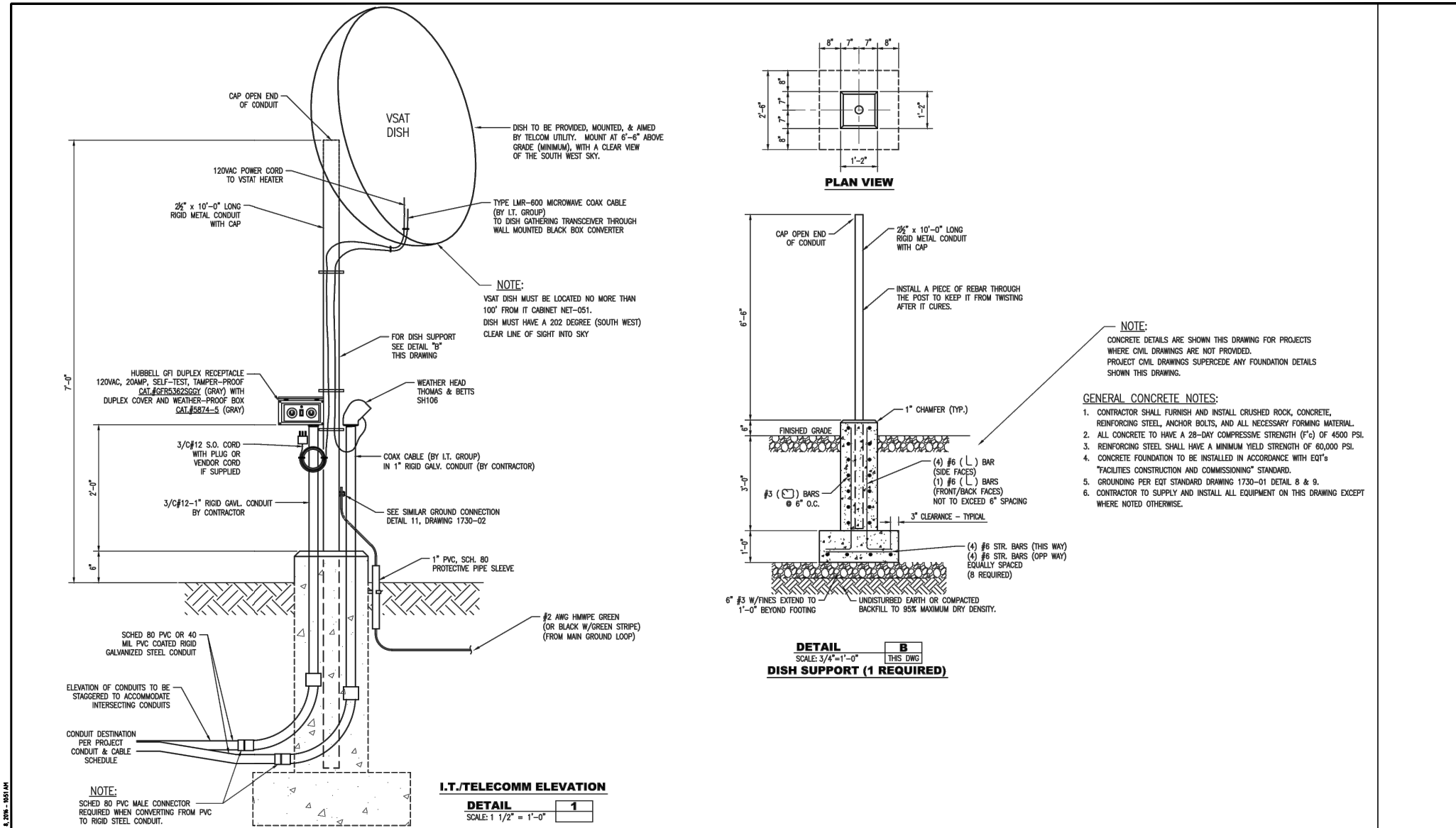
**Mountain Valley Pipeline, LLC  
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**Responses to FERC Environmental Information Request  
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**ATTACHMENTS**

**Attachment RR1-6a**





REFERENCE DRAWINGS	NO.	DATE	REVISION	BY	CHK	APPD	NO.	DATE	REVISION	BY	CHK	APPD

TO THE BEST OF MY KNOWLEDGE, ALL COMPONENTS OF THIS DRAWING ARE DESIGNED IN ACCORDANCE WITH APPLICABLE GUIDELINES AND SPECIFICATIONS

MECHANICAL DESIGN ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

ELECTRICAL DESIGN ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

**NOTE:** ANY CHANGES TO THE DESIGN SHOWN ON THIS DRAWING MUST BE APPROVED BY THE DESIGN ENGINEER.

**Mountain Valley**

DRAWING TITLE: COMPANY STANDARD DRAWING  
Typical ELECTRICAL  
VSAT SATELLITE DISH  
INSTALLATION DETAILS

PROJECT ID: \_\_\_\_\_

DRAWING SCALE: NONE

FACILITY	STATE	IDENTIFICATION	SERIES	SHEET	REVISION
U	S	STANDARD	1706	02	4

File Path: C:\Vault\Working\3D\WVP\Bradshaw Compressor Station\Engineered Equipment and Building Data\Vendor Drawings (Preliminary)\VSAT\VSAT.dwg

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**Attachment RR1-6b**



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**ATTACHMENTS**

**Attachment RR1-8**

**Table 1.3-3**

Revised 1/15/16

**Potential Rectifier and Groundbed Locations**

<b>Nearest Milepost</b>	<b>State</b>	<b>County</b>	<b>Cathodic Protection Section <u>a/</u></b>	<b>Cathodic Protection Groundbed Type</b>
2.3	WV	Wetzel	1a	Surface
6.6	WV	Wetzel	1b	Surface
15.5	WV	Harrison	2	Surface
23.1	WV	Harrison	3	Surface
35.0	WV	Doddridge	4	Surface
46.0	WV	Lewis	5	Surface
55.2	WV	Lewis	6	Surface
62.3	WV	Lewis	7	Surface
73.8	WV	Braxton	8	Surface
84.1	WV	Webster	9	Deepwell
93.2	WV	Webster	10	Deepwell
98.7	WV	Webster	11	Surface
106.8	WV	Webster	12	Surface
122.1	WV	Nicholas	13	Surface
127.9	WV	Nicholas	14	Surface
137.9	WV	Greenbrier	15	Deepwell
149.2	WV	Greenbrier	16	Surface
159.1	WV	Summers	17	Surface
170.9	WV	Summers	18	Deepwell
181.4	WV	Monroe	19	Surface
190.5	WV	Monroe	20	Surface
199.6	VA	Giles	21	Surface
209.9	VA	Giles	22	Surface
225.2	VA	Montgomery	23	Surface
233.9	VA	Montgomery	24	Surface
244.0	VA	Roanoke	25	Surface
253.0	VA	Franklin	26	Surface
261.6	VA	Franklin	27	Surface
272.1	VA	Franklin	28	Surface
283.3	VA	Pittsylvania	29	Surface
294.2	VA	Pittsylvania	30	Surface

a/ Cathodic Protection Sections are created by installation of isolation in the pipeline

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**Attachment RR1-10**

**Table 1.3-4**

**Proposed Contractor Yards for Pipeline Construction**

Name	Type	MP	County	State	Location	Land Ownership	Land Use <u>a/</u>	Acres	Tree Clearing Justification
MVP-LY-001	Laydown Yard	3.5	Wetzel	WV	Jacksonburg	Private	Deciduous Forest	0.83	No tree clearing anticipated
							Developed, Low Intensity	0.24	
							Developed, Open Space	0.87	
							Pasture/Hay	2.95	
MVP-LY-002	Laydown Yard	17.7	Harrison	WV	Lumberport	Private	Deciduous Forest	15.01	Trees will be cut to provide usable workspace and provide adequate line of sight from opposite ends of the work area.
							Developed, Open Space	1.96	
							Grassland/Herbaceous	2.22	
							Pasture/Hay	0.04	
MVP-LY-003	Laydown Yard	25.9	County	WV	Salem	Private	Deciduous Forest	2.51	No tree clearing anticipated
							Developed, Medium Intensity	0.01	
							Developed, Open Space	5.93	
MVP-RD-001	Rock Disposal	79.0	Braxton	WV	Flatwood Yard	Private	Cultivated Crops	6.17	No tree clearing anticipated
							Pasture/Hay	9.76	
MVP-LY-004	Laydown Yard	86.8	Webster	WV	Route 19 & I-79 Yard	Private	Barren Land	2.69	Trees will be cut to provide usable workspace and provide adequate line of sight from opposite ends of the work area.
							Developed, Low Intensity	1.26	
							Developed, Medium Intensity	2.19	
							Developed, Open Space	0.60	
							Grassland/Herbaceous	0.33	
MVP-LY-005	Laydown Yard	97.2	Webster	WV	Birch River Yard	Private	Developed, Low Intensity	1.68	No tree clearing anticipated
							Developed, Medium Intensity	0.07	
							Developed, Open Space	0.84	
MVP-LY-007	Laydown Yard	114.3	Nicholas	WV	Summersville Yard	Private	Deciduous Forest	0.32	No tree clearing anticipated. Only clearing of brush will be required.
							Developed, Low Intensity	0.46	
							Developed, Open Space	3.61	
							Pasture/Hay	16.06	

**Table 1.3-4**

**Proposed Contractor Yards for Pipeline Construction**

Name	Type	MP	County	State	Location	Land Ownership	Land Use <sup>a/</sup>	Acres	Tree Clearing Justification
MVP-PY-003	Pipe Yard	155.7	Greenbrier	WV	I-64 Dawson	Private	Cultivated Crops	1.80	Tree clearing will be required for line of site to safely ingress and egress from the pipeyard.
							Deciduous Forest	2.01	
							Developed, Low Intensity	0.09	
							Developed, Open Space	0.44	
							Pasture/Hay	24.01	
MVP-PY-006	Pipe Yard	231.3	Montgomery	VA	Northfork Road - I-81	Private	Deciduous Forest	1.65	Tree clearing will be required for line of site to safely ingress and egress from the pipeyard.
							Developed, Low Intensity	1.51	
							Developed, Medium Intensity	0.46	
							Developed, Open Space	4.00	
							Pasture/Hay	15.21	
MVP-PY-005	Pipe Yard	262.9	Pittsylvania	VA	Highway 220	Private	Deciduous Forest	0.62	No tree clearing required.
							Developed, Low Intensity	1.63	
							Developed, Medium Intensity	0.05	
							Pasture/Hay	12.70	
							Deciduous Forest	0	

a/ NLCD 2006 citation: Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, *PE&RS*, Vol. 77(9):858-864.



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**ATTACHMENTS**

**Attachment RR1-19**

**Table 1.7-1, Revised 1/15/16**

**Agencies with Relevant Permit or Consultation Requirements**

<b>Agency</b>	<b>Permit/ Approval/ Consultation <u>a</u>/</b>	<b>Consultation Initiated</b>	<b>Permit Application Filed</b>	<b>Anticipated Permit Receipt Date</b>	<b>Contact Information</b>
<b>Federal</b>					
Federal Energy Regulatory Commission	NGA Section 7; Certificate for construction and operation of interstate natural gas pipeline.	October 16, 2014	October 23, 2015	October 15, 2016	Paul Friedman 202-502-8059
Bureau of Indian Affairs, Eastern Regional Office	Consultation regarding which tribes may have potential interest in project area or presence of traditional cultural properties, and contact tribes as appropriate	October 13, 2014	N/A	N/A	NA
U.S. Department of Transportation (USDOT), Office of Safety, Energy, and the Environment	Consultation	October 13, 2014	N/A	N/A	NA
U.S. Department of Transportation (USDOT), Office of Pipeline Safety	Consultation	Prior to the start of construction	4 <sup>th</sup> Quarter 2016	4 <sup>th</sup> Quarter 2016	NA
National Park Service (NPS), Southeast Region	Consultation regarding potential impacts to Appalachian National Scenic Trail and Blue Ridge Parkway	October 13, 2014	N/A	N/A	Ryan McCormick 828-348-3441
	Survey Permission on NPS lands (Blue Ridge Parkway)		April 2015	February 2016	
	Right-of-way through NPS lands (Blue Ridge Parkway)		4 <sup>th</sup> Quarter 2015	3 <sup>rd</sup> Quarter 2016	
U.S. Army Corps of Engineers (USACE), Huntington District	Section 404 Permit for impacts on waters of the U.S., including wetlands  Section 10 Permit for activities affecting navigation	October 13, 2014	1 <sup>st</sup> Quarter 2016	4 <sup>th</sup> Quarter 2016	Christopher Carson 304-399-5819
USACE, Norfolk District	Same as USACE, Huntington District	October 13, 2014	1 <sup>st</sup> Quarter 2016	4 <sup>th</sup> Quarter 2016	Todd Miller 804-323-3782
USACE, Pittsburgh District	Same as USACE, Huntington District	October 13, 2014	1 <sup>st</sup> Quarter 2016	4 <sup>th</sup> Quarter 2016	John Shaffer 412-395-7121
U.S. Department of Agriculture (USDA), Virginia	Consultation regarding permanent conversion of important farmland	October 13, 2014	N/A	N/A	NA
USDA, West Virginia	Same as USDA, Virginia	October 13, 2014	N/A	N/A	NA
EPA, Region 3 Water Protection Division	National Pollutant Discharge Elimination System (NPDES) stormwater construction permit for stormwater runoff	October 13, 2014	N/A	N/A	NA
U.S. Forest Service (USFS)	Consultation regarding potential impacts Survey Permission on USFS lands (Preferred Route)	September 11, 2014	N/A November 24, 2014	N/A Received April 2015	Jennifer Adams 540-265-5114

**Table 1.7-1, Revised 1/15/16**

**Agencies with Relevant Permit or Consultation Requirements**

<b>Agency</b>	<b>Permit/ Approval/ Consultation <u>a</u>/</b>	<b>Consultation Initiated</b>	<b>Permit Application Filed</b>	<b>Anticipated Permit Receipt Date</b>	<b>Contact Information</b>
	Survey Permission on USFS lands (Alternate Routes)		March 10, 2015	Received April 2015	
	Survey Permission on USFS lands (Alternate Routes)		August 21, 2015	Received September 2015	
	Special use Authorization for right-of-way through USFS lands and notice to proceed		January, 2016	1 <sup>st</sup> Quarter 2017	
U.S. Fish and Wildlife Service (USFWS), Virginia	Consultation under Section 7 of ESA for potential impacts on federally protected species	September 24, 2014 March 2015	N/A	N/A	Troy Andersen 804-824-2428
	Consultation regarding impacts on migratory birds	March 2015	N/A	N/A	
	Consultation regarding impacts on fish and wildlife	December 2015	N/A	N/A	
	Biological Opinion		January 2016	October 2016	
USFWS, West Virginia	Same as USFWS, Virginia	September 24, 2014 December 2015	N/A January 2016	N/A October 2016	Tiernan Lennon 304-636-6586 X12
<b>Virginia</b>					
Virginia Department of Forestry	Consultation regarding potential impacts to state-managed forests	October 13, 2014	N/A	N/A	NA
Virginia Department of Game and Inland Fisheries (VDGIF)	Consultation regarding potential impacts to state-managed lands. Consultation for state threatened and endangered species	October 13, 2014	N/A	N/A	Rick Reynolds 540-248-9360
Virginia Department of Mines, Minerals, and Energy – Division of Gas and Oil	Consultation	October 13, 2014	N/A	N/A	NA
Virginia Department of Transportation (VDOT)	Road bonds and crossing permits	4 <sup>th</sup> Quarter 2015	2 <sup>nd</sup> Quarter 2016	4 <sup>th</sup> Quarter 2016	Ashley Smith 504-387-5423
Virginia Department of Historic Resources (VDHR), Division of Review and Compliance (SHPO)	Consultation and clearance regarding potential impacts on pre-historic and historic resources eligible for listing on the National Register of Historic Places	October 3, 2014	N/A	N/A	Roger Kirchen 804-482-6091
Virginia Department of Conservation and Recreation (VDCR), Natural Heritage	Consultation on potential impacts to wildlife species and habitat	October 13, 2014	N/A	N/A	Robbie Rhur 804-371-2594

**Table 1.7-1, Revised 1/15/16**

**Agencies with Relevant Permit or Consultation Requirements**

<b>Agency</b>	<b>Permit/ Approval/ Consultation <u>a/</u></b>	<b>Consultation Initiated</b>	<b>Permit Application Filed</b>	<b>Anticipated Permit Receipt Date</b>	<b>Contact Information</b>
VDCR, Division of Natural Heritage	Consultation for state-managed lands	October 13, 2014	N/A	N/A	Rene Hypes 804-371-2708
VDCR, Division of Planning and Recreation	Consultation for state parks and managed lands	October 13, 2014	N/A	N/A	NA
VDEQ, Water Division	Water Quality Certification for construction and operation impacts on water and wetlands	October 13, 2014	N/A issued with the NWP from USACE	N/A issued with the NWP from USACE	Larry Gavin (804) 698-4000
VDEQ	General Permit No. VAG83	N/A	1 <sup>st</sup> Quarter 2016	3 <sup>rd</sup> Quarter 2016	Drew Hammond (804) 698-4000
VDEQ, Office of Environmental Impact Review	Consultation	October 13, 2014	N/A	N/A	NA
Virginia Outdoors Foundation	Conversion/Diversion of Open Space Access or Utility Easement Application  Access or Utility Easement Application	June 2014  June 2014	January 2016  January 2016	September 2016  September 2016	Martha Little, 804-577-3337 Harry Hibbitts, 504-332-8906
<b>West Virginia</b>					
West Virginia Department of Environmental Protection (WVDEP), Division of Air Quality	Air Quality permit for air emissions	October 10, 2014	4 <sup>th</sup> Quarter 2015	2 <sup>nd</sup> Quarter 2016	Roy Kees 304-926-0499
WVDEP, Division of Water and Waste Management	401 Water Quality Certification for construction and operation impacts on water and wetlands	October 13, 2014	1 <sup>st</sup> Quarter 2016	4 <sup>th</sup> Quarter 2016	Nancy Dickson (304) 926-0440
WVDEP, Division of Water and Waste Management	NPDES Permit – Construction Stormwater General Permit for Oil and Gas Related Construction Activities	October 13, 2014	1 <sup>st</sup> Quarter 2016	4 <sup>th</sup> Quarter 2016	Joseph Cochran (304) 926-0440
WVDEP, Division of Water and Waste Management	NPDES Hydrostatic Test Discharge Permit	October 13, 2014	1 <sup>st</sup> Quarter 2017	2 <sup>nd</sup> Quarter 2017	John Perkins (304)926-0499
West Virginia Division of Energy	Consultation	October 13, 2014	N/A	N/A	NA
West Virginia Department of Transportation (WVDOT)	Road bonds and crossing permits	4 <sup>th</sup> Quarter 2015	2 <sup>nd</sup> Quarter 2016	4 <sup>th</sup> Quarter 2016	Gary Clayton 304-476-4496

**Table 1.7-1, Revised 1/15/16**

**Agencies with Relevant Permit or Consultation Requirements**

<b>Agency</b>	<b>Permit/ Approval/ Consultation <u>a/</u></b>	<b>Consultation Initiated</b>	<b>Permit Application Filed</b>	<b>Anticipated Permit Receipt Date</b>	<b>Contact Information</b>
West Virginia Division of Culture and History (SHPO)	Consultation and clearance regarding potential impacts on pre-historic and historic resources eligible for listing on the National Register of Historic Places	October 3, 2014	N/A	N/A	Susan Pierce 304-558-0240 x 158
West Virginia Department of Natural Resources (WVDNR), Office of Land and Streams	Stream Activity Permit for construction in or across a stream	October 13, 2014	2 <sup>nd</sup> Quarter 2016	4 <sup>th</sup> Quarter 2016	Joe Scarberry 304-558-2754
West Virginia Division of Forestry	Consultation on potential impacts to state parks and forests	October 13, 2014	N/A	N/A	NA
<u>a/</u> Consultations will occur continuously throughout the development of the Project.					

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR1-19g**

**West Virginia USFWS**



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**ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.**

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2250 Lucien Way, Suite 302  
Maitland, FL 32751  
Phone: (321) 972-3958; Fax: (321) 972-3959

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Pesi 593

24 September 2014

Mr. John Schmidt  
United States Fish and Wildlife Service  
West Virginia Field Office  
694 Beverly Pike  
Elkins, WV 26241

Mr. Troy Andersen  
United States Fish and Wildlife Service  
Virginia Field Office  
6669 Short Lane  
Gloucester, VA 23061

**RE: Field Surveys for the Federally Endangered Shale Barren Rock Cress for the Mountain Valley Pipeline Project in Franklin, Giles, Montgomery, Pittsylvania, and Roanoke Counties, Virginia**

Dear Mr. Schmidt and Mr. Andersen:

Environmental Solutions & Innovations, Inc. (ESI) is submitting this inquiry on behalf of Mountain Valley Pipeline, LLC (MVP) for the Mountain Valley Pipeline Project (Project). The proposed Project entails construction of a 42-inch natural gas pipeline beginning at an existing gas extraction facility near Mobley, West Virginia and proceeding south and southeast for approximately 289 miles until it terminates at an existing Transco compressor station near Chatham, Virginia. The proposed Project is expected to cross Braxton, Doddridge, Fayette, Greenbrier, Harrison, Lewis, Monroe, Nicholas, Summers, Upshur, Webster, and Wetzel counties West Virginia and Franklin, Giles, Montgomery, Pittsylvania, and Roanoke counties, Virginia (**Figure 1**).

At such time that the route is set, and since the proposed Project will be completed within the bounds of the FERC Pre-filing process, MVP will "officially" initiate Informal Consultation with U.S. Fish and Wildlife Service (USFWS) under Section 7(a)(2) of the Endangered Species Act. MVP will be sending additional correspondence in the near future. Although, the Project route has not yet been finalized, MVP is seeking to initiate some field surveys this autumn. As such, this correspondence is being submitted to

**[www.EnvironmentalSI.com](http://www.EnvironmentalSI.com)**



request technical assistance from the Elkins and Gloucester Field Offices with regard to the federally endangered shale barren rock cress (*Arabis serotina*). Publicly available sources indicate that the shale barren rock cress is known only from Greenbrier County, West Virginia; however, a GIS desktop analysis shows the Project intersecting numerous shale areas within Virginia (**Figure 2**). Thus we would appreciate any additional information or clarification on the following:

- Will surveys for shale barren rock cress be requested in:
  - all or portions of Greenbrier County, West Virginia?
  - shale barren areas in Virginia?
  - other areas in either state?
- Does USFWS designate an allowable survey window for the species?
- A 300-foot survey corridor (150 feet each side of Project centerline) is currently proposed for all rare, threatened and endangered species on this project; is that acceptable for the purposes of this, and/or other plant surveys?

We respectfully request that USFWS respond by 8 October 2014 so that we may begin surveys during this field season.

In closing, we are aware of the Virginia Field Office's online Project Review process and will utilize that once the Project route is finalized. Likewise we are already working with the Virginia Department of Conservation and Recreation to obtain project-specific listed species information in the proximity to the route through the Natural Heritage Data Explorer. Please feel free to contact me or Megan Landfried from MVP if you have any questions or need additional Project information.

Sincerely,

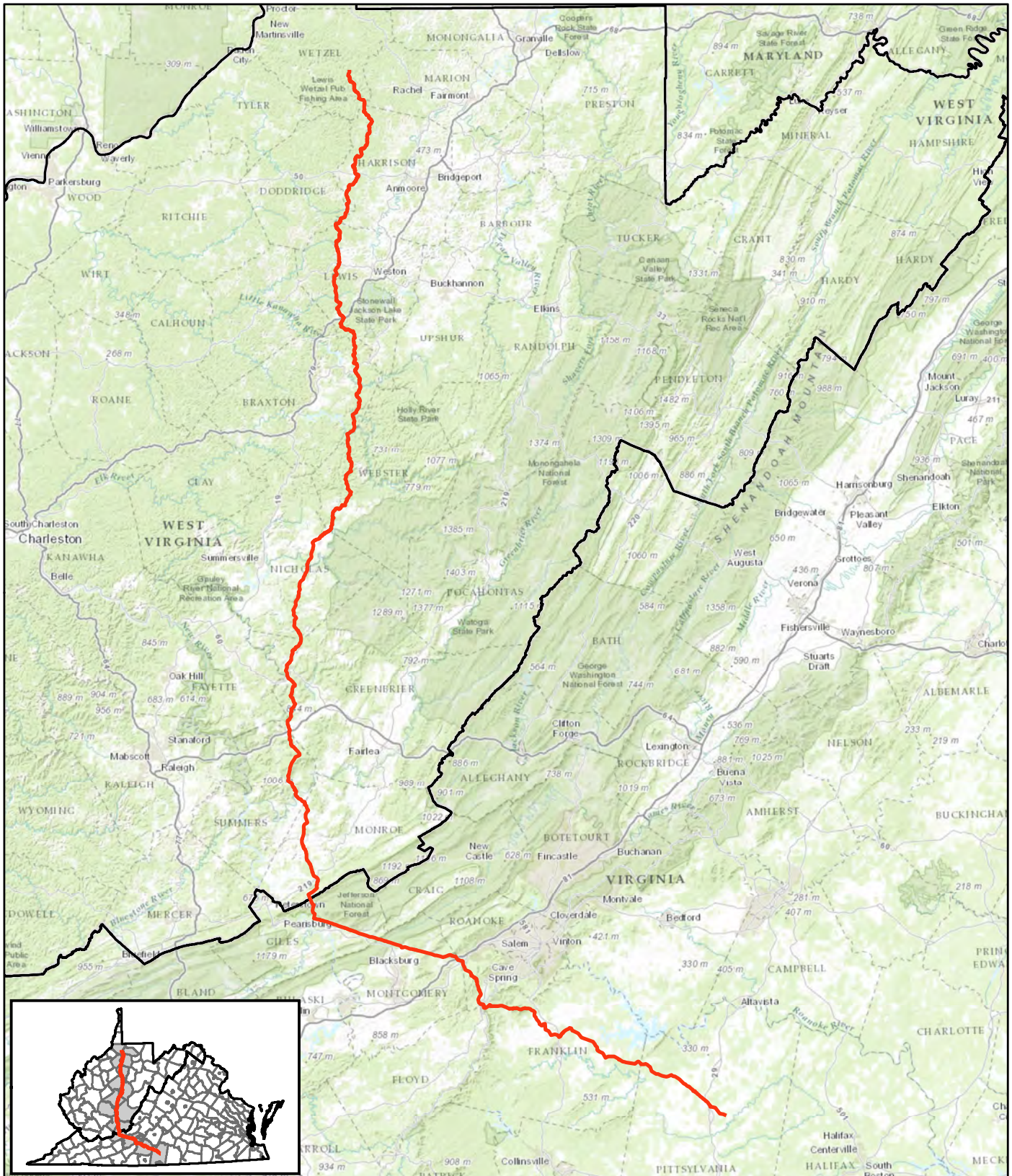


Daniel Judy  
Southeast Regional Manager  
(407) 269-7492  
DJudy@envsi.com

Megan Landfried  
Environmental Coordinator  
(304) 848-0061  
mlandfried@eqt.com

Enclosure: USGS Topographic Maps (Figures 1 and 2)

Path: G:\Current\593\_EQT\_MVP\MXD\Letters\_to\_USFWS\Shale\_Barren\_RockCress\_WV\_Fig1\_20140916.mxd (mbruenning) - 9/19/2014



— MVP Route Rev3 (20140908)

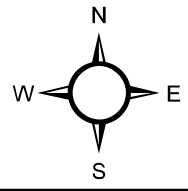
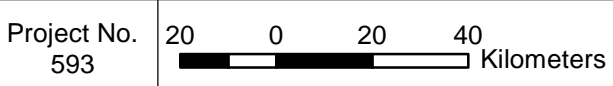


Figure 1. EQT's proposed Mountain Valley Pipeline Project within the States of Virginia and West Virginia.



**ESI** ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.

Project No. 593

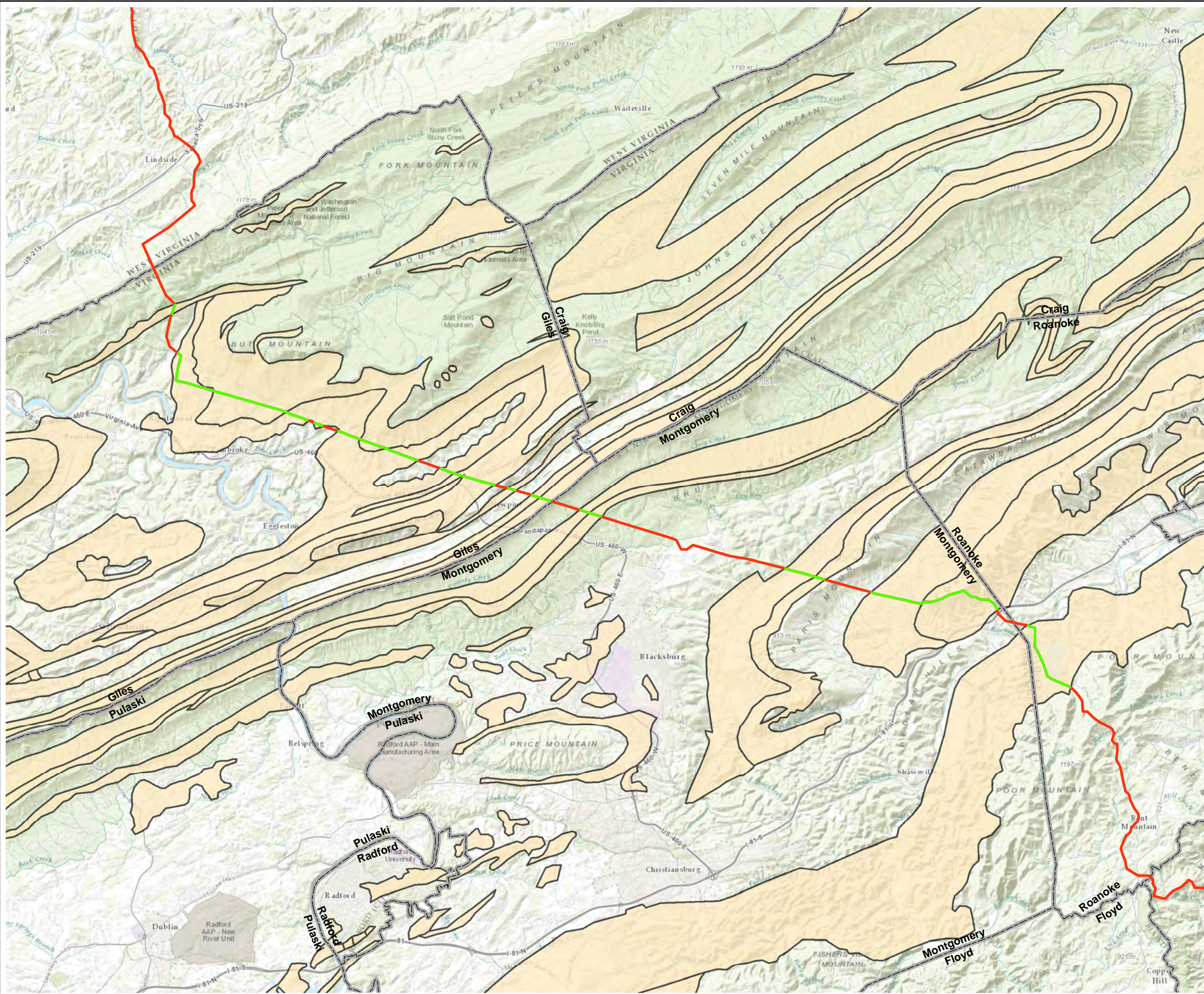
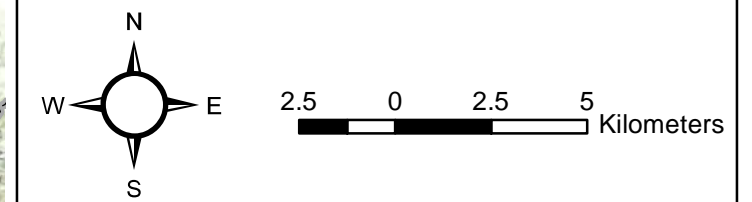
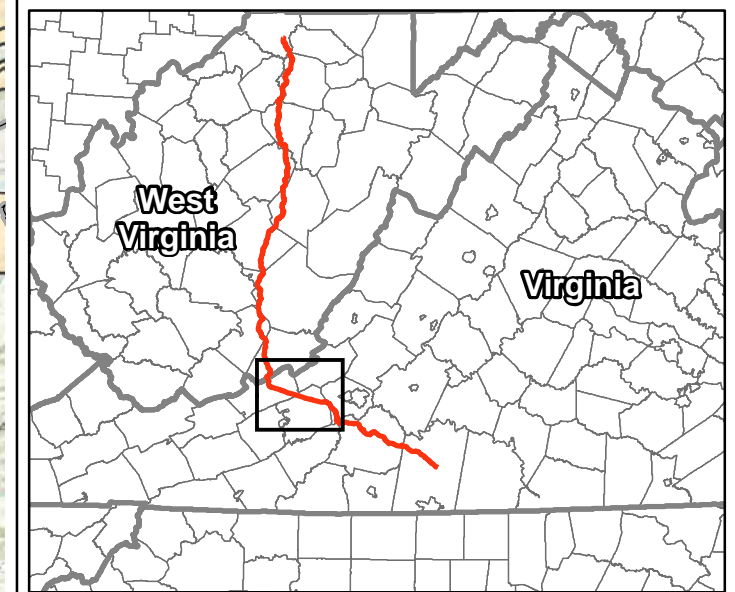


Figure 2. Areas of potential habitat for the shale barren rock cress located along the proposed Mountain Valley Pipeline Project within Franklin, Giles, Montgomery, Pittsylvania, and Roanoke counties, Virginia.

- MVP Route Rev3 (20140908)
- Portions of MVP Route Rev3 that cross known Shale Areas
- County Boundary
- Approximate USGS Shale Areas



Base Map: ESRI ArcGIS Web service - "World\_Topo\_Map" accessed - 9/19/2014

## Valerie Clarkston

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**From:** Stout, Elizabeth <elizabeth\_stout@fws.gov>  
**Sent:** Thursday, October 02, 2014 11:42 AM  
**To:** Daniel Judy  
**Subject:** Re: Mountain Valley Pipeline Project

We review projects as a whole for all species, not bit by bit.

The window for SBRC ended 2 days ago.

Thanks,

On Thu, Oct 2, 2014 at 11:32 AM, Daniel Judy <[djudy@environmentalsi.com](mailto:djudy@environmentalsi.com)> wrote:  
Hi Liz,

The letter we sent was only meant to pertain to shale barren rock cress (for now). We were hoping to get specific survey information for that species in hopes of completing some surveys for it this year (I'm pretty sure we are outside the window now though).

They are finalizing the route this week. I will send you the official route shapefiles next week once I receive them so we can kick things off for all the other species.

Sorry for the confusion!

Daniel J. Judy  
Environmental Solutions & Innovations  
407.269.7492

Sent from my iPhone

On Oct 2, 2014, at 11:20 AM, Stout, Elizabeth <[elizabeth\\_stout@fws.gov](mailto:elizabeth_stout@fws.gov)> wrote:

Daniel,

Can you send me the shapefile for this project so I can more accurately determine what species may be an issue? It will definitely be far more than the potential shale barren rock cress your letter notes.

Likely will need to address potential impacts to federally listed freshwater mussels, bats, and multiple plant species. I cannot know for certain without being able to look at the area of the current proposed alignment in more detail.

Thanks,

--

**Liz Stout**  
Fish and Wildlife Biologist; GIS Technician

U.S. Fish and Wildlife Service  
West Virginia Field Office  
694 Beverly Pike  
Elkins, WV 26241  
(304) 636 6586 x15  
<http://www.fws.gov/westvirginiafieldoffice/index.html>

*\*\*Due to an imposed hiring freeze and the inability to back fill positions, we are experiencing increased project review times (a minimum of 60 days) and response times to phone calls and emails. Please be patient; we will address projects in the order in which they are received.\*\**

--

**Liz Stout**

Fish and Wildlife Biologist; GIS Technician  
U.S. Fish and Wildlife Service  
West Virginia Field Office  
694 Beverly Pike  
Elkins, WV 26241  
(304) 636 6586 x15  
<http://www.fws.gov/westvirginiafieldoffice/index.html>

*\*\*Due to an imposed hiring freeze and the inability to back fill positions, we are experiencing increased project review times (a minimum of 60 days) and response times to phone calls and emails. Please be patient; we will address projects in the order in which they are received.\*\**



October 13, 2014

Mr. John Schmidt  
United States Fish and Wildlife Service  
West Virginia Field Office  
694 Beverly Pike  
Elkins, WV 26241

**Subject: Mountain Valley Pipeline Project**

Dear Mr. Schmidt,

Mountain Valley Pipeline, LLC, a joint venture of EQT Corporation and a subsidiary of NextEra Energy, Inc., is hereby providing background information on the proposed Mountain Valley Pipeline (MVP) Project (Project). MVP plans to construct an approximately 300-mile, 42-inch diameter natural gas pipeline to allow producers and end-users a direct route to transport new gas supplies to meet the growing need for natural gas in the southeastern United States.

The pipeline will extend from the existing Equitrans transmission system in Wetzel County, West Virginia to Transcontinental Gas Pipeline Company's (Transco) Zone 5 compressor station 165 in Pittsylvania County, Virginia. In addition to the pipeline, the Project will require approximately 225,000 horsepower of compression at approximately four compressor stations along the route along with measurement, regulation, and other ancillary facilities required for the safe operation of the pipeline. A Project map has been included as an attachment to this letter.

The Federal Energy Regulatory Commission (FERC) will serve as the lead agency for the Project. MVP plans to request to use the FERC's pre-filing process in late October 2014 and anticipates filing a formal application with the FERC in the third quarter of 2015. The FERC will then prepare an Environmental Assessment or an Environmental Impact Statement to satisfy the National Environmental Policy Act (NEPA) process for the Project.

MVP and their consultants, Tetra Tech, Inc. and Environmental Solutions & Innovation, Inc., will be consulting with the United States Fish and Wildlife Service West Virginia Field Office as necessary during the development of the Project. However, in order to assist MVP in preparing the FERC application and identifying possible issues to be addressed during the NEPA process, the purpose of this letter is to notify the United States Fish and Wildlife Service West Virginia Field Office of MVP's intent to utilize the FERC's NEPA Pre-Filing Process, and to request information on resources under your agency's jurisdiction that could be potentially affected by the Project.

Mr. John Schmidt  
October 13, 2014  
Page 2 of 2

As part of the MVP team, I look forward to working with you and the rest of the Elkins field office staff as the development of this Project moves forward. We appreciate your assistance and thank in you advance for any help you can provide. A representative of MVP team, Daniel Judy from Environmental Solutions & Innovations, will be in contact with you soon to discuss specific survey windows and strategies.

If you have questions or would like additional information about the Project please contact me at 304-848-0061 ([MLandfried@eqt.com](mailto:MLandfried@eqt.com)), or Sean Sparks at 617-443-7565 ([sean.sparks@tetrattech.com](mailto:sean.sparks@tetrattech.com)).

Sincerely,

A handwritten signature in blue ink that reads "Megan Landfried Neylon". The signature is written in a cursive, flowing style.

Megan Landfried Neylon  
Senior Environmental Coordinator

cc: John Centofanti, EQT Corporation  
Blayne Gunderman, NextEra Energy Resources, LLC  
Sean Sparks, Tetra Tech  
Daniel Judy, Environmental Solutions & Innovations



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**ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.**

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2250 Lucien Way, Suite 302  
Maitland, FL 32751  
Phone: (321) 972-3958; Fax: (321) 972-3959

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Pesi 593

30 October 2014

Mr. John Schmidt  
United States Fish and Wildlife Service  
West Virginia Field Office  
694 Beverly Pike  
Elkins, WV 26241

**RE: Mountain Valley Pipeline Project Review Request**

Dear Mr. Schmidt,

Environmental Solutions & Innovations, Inc. (ESI) is submitting this correspondence in association with the letter submitted by Mountain Valley Pipeline, LLC (MVP) regarding the Mountain Valley Pipeline Project (Project) on 13 October 2014, and to officially initiate informal consultation with the United States Fish and Wildlife Service West Virginia Field Office (USFWS-WV). The Federal Energy Regulatory Commission (FERC) will serve as the lead agency for the Project with Tetra Tech, Inc. and ESI as MVP's environmental consultants.

The 42-inch diameter natural gas pipeline ( $\approx$ 300 miles) will extend from the existing Equitrans transmission system in Wetzel County, West Virginia to Transcontinental Gas Pipeline Company's (Transco) Zone 5 compressor station 165 in Pittsylvania County, Virginia. In West Virginia, the pipeline is expected to cross Braxton, Doddridge, Fayette, Greenbrier, Harrison, Lewis, Monroe, Nicholas, Summers, Upshur, Webster, and Wetzel counties (**Figure 1**). Electronic shapefiles for the Project accompany this letter to assist in your review.

ESI respectfully requests the initiation of the Project Review process with the USFWS-WV including identification of listed species that fall under the Endangered Species Act, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act, with the potential to be impacted by the project. Likewise we respectfully request input from the Service regarding requests for surveys or reporting necessary for MVP to ensure compliance with these Acts.



Please feel free to contact me or Megan Landfried Neylon from MVP if you have any questions or need additional Project information.

Sincerely,

A handwritten signature in black ink, appearing to read 'Daniel Judy', enclosed in a thin black rectangular border.

Daniel Judy  
Southeast Regional Manager  
(407) 269-7492  
DJudy@envsi.com

Enclosure: Project Location Map (Figure 1)  
Project shapefiles



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**ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.**

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

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Pesi 593.09

11 November 2014

**Mountain Valley Pipeline (MVP) meeting with USFWS, Elkins, West Virginia (WV and VA representatives).**

Ms. Megan Neylon (EQT) provided project overview and summary.

- A portion of the MVP route goes through Jefferson National Forest; 2.6 miles total with 1.5 miles being co-located, 75' permanent ROW and 125' construction ROW
- Most of the route was originally collocated with existing electrical utility ROW; because pipelines cannot span valleys as power lines can, reroutes were necessary that reduced the amount of collation.

Liz (USFWS-WV) and Tiernan (USFWS-WV) indicated that since the project crosses only 2 states (instead of 3 or more), it is unlikely that one office will make decisions for the entire Project; both offices will coordinate with each other and provide guidance for portions of the project that occur within their state.

**Bats**

Ms. Taina Pankiewicz (ESI) reviewed each section of the bat study plan to provide agencies opportunity to comment:

Portal Searches:

- Taina (ESI) inquired as to what criteria would be used to determine if a potentially suitable portal located within the 300' survey corridor would have an impact on the project or not. USFWS-WV indicated that it would depend on a variety of characteristics including the location, orientation and overall topography of the area.
- USFWS-VA agree with methods presented in plan; USFWS-VA indicated a known cave is located along the current route within ESI's mapped Kilometer Mist Net Site: VA-KM290.

- USFWS-WV indicated that the southern “buffer” identified on the files from USFWS is a Priority 3 or 4 Hibernacula, not a summer record.

Portal Sampling (Surveys):

- USFWS-WV follows guidelines consistent with what is currently posted on their webpage: <http://www.fws.gov/westvirginiafieldoffice/indianabat.html>. The Draft Protocol for Assessing Abandon Mines/Caves for Bat Use (Updated June 2011). (i.e., Portal sampling conducted on two consecutive nights)
- USFWS-VA follows 2014 Federal range-wide guidelines for portal surveys/trapping (vs. WV guidance outlined in the draft Study Plan document).
- USFWS-VA indicated that guidance regarding requirements for in-cave hibernacula surveys are TBD and will be forthcoming from Sumalee.

Mist Netting:

- USFWS-WV and VA both agreed to the steps proposed in Section 4.3.9. of the bat study plan
- Mist netting survey window
  - USFWS-WV sticking to 1 June start date to 15 August
  - USFWS-VA will start 15 May to 15 August
- Time period for which negative results are valid
  - 3 years from completion of surveys in VA
  - 5 years from completion of surveys in WV
- Northern long-eared bats (NLEB)
  - Discussion of tracking of endangered bats (Section 4.3.8) regarding how many and sex of NLEB should be transmitted
    - WV indicated that the species will be listed or not will occur in April 2015, and thus an answer will present itself at that time.
    - VA follows 2014 range-wide guidelines which indicates that NLEB should be treated same as the Indiana bat
  - In 2014, WV saw captures of NLEB constituting 50% - 60% of total capture. VA said they were not seeing capture rates as high
  - No clear answer as to the size or probability of applying seasonal clearing restrictions within NELB capture buffers
- USFWS-VA (Troy) requested additional information (data sheets, figures, pictures, etc.) on each excluded area (Section 4.3.2) be submitted to the Agency at the time they are reviewed in the field so that USFWS can comment/concur before mist netting is completed. Preferred correspondence method is through email. WV field office agreed.

- USFWS does not need hardcopies of all mist net survey data sheets; including a disk containing electronic copies with the report is sufficient.

## **Aquatics**

Mr. Casey Swecker (ESI) provided brief discussion on how freshwater mussels and other aquatic species (i.e. Roanoke logperch) would be handled.

- USFWS-WV agreed that following the WV Mussel Protocol is appropriate. WV anticipates updating the mussel survey guidelines prior to 2015 survey season
- Megan (EQT) indicated that, at this time, the intention is to complete surveys on all potential mussel streams since it is unclear which will be bored. Once a determination is made regarding directional drilling, some streams may be removed from the survey que since this will avoid impacts.
- Kim (USFWS-VA) indicated that they don't necessarily agree that surveys can be omitted for proposed HDD streams since there is a potential for an inadvertent return of drilling fluids into the stream as result of the HDD/Bore.
- USFWS requested hardcopy maps be included in all correspondence related to mussel surveys.
- Casey indicated that ESI has begun doing the desktop analysis for which streams may require aquatic species surveys, including analysis of area drained by a stream at a proposed point of crossing. He cited the crossing of Craig Creek as an example where surveys may not be required, despite the James Spynymussel being known from the stream, since less than 3 mi<sup>2</sup> are drained at the point of crossing.
- EQT and ESI indicated that we will collaborate with USFWS regarding the areas requiring survey and a conservative approach would be used to ensure all mussel concerns are covered.
- ESI proposes to follow USFWS-VA and VDGIF's DRAFT Freshwater Mussel Guidelines for Virginia (updated 4 September 2013).
- ESI will begin field efforts to address concerns for mussels by completing Site Assessments on streams identified by IPaC and agencies. Subsequently surveys will be completed as necessary and appropriate as the project evolves.
- ESI will copy Mr. Brian Watson (VA Dept. of Game & Inland Fisheries-Aquatic Resources Biologist/Malacologist) on all correspondence with USFWS regarding mussel surveys in Virginia, including the Study Plan(s).
- USFWS-VA indicated that Time of Year restrictions (TOYR) are the same as VDGIF and these, as well as protocols for species surveys and in-stream construction are available on their webpage <http://www.fws.gov/northeast/virginiafield/index.html>.

- Kim (USFWS-VA) indicated that surveys for the Roanoke logperch will not be required, since not finding them doesn't mean that they aren't there, but habitat assessments may be warranted.
- Taina (ESI) inquired what types of project impacts Roanoke logperch might have on the project.
- Kim (USFWS-VA) indicated that avoidance via boring is preferred. If open trench in a known occurrence stream with suitable habitat is necessary, then Formal Consultation will be required. If the occurrence is in a tributary to a known occurrence stream then seasonal avoidance (15 Mar – 30 June) is a sufficient avoidance technique.

- 

## IPaC

- USFWS-VA inquired about the results of the IPaC system for project species review.
  - ESI indicated that the system would not return a result and repeatedly errored out saying there are “too many vertices”.
  - Troy (USFWS-VA) indicated that they would have their GIS person (Jessica) contact ESI to assist with getting the shape files input to IPaC.
- VA indicated that the IPaC would identify potential mussel streams, fish streams, areas of plant concern, etc. If IPaC indicates that no habitat is present for a species then NO surveys are required for that species. Caveat: make sure that the ENTIRE project Action Area (i.e., Access Roads, ancillary facilities, etc.,) are all including in the shape file submitted to the system for review.
- WV indicated that the IPaC may not be completely complete and correct for plants in their state. Specifically, the “suitable habitat” layers for plants are not loaded. To that end, they will provide the Applicant with specific information regarding
  - which plants are known from near the project area
  - which counties RBC is known from
  - surveys are required in these “areas”

## MEETING ATTENDEES:

Megan Neylon, EQT  
[MNeylon@eqt.com](mailto:MNeylon@eqt.com)  
Office: (304) 848-0061  
Cell: (304) 841-2086

Jackie Kingston, Nextera Energy  
[Jacquelyn.Kingston@nee.com](mailto:Jacquelyn.Kingston@nee.com)  
Office (561) 691-2766  
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Taina Pankiewicz, ESI  
[TPankiewicz@envsi.com](mailto:TPankiewicz@envsi.com)  
Office: (513) 451-1777  
Direct Dial: (513) 591-4311  
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Valerie Clarkston, ESI  
[VClarkston@envsi.com](mailto:VClarkston@envsi.com)  
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Casey Swecker, ESI  
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Liz Stout, U.S. Fish and Wildlife Service (WV)  
[Elizabeth\\_Stout@fws.gov](mailto:Elizabeth_Stout@fws.gov)  
Office: (304) 636-6586 Ext. 15

Tiernan Lennon, U.S. Fish and Wildlife Service (WV)  
[Tiernan\\_Lennon@fws.gov](mailto:Tiernan_Lennon@fws.gov)  
Office: (304) 636-6586 Ext. 12

## CONFERENCE CALL-IN MEETING ATTENDEES:

Daniel Judy, ESI  
[DJudy@envsi.com](mailto:DJudy@envsi.com)  
Office: (321) 972-3958  
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Troy Andersen, U.S. Fish and Wildlife Service (VA)

[Troy\\_Andersen@fws.gov](mailto:Troy_Andersen@fws.gov)

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Kim Smith (formerly Kim Marbain), U.S. Fish and Wildlife Service (VA)

[Kimberly\\_Smith@fws.gov](mailto:Kimberly_Smith@fws.gov)

Office: (804) 824 - 2410

## Valerie Clarkston

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**From:** Stout, Elizabeth <elizabeth\_stout@fws.gov>  
**Sent:** Tuesday, November 25, 2014 7:47 AM  
**To:** Valerie Clarkston  
**Cc:** Lennon, Tiernan (tiernan\_lennon@fws.gov); Taina Pankiewicz; Daniel Judy  
**Subject:** Re: MVP - IPaC RTE Species List  
**Attachments:** MVP1.jpg; MVP2.jpg; MVP3.jpg

First of 3 emails with maps. 3 maps will be in each email.  
Not noted in the legend: your current proposed ROW is in red.

On Wed, Nov 19, 2014 at 12:13 PM, Valerie Clarkston <[VClarkston@envsi.com](mailto:VClarkston@envsi.com)> wrote:

Liz,

Thank you for your response. Would it be possible to provide us with the location info mentioned during last week's meeting that you said would be provided along with this list of species? We already agree that bat surveys will be conducted along the entire length of the line, and mussel surveys will be conducted at stream crossings that meet survey criteria. However, we are still not clear on where along the line we should target survey efforts for plants and birds. For example:

1). According to the hard copy map of federally listed species occurrences that you provided us during the 11/10 meeting, the MVP line will cross streams (Gauley River and Meadow River) with known occurrences of Harperella and Virginia spiraea. Is it safe to assume we restrict our surveys for these plant species along this portion of the line?

2). Shale barren rock cress is known to occur in Greenbrier County. Do we restrict our surveys for this plant along portions of the project that cross Greenbrier? Do we follow these same assumptions for the other listed plants?

Thanks,

Valerie

Valerie Clarkston



Scientist

*Environmental Solutions & Innovations, Inc.*

4525 Este Avenue

Cincinnati, OH 45232

Office 513.451.1777

Mobile 513.382.0925

**From:** Stout, Elizabeth [mailto:[elizabeth\\_stout@fws.gov](mailto:elizabeth_stout@fws.gov)]

**Sent:** Wednesday, November 19, 2014 9:01 AM

**To:** Valerie Clarkston

**Cc:** Lennon, Tiernan ([tiernan\\_lennon@fws.gov](mailto:tiernan_lennon@fws.gov)); Taina Pankiewicz; Daniel Judy

**Subject:** Re: MVP - IPaC RTE Species List

Federally listed species that may be impacted by the MVP project in WV:

- Indiana bat
- proposed Northern long-eared bat
- Federally listed mussels (varies based on stream)
- Running buffalo clover
- Small whorled pogonia
- Virginia spiraea
- Shale barren rock cress

Migratory birds and bald and golden eagles may also be impacted; species will vary depending on location as the line traverses very diverse habitats across a large area.

On Thu, Nov 13, 2014 at 4:33 PM, Valerie Clarkston <[VClarkston@envsi.com](mailto:VClarkston@envsi.com)> wrote:

Hi Liz and Tiernan,

Attached are the species lists provided by IPaC for the proposed MVP Project as well as the shapefile of its current route. Are you still willing to verify the accuracy of these results in WV, especially with regards to the plants?

With your permission, I would like to include this email and your response within the Project's correspondence record.

Thank you,

Valerie



**Valerie Clarkston**

Scientist

Environmental Solutions & Innovations, Inc.

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--

**Liz Stout**

Fish and Wildlife Biologist; GIS Technician

U.S. Fish and Wildlife Service

West Virginia Field Office

694 Beverly Pike

Elkins, WV 26241

(304) 636 6586 x15

<http://www.fws.gov/westvirginiafieldoffice/index.html>

*\*\*Due to an imposed hiring freeze and the inability to back fill positions, we are experiencing increased project review times (a minimum of 60 days) and response times to phone calls and emails. Please be patient; we will address projects in the order in which they are received.\*\**

--

**Liz Stout**

Fish and Wildlife Biologist; GIS Technician

U.S. Fish and Wildlife Service

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694 Beverly Pike

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*\*\*Due to an imposed hiring freeze and the inability to back fill positions, we are experiencing increased project review times (a minimum of 60 days) and response times to phone calls and emails. Please be patient; we will address projects in the order in which they are received.\*\**



## TELEPHONE / PERSONAL CONVERSATION REPORT

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<b>PROJECT NAME:</b>	Mountain Valley Pipeline Project
<b>MVP TEAM CALLER:</b>	Valerie Clarkston
<b>CONVERSATION WITH:</b>	Tiernan Lennon
<b>AGENCY:</b>	USFWS-WV
<b>EMAIL ADDRESS:</b>	Tiernan_Lennon@fws.gov
<b>PHONE NUMBER:</b>	304-636-6586 EXT 12
<b>SUBJECT:</b>	MVP Bat Study Plan – Revised Version
<b>DATE AND TIME:</b>	3/23/2015 @ 9:50 AM

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### SUMMARY OF CONVERSATION:

Valerie contacted Tiernan to inquire about review of the revised Bat Study Plan which was submitted 2 weeks ago to the Elkins Field Office. Tiernan indicated that it has not been reviewed yet, but she intends to begin reviewing study plans after March 31. Right now the Elkins Field Office is busy reviewing numerous Indiana Bat Conservation Plans which have a more sensitive timeline than study plans at this moment. Tiernan said she would contact ESI once the study plan has been reviewed.

Contact Signature: \_\_\_\_\_



## TELEPHONE / PERSONAL CONVERSATION REPORT

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<b>PROJECT NAME:</b>	Mountain Valley Pipeline Project
<b>MVP TEAM CALLER:</b>	Valerie Clarkston
<b>CONVERSATION WITH:</b>	Tiernan Lennon
<b>AGENCY:</b>	USFWS – WV Elkins Field Office
<b>EMAIL ADDRESS:</b>	<a href="mailto:Tiernan_Lennon@fws.gov">Tiernan_Lennon@fws.gov</a>
<b>PHONE NUMBER:</b>	304-636-6586 EXT 12
<b>SUBJECT:</b>	MVP Revised Bat Study Plan
<b>DATE AND TIME:</b>	3/30/2015 at 9:20 AM

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### SUMMARY OF CONVERSATION:

Valerie called Tiernan to see if the revised Bat Study Plan had been reviewed. Tiernan indicated that the plan was on her desk and her goal was to get through it by the end of today.

Valerie also asked Tiernan if she had a copy of the cover letter which contained questions regarding clarifications about plant surveys. Tiernan said she has a copy and will provide suggestions regarding plant surveys along with her comments on the Bat Study Plan.

Valerie mentioned that she is also awaiting feedback from Barb Sargent (WVDNR) regarding any other RTE species surveys in WV. Tiernan asked that Valerie forward Barb's results and suggestions to her once ESI receives them.



## TELEPHONE / PERSONAL CONVERSATION REPORT

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<b>PROJECT NAME:</b>	Mountain Valley Pipeline Project
<b>MVP TEAM CALLER:</b>	Valerie Clarkston
<b>CONVERSATION WITH:</b>	Tiernan Lennon
<b>AGENCY:</b>	USFWS – Elkins Field Office
<b>EMAIL ADDRESS:</b>	<a href="mailto:Tiernan_Lennon@fws.gov">Tiernan_Lennon@fws.gov</a>
<b>PHONE NUMBER:</b>	304-636-6586
<b>SUBJECT:</b>	MVP Bat Study Plan and NLEB captures
<b>DATE AND TIME:</b>	4/6/2015 at 230 PM

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### SUMMARY OF CONVERSATION:

Tiernan called Valerie to discuss the revised bat study plan. Tiernan indicated everything looked fine and to make sure we are following the newly released 2015 Indiana Bat Summer Survey Guidelines, especially with regards to how mist net sites (“KM blocks”) are determined on linear corridors.

Tiernan also indicated that the netting effort on MVP is due to change because USFWS intends to release the capture/roost buffers associated with NLEB captures. She indicated that, at a quick glance, MVP intersected many buffers and would have to adhere to off season clearing within the buffers and conduct detailed habitat assessments within the buffers. Depending on how many NLEB buffers are intersected, Tiernan suggested that MVP may want to commit to off season clearing instead of netting, if feasible.

Tiernan said the USFWS is still working on compiling all of the NLEB buffers into a GIS shapefile and will supply us with this layer once it is complete.

Valerie asked how NLEBs would be treated with regards to radio-telemetry requirements. Tiernan indicated they would have similar requirements to those already in place for Indiana bats. Valerie asked what would be the minimum number of NLEB one would be required to transmitter along a project corridor. Five for every 10 kilometers? Tiernan was not sure of the answer but indicated she would discuss this further with Barb Douglas. Tiernan mentioned that negative results for NLEB presence/absence surveys would be good for 5 years, just like for Indiana bats.

Contact Signature: \_\_\_\_\_



## TELEPHONE / PERSONAL CONVERSATION REPORT

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<b>PROJECT NAME:</b>	Mountain Valley Pipeline Project
<b>MVP TEAM CALLER:</b>	Valerie Clarkston
<b>CONVERSATION WITH:</b>	Tiernan Lennon
<b>AGENCY:</b>	USFWS – Elkins Field Office
<b>EMAIL ADDRESS:</b>	<a href="mailto:Tiernan_Lennon@fws.gov">Tiernan_Lennon@fws.gov</a>
<b>PHONE NUMBER:</b>	304-636-6184
<b>SUBJECT:</b>	Plant Surveys
<b>DATE AND TIME:</b>	4/8/2015 at 10:20 AM

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### SUMMARY OF CONVERSATION:

Tiernan called in response to Valerie's questions regarding areas where endangered plant surveys should occur along the project route. Tiernan indicated the model used by the USFWS to predict species occurrence does not currently provide predictions of suitable habitat for plants. Instead, Tiernan requested that ESI first conducts searches for suitable habitat counties crossed by the Project in which endangered plant species are believed to occur in. Within each patch of suitable habitat that is identified, a thorough field search for individual plants should occur. Tiernan indicated that a formal study plan for plant surveys is not required, but she would like ESI to submit GIS information and a short summary regarding the areas of suitable habitat to the Elkins Field Office. Valerie indicated that ESI will likely submit a study plan regardless as part of the project record and agreed to submit a detailed report of all findings to the USFWS.

Tiernan also requested that Valerie send her updated project shapefiles like the ones displayed on figures included in the Bat Study Plan. Valerie agreed to forward those to her after their conversation.

Tiernan informed Valerie that the USFWS hope to have the new NLEB bat buffers ready by no later than next Monday (4/13/2015). Tiernan indicated that ESI would be included on the mailing list.

Valerie asked if the Elkins Field Office was going to supply formal comments regarding the MVP project. Tiernan indicated she had no idea formal comments had yet to be provided but said she would look into it. Tiernan mentioned she was playing catch up with MVP because it was Liz Stout's project but now she had been awarded it.

Contact Signature: \_\_\_\_\_



## TELEPHONE / PERSONAL CONVERSATION REPORT

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<b>PROJECT NAME:</b>	Mountain Valley Pipeline Project
<b>MVP TEAM CALLER:</b>	Valerie Clarkston
<b>CONVERSATION WITH:</b>	Tiernan Lennon
<b>AGENCY:</b>	USFWS Elkins Field Office
<b>EMAIL ADDRESS:</b>	<a href="mailto:Tiernan_Lennon@fws.gov">Tiernan_Lennon@fws.gov</a>
<b>PHONE NUMBER:</b>	304-636-6586
<b>SUBJECT:</b>	NLEB Buffers
<b>DATE AND TIME:</b>	4/16/2015 at 8:55 AM

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### SUMMARY OF CONVERSATION:

Valerie called Tiernan to ask if the NLEB buffers were available. Tiernan indicated that Liz Stout was out of the office today and would not be able to distribute them. Tiernan also stated that the NLEB buffers area awaiting approval from Barb Douglas before mass distribution and that ESI is not the only one who has been asking for them. If Barb gives the go-ahead, then Tiernan will ask that Liz send them over.

Valerie asked if there would be any differences in clearing restrictions in NLEB buffers vs Ibat buffers. Tiernan replied that NLEBs would be treated the same as Ibats. For projects within NLEB buffers, a Conservation Plan similar to the IBCP would need to be written, and off-season clearing (15 Nov – 31 March) and proposed mitigation must be followed. The only difference is that you would be looking for NLEB suitable habitat (i.e., trees  $\geq 3''$ ) instead of Ibat habitat. For areas outside of the NLEB buffers and where mist net results were negative, those results are good for 5 years – just like they are for Ibats. If NLEB are caught and/or roosts found, then buffers would be created and adherence to off-season clearing, production of conservation plan, and proposed mitigation efforts must be followed where the project intersects those buffers.





# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

West Virginia Field Office  
694 Beverly Pike  
Elkins, West Virginia 26241



April 23, 2015

Ms. Valerie Clarkston  
Environmental Solutions & Innovations, Inc.  
4525 Este Avenue  
Cincinnati, Ohio 45232

Re: EQT Corporation and NextEra Energy, Inc., Mountain Valley Pipeline Project, Braxton, Doddridge, Fayette, Greenbrier, Harrison, Lewis, Monroe, Nicholas, Summers, Upshur, Webster, and Wetzel Counties, West Virginia

Dear Ms. Clarkston:

This responds to your request of October 13, 2014, for information regarding the potential occurrence of federally listed endangered and threatened species and their designated critical habitats. Mountain Valley Pipeline, LLC (MVP), a joint venture of EQT Production (EQT) and a subsidiary of NextEra Energy, Inc., proposes to construct the Mountain Valley Pipeline Project through portions of Braxton, Doddridge, Fayette, Greenbrier, Harrison, Lewis, Monroe, Nicholas, Summers, Upshur, Webster, and Wetzel counties, West Virginia and Craig, Franklin, Giles, Montgomery, Pittsylvania and Roanoke counties, Virginia. MVP has identified multiple potential routes, but the final alignment will be approximately 300 miles. The total length of all potential routes is approximately 386.93 miles (216.98 miles in West Virginia and 169.95 miles in Virginia). These comments are provided pursuant to the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*), the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668c, as amended), and the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712).

The U.S. Fish and Wildlife Service (Service) has determined that 7 federally listed endangered species and 3 federally listed threatened species, respectively, are known to occur within the West Virginia portion of the proposed project area, and may be affected by the construction and operation of the proposed project. These are the endangered Indiana bat (*Myotis sodalis*), Virginia big-eared bat (*Corynorhinus townsendii virginianus*), clubshell mussel (*Pleurobema clava*), snuffbox mussel (*Epioblasma triquetra*), James spiny mussel (*Pleurobema collina*), shale barren rock cress (*Arabis serotina*), running buffalo clover (*Trifolium stoloniferum*), and the

threatened northern long-eared bat (*Myotis septentrionalis*), small whorled pogonia (*Isotria medeoloides*), and Virginia spiraea (*Spiraea virginiana*). Information to avoid impacts to these species is provided below.

### **Endangered and Threatened Bats**

Known and potential habitat for Indiana and northern long-eared bats occurs within the proposed project alignment. The proposed alignment passes through potential summer habitat for Indiana and northern long-eared bats in Lewis, Braxton, and Summers Counties. In addition, it passes through summer capture, maternity, and hibernacula known-use areas in portions of Doddridge, Fayette, Greenbrier, Harrison, Monroe, Nicholas, Webster, and Wetzel counties.

MVP has decided to perform summer habitat surveys for portions of the alignment that lie outside of known-use areas. An Indiana Bat/Northern Long-Eared Bat Conservation Plan (plan guidelines attached) will need to be completed for sections of the proposed alignment that fall within known-use areas.

The presence of caves and mine portals, and their use by bats, must also be addressed. Suitable winter habitat (hibernacula) for Indiana bats and northern long-eared bats include underground caves and cave-like structures (e.g. abandoned or active mines, railroad tunnels). There may be other landscape features being used by northern long-eared bats during the winter that have yet to be documented. Generally, both species hibernate between November 15 and March 31, use caves and areas near caves for fall-swarmer activity, and male Indiana bats have been known to use caves and portals as summer roosts. Virginia big-eared bats use caves or mine portals during any time of the year. Mine portals used by this species are known to occur in Fayette County.

The proposed pipeline should be surveyed for caves and mine portals. This survey can be performed by mining engineers, other field personnel, or biologists with experience identifying caves or mines. The survey should include a review of topographic, mining, karst occurrence, and environmental resources information maps; as well as actual field reviews of the entire proposed project area. For linear projects (e.g., transmission lines, natural gas pipelines, highways, and access roads), the field survey should include lands buffering the disturbance footprint of the proposed linear project, extending to 0.6 mile (1 km) on each side of the outer edges of the footprint.

Any caves and portals found should be evaluated for characteristics that may indicate potential use by bats. A Phase I Cave/Mine Portal Survey Data Sheet should be completed for each opening found. This data sheet is enclosed and results should be compared against the criteria listed in the Draft Protocol for Assessing Abandoned Mines/Caves for Bat Use. The data obtained from the survey should be provided to the Service for review and agreement before any federal permits are issued for this project and before a final decision on any alignment is made.

Any caves and portals determined not to exhibit potential habitat for bats, based upon the criteria referenced above, will not require any further assessments for the presence of federally listed bat species. If caves and/or portals at the proposed site appear to have suitable bat habitat characteristics, mist net surveys or trapping may be recommended. Guidelines for conducting these surveys are provided in the Draft Protocol for Assessing Abandoned Mines/Caves for Bat Use. However, due to concerns about the potential for mist netting and trapping at caves or portals to exacerbate the spread of white nose syndrome, please contact this office for the most current recommendations and protocols prior to conducting these activities. The results of any surveys should be provided to this office for review and agreement before any federal permits are issued for this project and before a final decision on any alignment is made. If federally listed bats are found using caves or portals in the project area, further consultation will be necessary.

It should be noted that adverse impacts to caves or mine portals that are used by endangered bat species may result in violation of section 9 of the ESA. Caves may also contain other sensitive species, and activities that may adversely affect cave passages and openings should generally be avoided to the maximum extent practicable.

No tree clearing on any portion of the project area should occur until consultation under section 7 of the ESA, between the Service and the Federal Energy Regulatory Commission (FERC), is completed. The Service needs to review the results of the habitat evaluations, mist net surveys, and the proposed conservation plan before making a determination on bat species.

### **Freshwater Mussels**

The project proposes to cross Leading Creek and the Little Kanawha River, which support clubshell and snuffbox mussels, and to cross the South Fork of Potts Creek, which supports the James spinymussel.

The Service highly recommends that MVP select the route that does not cross the South Fork of Potts Creek. The South Fork of Potts Creek is a highly sensitive stream containing the only known population of the federally endangered James spinymussel in the state. This watershed should be avoided in its entirety if at all possible. If it cannot be avoided then justification for selecting that route needs to be provided and efforts to minimize impacts must be developed.

The Service highly recommends crossing Leading Creek and the Little Kanawha River via Horizontal Directional Drill methods (HDD) to avoid impacts to federally listed mussels. If open trench crossings are proposed, the Service will need explanation as to why an HDD crossing of these streams is infeasible as outlined in an HDD feasibility analysis that should be completed by an engineer.

If the South Fork of Potts Creek cannot be avoided and HDD cannot be used on Leading Creek and the Little Kanawha River, then additional coordination with our office will be needed and mussel surveys will need to be completed for the proposed crossing locations.

The Service is also concerned that construction activities for the proposed project could result in erosion, surface run-off, or subsequent introduction of sediment and/or pollutants into Leading Creek, the Little Kanawha River, and the South Fork of Potts Creek, potentially impacting the mussels, their habitat, and fish-host species. Therefore, the Service recommends the following measures be taken to address potential erosion and sedimentation issues at these locations: (1) Construct and install sediment barriers, catch basins, or implement other available methods to ensure that erosion and sedimentation resulting from construction of this project are minimized to the extent practicable; (2) Implement additional Best Management Practices to avoid any indirect impacts to the mussels downstream of the proposed project. These include minimizing vegetation-clearing, mulching and seeding disturbed areas immediately after completing each incremental stage of construction or within one day of a stop in operations, and revegetating any disturbed areas with native, non-invasive plant species; (3) Immediately notify this office if any deviations from the submitted project plans are anticipated, or if any significant erosion-control or sedimentation problems occur during construction of the project.

### **Plants**

Potentially suitable habitat for running buffalo clover occurs within the proposed project alignment in Fayette, Greenbrier and Webster counties. Running buffalo clover occurs in mesic habitats of partial to filtered sunlight, where there is a prolonged pattern of moderate periodic disturbance, such as mowing, trampling, or grazing. It is most often found in regions underlain with limestone or other calcareous bedrock. In West Virginia, running buffalo clover seems to prefer old logging roads, off-road vehicle (ORV) trails, hawthorne thickets, grazed woodlands, jeep trails, railroad grades, game trails, and old fields succeeding to mesic woodlands. The Service recommends that surveys for running buffalo clover be completed along the proposed pipeline alignment prior to any construction.

Potentially suitable habitat for Virginia spiraea occurs along the Greenbrier, Gauley, Meadow River, Marsh Fork River, and the New River. Virginia spiraea is found along scoured banks of high gradient streams or on meander scrolls, point bars, natural levees, and braided features of lower stream reaches. We recommend that surveys for Virginia spiraea be conducted where the proposed alignment crosses the Greenbrier, Gauley, and Meadow Rivers.

Populations of the small whorled pogonia are known to occur in Greenbrier County. This species prefers to grow in upland mixed deciduous forest containing little to no understory clutter. We recommend that surveys for small whorled pogonia be completed in areas of Greenbrier County where suitable habitat is present.

Potentially suitable habitat for shale barren rock cress occurs in Greenbrier County. This plant occurs only in West Virginia and Virginia and is found on mid-Appalachian shale barrens of the Ridge and Valley Province of the Appalachian Mountains. The Service recommends that surveys for small whorled pogonia be completed in areas of Greenbrier County where suitable habitat is present.

Surveys for these species must be done during time periods when species are visible on the landscape, as listed in the attached Survey Periods for West Virginia's Federally Listed Plant Species. A list of approved Threatened and Endangered Plant Surveyors is also attached.

A survey report that summarizes the results of these surveys should be submitted to the Service for review and agreement before any federal permits are issued for this project and before a final decision on any alignment is made. If any federally listed species are found these populations should be avoided, and further coordination with this office will be required to develop measures that will avoid and minimize any potential impacts to these plants.

### **Bald and Golden Eagles**

Bald and golden eagles receive Federal protection under the BGEPA and the MBTA. They are listed by the Service as Birds of Conservation Concern in the Appalachian Mountains Bird Conservation Region, within which the proposed project occurs.

The BGEPA provides for the protection of bald eagles and golden eagles by prohibiting, except under certain specified conditions, the taking, possession, and commerce of such birds. BGEPA prohibits anyone, without a permit issued by the Secretary of the Interior, from taking bald and golden eagles, including their parts, nests, or eggs. The BGEPA defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb." BGEPA provides civil and criminal penalties for persons who violate the law or regulations.

Under 50 Code of Federal Regulations (CFR) § 22.3, disturb is defined as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available: 1) injury to an eagle; 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior." The BGEPA's definition of disturb also addresses effects associated with human induced alterations at the site of a previously used nest during a time when eagles are not present. Upon an eagle's return, if such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment, then this would constitute disturbance.

The Service recommends performing an assessment as to how this proposed project may affect bald and golden eagles. Although there are no known nests within 10 miles of the proposed right-of-way, additional surveys will need to be completed for bald eagles, which have been sighted more frequently in the area in recent years and are known to nest and migrate through West Virginia. Based on personal communications with Dr. Todd Katzner of West Virginia University, golden eagles are known to use the area for migration and winter habitat. Dr. Katzner and his team have tracked eagles through this area with radio telemetry. The results of these surveys will

Ms. Valerie Clarkston  
April 23, 2015

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assist us in developing recommendations to avoid and minimize, to the extent practicable, effects to bald and golden eagles. Our goal is to work with project proponents to develop measures which avoid the need for eagle permits.

The Service recommends evaluating the project area for potential impacts to eagle habitat (i.e., bald eagle nests, bald and golden eagle roosts). If bald eagles are found during this assessment, please refer to the National Bald Eagle Management Guidelines which can be viewed at the following link:

<http://www.fws.gov/northeast/ecologicalservices/pdf/NationalBaldEagleManagementGuidelines.pdf>

### **Migratory Birds**

The MBTA implements protection of all native migratory game and non-game birds with exceptions for the control of species that cause damage to agricultural or other interests. According to 50 CFR § 10.12, a migratory bird means any bird, whatever its origin and whether or not raised in captivity, which belongs to a species listed in the Service's regulations, or which is a mutation or a hybrid of any such species, including any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof. In total, 836 bird species are protected by the MBTA. For a complete list of birds protected by the MBTA visit this link

<http://www.fws.gov/migratorybirds/regulationspolicies/mbta/MBTANDX.HTML> .

The MBTA prohibits the take of any migratory bird, part, nest, egg or product. Take, as defined in the MBTA, includes by any means or in any manner any attempt at hunting, pursuing, wounding, killing, possessing, or transporting any migratory bird, nest, egg, or part thereof.

The MBTA does not explicitly include provisions for permits to authorize incidental take of migratory birds. While it is not possible to absolve individuals or companies from MBTA or the BGEPA liability, the Service's Office of Law Enforcement focuses its resources on investigating and prosecuting those who take migratory birds without identifying and implementing reasonable and effective measures to avoid take. The Service will regard a company's coordination and communication with the Service, as appropriate means of identifying and implementing reasonable and effective measures to avoid the take of species protected under the MBTA and BGEPA.

As such, 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 risks 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. We recommend minimization of land and vegetation disturbance during project design and construction and that all new activities be constrained to previously disturbed areas wherever possible (e.g., road and utility line rights-of-way, agricultural fields, previously mined areas, etc.).

Ms. Valerie Clarkston  
April 23, 2015

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We offer the following additional recommendations to avoid and minimize impacts to migratory birds within and around the project area:

1. Due to the difficulty in assessing the entire project site for all bird nests, we recommend that the clearing of natural or semi-natural habitats (e.g., forests, woodlots, reverting fields, fencerows, shrubby areas) be carried out between September 1 and March 31, which is outside the nesting season for most native bird species. Without undertaking specific analysis of breeding species and their respective nesting seasons on the project site, implementation of this seasonal restriction will avoid direct take of most breeding birds, their nests, and their young (*i.e.*, eggs, hatchlings).
2. To conserve area-sensitive species, avoid fragmenting large, contiguous tracts of wildlife habitat, especially if habitat cannot be fully restored after construction. Maintain contiguous habitat corridors to facilitate dispersal. Where practicable, concentrate construction activities, infrastructure, and man-made structures (e.g., roads, parking lots, staging areas) on lands already altered or cultivated, and away from areas of intact and healthy native habitats. If not convenient, site construction activities and structures in fragmented or degraded habitats over relatively intact areas.
3. To reduce habitat fragmentation, co-locate roads, lay down areas, staging areas, and other infrastructure in or immediately adjacent to already-disturbed areas (e.g., existing roads, pipelines, agricultural fields). Where this is not possible, minimize roads and other infrastructure. To minimize habitat loss and fragmentation, cluster development features (e.g., lay down areas, staging areas, roads) where possible rather than distributing infrastructure broadly across the landscape.

### Summary

When the additional information regarding listed species as requested above is provided, the Service will be able to provide further information on our determination of effects to Service trust resources. If you have any questions regarding this letter, please contact Tiernan Lennon of my staff at (304) 636-6586, Ext. 12, or [tiernan\\_lennon@fws.gov](mailto:tiernan_lennon@fws.gov), or at the letterhead address.

Sincerely,



John E. Schmidt  
Field Supervisor

Ms. Valerie Clarkston  
April 23, 2015

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Enclosures

Phase I Cave/Mine Portal Survey Data Sheet

Draft Protocol for Assessing Abandoned Mines/Caves for Bat Use

T&E Plant Surveyors

Survey Periods for West Virginia's Federally Listed Plant Species



Ms. Valerie Clarkston  
April 23, 2015

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cc:

WVDNR –Janet Clayton

WVDNR – PJ Harmon

VAFO – Troy Andersen

FERC – [www.ferc.gov](http://www.ferc.gov)

Project File

Reader File

ES:WVFO:TLennon:skd:4/23/2015

Filename: P:\Finalized Correspondence\T&E Requests\2015\April\Mountain Valley  
Pipeline.doc

## Valerie Clarkston

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**From:** Lennon, Tiernan <tiernan\_lennon@fws.gov>  
**Sent:** Wednesday, April 29, 2015 7:29 AM  
**To:** Valerie Clarkston  
**Cc:** Paul Harmon; Neylon, Megan  
**Subject:** MVP Plant Surveys

Good Morning Valerie,

Has any information about this project been provided to the Wildlife Diversity Program, Natural Heritage Group Wildlife Resources Section of the WVDNR? Please make sure you are coordinating with PJ Harmon regarding the MVP project. He is the rare and endangered plant botanist for the WVDNR and he needs to be kept in the loop on this project. Please send him the MVP shapefiles, your plant survey study plans (when they are finalized), and any other pertinent information regarding plants. I've included his contact information below. Please cc me on any correspondence. Thanks!

-Tiernan

### Contact Info

Paul J. Harmon

Rare and Endangered Plant Botanist

Wildlife Diversity Program, Natural Heritage Group

Wildlife Resources Section

West Virginia Division of Natural Resources

[Paul.J.Harmon@wv.gov](mailto:Paul.J.Harmon@wv.gov)

304.637.0245 work

304.637.0250 fax

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[Tiernan Lennon](#)

Fish and Wildlife Biologist

West Virginia Field Office

U.S. Fish and Wildlife Service

694 Beverly Pike

Elkins, WV 26241

304-636-6586 Ext. 12

Fax: 304-636-7824

[Tiernan.Lennon@fws.gov](mailto:Tiernan.Lennon@fws.gov)



## TELEPHONE / PERSONAL CONVERSATION REPORT

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<b>PROJECT NAME:</b>	Mountain Valley Pipeline Project
<b>MVP TEAM CALLER:</b>	Valerie Clarkston
<b>CONVERSATION WITH:</b>	Tiernan Lennon
<b>AGENCY:</b>	USFWS Elkins Field Office
<b>EMAIL ADDRESS:</b>	<a href="mailto:Tiernan_Lennon@fws.gov">Tiernan_Lennon@fws.gov</a>
<b>PHONE NUMBER:</b>	304-636-6586
<b>SUBJECT:</b>	Eagle Surveys & NLEB
<b>DATE AND TIME:</b>	5/5/2015 at 3 PM

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### SUMMARY OF CONVERSATION:

Tiernan was returning Valerie's call regarding additional surveys for bald and golden eagles in WV. Tiernan indicated that additional surveys for eagles would not need to occur along the entire length of the Project in WV, but would need to be focused within eagle nest buffers recently developed by Liz Stout. Tiernan stated these buffers are not yet ready for release, but she expects them to be distributed to interested parties in the near future. Based on a physical map of these buffers and the counties crossed by MVP, Tiernan indicated surveys for eagle nests will likely be limited to Greenbrier, Summers, and Monroe counties – especially in areas the Projects intersects major river systems.

During the phone conversation, Tiernan forwarded Valerie the link to the USFWS Bald Eagle Management Guidelines and Conservation Measures (<http://www.fws.gov/northeast/ecologicalservices/eagleguidelines/constructionnesting.html>) and asked that these be used in the event that nests or eagles are documented within the Project area.

Since she had Tiernan on the line, Valerie asked how many NLEBs per mile USFWS is requiring to be radio-tagged and tracked. Tiernan indicated that the unofficial amount would be 2 bats for every 3 miles with preference given to females. Valerie asked if mist net KM blocks could be eliminated during the summer if they fall within 1.5 miles of a newly documented NLEB roost. Tiernan replied and said yes since the area within 1.5 miles of a roost would be considered known habitat, there would be no need to mist net. Instead, a detailed habitat assessment and subsequent conservation plan would need to be completed and submitted.

Contact Signature: \_\_\_\_\_



## TELEPHONE / PERSONAL CONVERSATION REPORT

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**PROJECT NAME:** Mountain Valley Pipeline Project  
**MVP TEAM CALLER:** Taina Pankiewicz  
**CONVERSATION WITH:** Tiernen Lennon  
**AGENCY:** USFWS  
**EMAIL ADDRESS:** Tiernan\_Lennon@fws.gov  
**PHONE NUMBER:** 304-636-6586 Ext. 12  
**SUBJECT:** Bat Study Plan  
**DATE AND TIME:** 15:45 h 2 June 2015

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### SUMMARY OF CONVERSATION:

Tiernan said she had reviewed the Study Plan and only had a few small revisions:

1. Be sure to refer to NLEB + Ibat buffers, not just Ibat buffers throughout
2. Address typo referencing 2014 Guidelines to change to 2015
3. Be sure to refer to “endangered bat conservation bat plan” instead of “Ibat conservation plan”
4. WV clearing restriction window is 15 Nov to 31 March
5. If a roost is not found for a captured NLEB, the clearing buffer is 3 miles

Contact Signature: \_\_\_\_\_

## Taina Pankiewicz

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**From:** Taina Pankiewicz  
**Sent:** Tuesday, June 02, 2015 4:04 PM  
**To:** Tiernan\_Lennon@fws.gov  
**Cc:** Neylon, Megan (MNeylon@eqt.com); Valerie Clarkston  
**Subject:** Re-revised Bat Study Plan

Hey Tiernan,

Thank you for the document review and the call. A document containing the 4 revisions we discussed can be downloaded here:

<https://www.dropbox.com/s/yht9gm489czpiy3/593%20MVP%20WEST%20VIRGINIA%20ONLY%20Bat%20Study%20Plan%20Revised%202%20June%202015%20Complete.pdf?dl=0>

pass is 20esi15

If you need anything else at all to issue us site-specific authorization to begin field surveys, please do not hesitate to reach out to me directly.

Thank you!

Taina



**Taina Pankiewicz**

President, COO

Environmental Solutions & Innovations, Inc.  
4525 Este Avenue | Cincinnati, OH 45232 | USA  
**office:** 513.451.1777 **direct:** 513.591.4311  
**fax:** 513.451.3321 **cell:** 513.910.1676  
[tpankiewicz@envsi.com](mailto:tpankiewicz@envsi.com) | [www](http://www)



United States Department of the Interior  
FISH AND WILDLIFE SERVICE



West Virginia Field Office  
694 Beverly Pike  
Elkins, West Virginia 26241

**Concurrence Form for Myotis Bat Study Plans**

Contact Name: **Taina Pankiewicz**

Email Address or Fax Number: **TPankiewicz@envsi.com**

Project: **Mountain Valley Pipeline Project in Braxton, Doddridge, Fayette, Greenbrier, Harrison, Lewis, Monroe, Nicholas, Summers, Upshur, Webster, and Wetzel Counties, West Virginia**

The U.S. Fish and Wildlife Service has reviewed the **revised** study plan you submitted on **June 2, 2015** and we concur with the proposed survey methods. Surveys will be conducted in accordance with the protocol outlined in the current Range-wide Indiana Bat Summer Survey Guidelines. These Guidelines are acceptable to address the endangered Indiana bat (*Myotis sodalis*) and the threatened northern long-eared bat (*M. septentrionalis*).

Mist net surveys will be conducted. You propose sampling at **296** net sites for activities proposed within **349 kilometers** of potential bat habitat. This survey would have a total effort of **1776** net nights.

If any Indiana bats or northern long-eared bats are detected or captured during this survey, we recommend that you conduct additional surveys including mist-netting (when acoustic surveys were conducted), radio-tracking, roost tree identification, and emergence counts. This additional information will assist the Service and your client(s) in any consultations conducted under section 7 of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U. S. C. 1531 *et seq.*). Additional surveys are also recommended if other federally endangered or proposed endangered bats are located.

We request that the following be provided in the final survey reports:

- 1) Name, permit number, and location (latitude, longitude) of the proposed project;
- 2) A map with the project boundary and net/detector sites indicated;
- 3) A description of the survey effort, including number of detectors/nets used at each site, distance between sites, and selection of sites;
- 4) Color photos of the sites;
- 5) Copies of field data sheets;
- 6) Any additional information that may be relevant, such as weather and habitat conditions; and
- 7) A description of whether any potential bat hibernacula (caves/abandoned mine portals) may be present on site, and a summary of any surveys planned or conducted.

Reports may be submitted on CD. Please be aware that mist net survey activities require a valid West Virginia Scientific Collectors Permit, which can be acquired from the West Virginia Division of Natural Resources, Elkins Operation Center, Ward Road, Elkins, West Virginia 26241 (contact Barbara Sargent at 304-637-0245). Please provide a copy of your valid permit with your final report.

All federally listed species captures must be reported to the U.S. Fish and Wildlife Service, West Virginia Field Office, within 24 hours. If you have questions regarding this finding or report requirements, please contact Tiernan Lennon at (304) 636-6586 ext. 12 or at the letterhead address.

Tiernan Lennon Date: 6/3/15  
Biologist

John E. Schmidt Date: 6/4/15  
John E. Schmidt, Field Supervisor

## Daniel Judy

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**From:** Daniel Judy  
**Sent:** Wednesday, June 17, 2015 1:00 PM  
**To:** Tiernan Lennon (tiernan\_lennon@fws.gov); Sumalee Hoskin (sumalee\_hoskin@fws.gov);  
ernie.aschenbach@dgif.virginia.gov; Barbara Sargent (barbara.d.sargent@wv.gov);  
'projectreview@dgif.virginia.gov'  
**Cc:** Taina Pankiewicz; Valerie Clarkston; 'MNeylon@eqt.com'; Sparks, Sean  
**Subject:** Mountain Valley Pipeline: Myotis septentrionalis capture report  
**Attachments:** ESI\_PN593\_Bat\_Capture\_Reporting\_Table\_20150616.xlsx

Good Afternoon –

As required, please find attached a spreadsheet outlining capture information for three (3) northern long-eared bats from survey efforts last night. Two pregnant NLEB were captured in Harrison County, West Virginia and one lactating NLEB was captured in Montgomery County, Virginia. A radio-transmitter was only attached to the lactating NLEB.

Please contact us if you have any questions or require additional information.

Thank you,



**Daniel J. Judy**

Southeast Regional Manager

Environmental Solutions & Innovations, Inc.  
2250 Lucien Way, Suite 302 | Maitland, FL 32751  
**office:** 321.972.3958 | **direct:** 513.591.4339  
**fax:** 321.972.3959 | **cell:** 407.269.7492  
[djudy@envsi.com](mailto:djudy@envsi.com) | [www.envsi.com](http://www.envsi.com)



## Daniel Judy

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**From:** Daniel Judy  
**Sent:** Monday, June 22, 2015 1:14 PM  
**To:** Tiernan Lennon (tiernan\_lennon@fws.gov); Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W; 'barbara\_douglas@fws.gov'  
**Cc:** Taina Pankiewicz; Valerie Clarkston; 'Neylon, Megan'; Sparks, Sean  
**Subject:** Mountain Valley Pipeline: Myotis septentrionalis capture report from 21 June 2015  
**Attachments:** MVP Listed Bat Capture Report 21 June 2015.xlsx

Good Afternoon,

As required, please find attached a spreadsheet outlining capture information for one (1) northern long-eared bat from survey efforts last night. This non-reproductive female was captured in Monroe County, West Virginia (near the Summers/Monroe county line). A radio-transmitter was attached.

Please contact us if you have any questions or require additional information.

Thank you,



**Daniel J. Judy**

Southeast Regional Manager

Environmental Solutions & Innovations, Inc.  
2250 Lucien Way, Suite 302 | Maitland, FL 32751  
**office:** 321.972.3958 | **direct:** 513.591.4339  
**fax:** 321.972.3959 | **cell:** 407.269.7492  
[djudy@envsi.com](mailto:djudy@envsi.com) | [www.envsi.com](http://www.envsi.com)

## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Tuesday, June 23, 2015 8:34 AM  
**To:** Tiernan Lennon (tiernan\_lennon@fws.gov); 'barbara\_douglas@fws.gov'; Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** Taina Pankiewicz; Valerie Clarkston; 'Neylon, Megan'; Sparks, Sean  
**Subject:** Mountain Valley Pipeline: Myotis septentrionalis capture report from 22 June 2015  
**Attachments:** MVP Listed Bat Capture Report 22 June 2015.xlsx

Good Morning,

Please find attached a spreadsheet outlining capture information for one (1) northern long-eared bat from survey efforts last night. This non-reproductive male was captured in Summers County, West Virginia (approximately 3 ½ miles west of the Summers/Monroe county line). A radio-transmitter was attached.

Please contact us if you have any questions or require additional information.

Thank you,



**Daniel J. Judy**

Southeast Regional Manager

Environmental Solutions & Innovations, Inc.  
2250 Lucien Way, Suite 302 | Maitland, FL 32751  
**office:** 321.972.3958 | **direct:** 513.591.4339  
**fax:** 321.972.3959 | **cell:** 407.269.7492  
[djudy@envsi.com](mailto:djudy@envsi.com) | [www.envsi.com](http://www.envsi.com)

## Taina Pankiewicz

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**From:** Lennon, Tiernan <tiernan\_lennon@fws.gov>  
**Sent:** Monday, June 29, 2015 4:33 PM  
**To:** Taina Pankiewicz  
**Cc:** Barbara Douglas; Paul Harmon  
**Subject:** Re: FW: MVP Plant Surveys

Hey Taina,

I've reviewed the MVP plant survey study plan and it looks good to me. The only comment I have is that for Virginia spiraea you should also be surveying areas that cross the New River and the Marsh Fork River in addition to the Greenbrier, Gauley, and Meadow Rivers. With this minor update you have the Service's permission to conduct plant surveys in WV.

On Mon, Jun 29, 2015 at 3:58 PM, Taina Pankiewicz <[TPankiewicz@envsi.com](mailto:TPankiewicz@envsi.com)> wrote:

Hey ladies,

So far, in regards to our plant survey Study Plan for MVP, we have received responses from VDGIF/VADCR and VA USFWS but nothing "official" from WVDNR or WV USFWS. Our Study Plan does reflect an effort to meet all requests made by Liz to us regarding plant surveys in WV. However, those discussions were somewhat limited and early in our effort so we wanted to remain cautious and thus submitted the plan for formal review. I know you all are busy and I'm not trying to place undue heat on you; at the same time, our field survey crew is moving off of JNF lands and onto private lands and I want to extend one more opportunity for you all to give us feedback on our proposed survey areas; otherwise we will proceed as proposed with the understanding that it meets your needs.

Thanks!

Taina

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**From:** Harmon, Paul J [mailto:[Paul.J.Harmon@wv.gov](mailto:Paul.J.Harmon@wv.gov)]  
**Sent:** Tuesday, June 16, 2015 3:17 PM  
**To:** Taina Pankiewicz

**Cc:** Warner, Scott A; [Tiernan\\_Lennon@fws.gov](mailto:Tiernan_Lennon@fws.gov); Barbara Douglas ([Barbara\\_Douglas@fws.gov](mailto:Barbara_Douglas@fws.gov)); Daniel Judy  
**Subject:** RE: MVP Plant Surveys

Taina,

I received the document you sent express UPS. Because of still other responsibilities, and because I have worked way more than the number of hours for which I can get paid, I will only be working in the afternoons most of this week. I cannot look at the document today, as I have other more pressing responsibilities to attend to today.

I spoke with Barbara Douglas and Tiernan Lennon of the USFWS who assured me that they did not expect me to provide input to you or your crew before you can feel justified to proceed with your projects. I appreciate the opportunity to discuss T&E plant species in WV, and I recognized this is a huge project with great potential impact to many habitats that may be suitable for federally listed T&E plants, and I appreciate your passionate concern to do a good job. I have passed some major milestones/deadlines in my work load, and I'll try my best to look the document and the shape files over. However, please know that if you need to proceed with your field work, don't wait for me. According to Tiernan and Barb, they are having you send the documents to me so that IF the target species are seen, I'll know what and where the project is about once you contact Barb or I about any new finds.

I don't mean to imply that I don't care. I am just very overwhelmed, exhausted, and have other things that fall into the category of First things first that must happen before I can review your project.

If you need to move forward immediately, you may need to consult with Tiernan and Barb of the USFWS WV FO to seek their input and move on appropriately.

I'll do my best to get back to you later this week.

PJ

Paul J. Harmon

Rare and Endangered Plant Botanist

Wildlife Diversity Program, Natural Heritage Group

Wildlife Resources Section

West Virginia Division of Natural Resources

[Paul.J.Harmon@wv.gov](mailto:Paul.J.Harmon@wv.gov)

304.637.0245 work

304.637.0250 fax

*Gathering And Sharing Information About West Virginia's*

*Natural Diversity For Its Conservation*

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**From:** Taina Pankiewicz [<mailto:TPankiewicz@envsi.com>]

**Sent:** Monday, 15 June, 2015 4:02 PM

**To:** Harmon, Paul J

**Cc:** Warner, Scott A; [Tiernan\\_Lennon@fws.gov](mailto:Tiernan_Lennon@fws.gov); Barbara Douglas ([Barbara\\_Douglas@fws.gov](mailto:Barbara_Douglas@fws.gov)); Daniel Judy

**Subject:** RE: MVP Plant Surveys

Hi PJ,

We are still awaiting your response. We are heading to the field this week for surveys.

Thanks!

Taina

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**From:** Taina Pankiewicz

**Sent:** Thursday, June 04, 2015 10:48 PM

**To:** 'Harmon, Paul J'

**Cc:** Warner, Scott A; [Tiernan\\_Lennon@fws.gov](mailto:Tiernan_Lennon@fws.gov); Valerie Clarkston; Barbara Douglas ([Barbara\\_Douglas@fws.gov](mailto:Barbara_Douglas@fws.gov))

**Subject:** RE: MVP Plant Surveys

Hi PJ,

It is good to hear from you. I know that your organization generally carries a hefty load given your staffing and appreciate your time and input. A hardcopy of our Study Plan to survey for threatened and endangered plants should have landed on your desk today (via UPS overnight mail). We would be very grateful if you could review that, in connection with the shape files that Val previously sent, and provide us comments back by next Tuesday.

Thank you,

Taina

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**From:** Harmon, Paul J [<mailto:Paul.J.Harmon@wv.gov>]  
**Sent:** Thursday, June 04, 2015 2:58 PM  
**To:** Taina Pankiewicz  
**Cc:** Warner, Scott A; [Tiernan\\_Lennon@fws.gov](mailto:Tiernan_Lennon@fws.gov); Valerie Clarkston; Barbara Douglas ([Barbara\\_Douglas@fws.gov](mailto:Barbara_Douglas@fws.gov))  
**Subject:** RE: MVP Plant Surveys

Dear Ms. Pankiewicz,

Due to an extremely heavy, unusual work load, I have not been in a position to respond to Ms. Clarkston's query regarding the potential of impact of the MVP project to WV potential habitat of federally listed T & E plant species. I have spoken with Tiernan Lennon and Barbara Douglas of the US FWS, WV FO regarding what their expectations from me may have been, and I have projected the shape files provided by Ms. Clarkston for the first time today. Due to my schedule, I will not be in a position to review the path of the ROW of the MVP project until next Tuesday at the earliest, and may be able to supply some helpful comments after that.

However, if you and your company need to move forward on developing your botanical study plan, you may wish to proceed without my input, coordinating with Ms. Lennon.

I'm sorry for the delayed response. We do not have other botanical staff within our program, other than me, to respond to such queries, and numerous other projects supported by the US FWS WV FO, and other federal agencies, including the State Wildlife Action Plan (SWAP) had to take higher priority. I'm sorry for any inconvenience you or your company experienced.

Should you have further questions, you may speak with my supervisor, Asst. Chief Scott Warner, or Barbara Douglas of the US FWS, WV FO.

Sincerely,

Paul J. Harmon

Rare and Endangered Plant Botanist

Wildlife Diversity Program, Natural Heritage Group

Wildlife Resources Section

West Virginia Division of Natural Resources

[Paul.J.Harmon@wv.gov](mailto:Paul.J.Harmon@wv.gov)

304.637.0245 work

304.637.0250 fax

*Gathering And Sharing Information About West Virginia's*

*Natural Diversity For Its Conservation*

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**From:** Taina Pankiewicz [<mailto:TPankiewicz@envsi.com>]

**Sent:** Tuesday, 02 June, 2015 5:15 PM

**To:** Harmon, Paul J

**Cc:** Warner, Scott A

**Subject:** RE: MVP Plant Surveys

**Importance:** High

Hi PJ,

By the end of the day tomorrow, we are planning to submit a Study Plan for the plant surveys on this project. If you have any input you would like to add to the process, can you please provide that now?

Thank you!

T

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**From:** Taina Pankiewicz

**Sent:** Wednesday, May 20, 2015 4:56 PM

**To:** Harmon, Paul J  
**Cc:** Sargent, Barbara D  
**Subject:** RE: MVP Plant Surveys

Hi PJ,

We really want/need to get our Study Plant for plant surveys submitted on this project. We are awaiting your response back to determine if you have additional survey requests that we should incorporate. I know you are very busy; do have any idea when we might hear back from you?

Taina



**Taina Pankiewicz**

President, COO

Environmental Solutions & Innovations, Inc.

4525 Este Avenue | Cincinnati, OH 45232 | USA

**office:** 513.451.1777 **direct:** 513.591.4311

**fax:** 513.451.3321 **cell:** 513.910.1676

[tpankiewicz@envsi.com](mailto:tpankiewicz@envsi.com) | [www](http://www.envsi.com)

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**From:** Valerie Clarkston  
**Sent:** Friday, May 08, 2015 10:42 AM  
**To:** Harmon, Paul J; Lennon, Tiernan  
**Cc:** Neylon, Megan; Daniel Judy; Taina Pankiewicz; Sargent, Barbara D  
**Subject:** RE: MVP Plant Surveys

Hello PJ,



Sorry to hear about your computer issues! I hope it gets straightened out.

Thank you for sending us information regarding the training workshops. We will consider sending some of our personnel.

I have attached current Project shapefiles for you to use when advising USFWS. To my knowledge, similar shapefiles were sent to the Elkins Field Office a while back.

The following is a brief description of the Project and construction methods:

### **Project Description**

Mountain Valley Pipeline, LLC (MVP), a joint venture between affiliates of EQT Corporation, NextEra Energy, Inc., WGL Holdings, Inc., and Vega Energy Partners, Ltd., plans to construct the Mountain Valley Pipeline (Project), a 42-inch diameter natural gas pipeline, to allow producers and end-users a direct route to transport new gas supplies to meet the growing need for natural gas in the Appalachian, Mid-Atlantic, and southeastern United States. The Project extends from the existing Equitrans transmission system near Mobley in Wetzel County, West Virginia, to Transcontinental Gas Pipeline Company's Zone 5 compressor station 165 in Pittsylvania County, Virginia (Appendix A Figure 1). In West Virginia, the pipeline is expected to cross Braxton, Doddridge, Fayette, Greenbrier, Harrison, Lewis, Monroe, Nicholas, Summers, Webster, and Wetzel counties. In Virginia, the proposed pipeline is expected to cross Franklin, Giles, Montgomery, Pittsylvania, and Roanoke counties. Alternative routes have been proposed for the Mountain Valley Pipeline. One alternative will cross Craig County, Virginia.

The Project requires approximately 217,200 horsepower of compression at approximately four compressor stations along the final alignment, in addition to measurement, regulation, and other ancillary facilities required for safe operation of the pipeline. There are currently 30 proposed laydown yards associated with Project, providing pipe storage used for local construction spreads of the Project. These yards are generally in areas that are already cleared, so forested impacts are not anticipated for most yards. To facilitate construction and maintenance of the pipeline and ancillary facilities, 370 access roads are proposed to be constructed or improved.

### **Pipeline Right-of-Way**

- 125-foot construction right-of-way
- 75-foot permanent right-of-way

- In wetlands, construction right-of-way will be reduced to 85 feet

The pipeline right-of-way and temporary workspaces in non-paved areas will be cleared of vegetation prior to construction to provide safe working conditions. The construction limits of disturbance (LOD), pipeline centerline, and any additional temporary workspace (ATWS) will be identified and staked by the civil survey crew prior to the start of clearing operations. Timber from 4 inches to 8 inches in diameter at the butt end will be cut into usable lengths and stacked adjacent to the right-of-way in accordance with landowner preferences. Brush and slash will be burned, stacked, or chipped. All stumps will be disposed of to the satisfaction of the property owner and/or company representative in accordance with applicable law including, but not limited to, any anti-pollution law, rule or regulation. When feasible, vegetation will be cut to ground level only, leaving the root systems intact. Where needed for erosion control, the FERC's May 2013 version of the Upland Erosion Control, Revegetation, and Maintenance Plan (Plan) will be implemented along the construction right-of-way and best management practices (BMPs) outlined in the FERC's Plan will be properly maintained throughout construction. BMPs will remain in place until permanent erosion controls are installed or restoration is completed.

Routine maintenance of the right-of-way is required to allow continued access for routine pipeline patrols, maintaining access in the event of emergency repairs, and visibility of aerial patrols. Following construction, the entire right-of-way will be restored and a 75-foot wide permanent right-of-way will be maintained by MVP for the pipeline. The areas disturbed by construction will be restored to their original grades condition and use, to the greatest extent practicable. Restoration will be considered successful if the right-of-way surface condition is similar to adjacent undisturbed lands, construction debris is removed, revegetation is successful, and proper drainage has been restored.

In upland areas, trees or deep-rooted shrubs will be removed from the construction right-of-way and will not be permitted to grow within the 75-foot permanent right-of-way. Depending on the time of year, a seasonal variety, such as ryegrass, may be broadcast or drilled until a more permanent cover can be established. As such, the maintained permanent right-of-way will be subjected to mowing as needed and will result in permanent conversion of some areas of existing upland forested vegetation to herbaceous or scrub vegetation. Within wetlands or adjacent waterbodies, MVP will maintain vegetation in a 10-foot corridor centered over the pipeline by mowing. Maintenance of vegetation is not expected to be required in agricultural or grazing areas.

### **Aboveground Facilities**

Excavation will be performed as necessary to accommodate the new reinforced concrete foundations for the new compressors, launching and receiving facilities, metering equipment, and buildings. Subsurface friction piles may be required to support the foundations, depending upon the bearing capacity of the existing soils and the equipment loads. Forms will be set, rebar installed, and the concrete poured and cured in accordance with applicable industry standards. Concrete pours will be randomly sampled to verify compliance with minimum strength requirements. Backfill will be compacted in place, and excess soil will be used elsewhere or distributed around the site to improve grade.

Impacts to vegetation within additional temporary work spaces and aboveground facilities will be similar to those described above for the pipeline right-of-way. Temporary workspaces used during construction (other than gravel or paved areas) will be seeded and allowed to revegetate and will not require further maintenance or encounter disturbance associated with the operation of the pipeline. However, aboveground facilities will be fenced and converted to industrial use.

### **Access Roads**

Previously existing access roads that were modified and used during construction will be returned to original or better condition upon completion of the pipeline facilities installation. New access roads constructed specifically for the Project installation will be removed, the surface graded to original contours, and the land restored to its original use, unless otherwise requested by the landowner, or unless the roads will be required for permanent access to the right-of-way during pipeline operations, and in accordance with any permit requirements. Temporary erosion control measures will be removed upon final stabilization and installation of permanent erosion control measures.

### **Laydown Yards**

MVP has selected several locations for contractor yards and staging/storage areas. To the maximum extent practical, MVP has selected these areas in open land, industrial, or commercial land in order avoid wetlands, forest, and other sensitive habitats. Additional maintenance may be required to remove brush and other herbaceous vegetation for safe passage of equipment and to prepare the work surface for proper storage of pipe and other construction materials. Vegetative impacts will be minimal due to the existing conditions at these locations. Upon completion of Project construction, all temporary equipment and facilities (e.g., trailers, sheds, latrines, pipe racks, fencing, and gates) will be removed from the pipe storage and contractor yards. Unless otherwise requested by the landowner, each site will be graded to original contours, and the land restored to its original use. The site will be re-vegetated, any permanent erosion control measures will be installed, and temporary erosion control measures will be removed.

### **Waterbody Crossings**

Construction methods at waterbody crossings will vary with the characteristics of the waterbody encountered and will be performed consistent with permit conditions outlined in the regulatory approvals. Most intermediate waterbodies (greater than 10 feet wide and less than or equal to 100 feet wide) and minor channels (less than 10 feet wide at water's edge) will be crossed by the open-cut/conventional lay or dry ditch crossing methods. Construction across waterbodies will be performed to minimize the time that ditches for pipeline crossing of flowing streams and rivers are left open. Pipe will be installed to provide a minimum of four feet of cover from the waterbody bottom to the top of the pipeline, except in consolidated rock, where a minimum of two feet of cover will be required.

Avoidance of streambed disturbance can be obtained by horizontal directional drilling (HDD) and horizontal bore methods and may be used by MVP to avoid direct impacts to certain sensitive waterbodies. At the time of this letter, it is unknown how many waterbody crossings will be completed by HDD or horizontal boring. HDD allows trenchless construction by drilling a borehole well below the depth of a conventional pipeline lay and pulling the pipeline through the pre-drilled borehole.

The open-cut crossing method is typically the quickest crossing method, thereby minimizing the time of active in-stream disturbance. However, there is a potential for direct impacts resulting from the open-cut construction technique, including increased sedimentation for a short period, substrate removal or alteration, and habitat alteration due to the removal or disturbance of streamside vegetation and other types of cover for fish. If construction is conducted during a low-flow period, sediment-related impacts will be more localized. These impacts are generally temporary, lasting only during the period of active in-stream construction.

### **Blasting**

At this time the extent of blasting for the Project is unknown. MVP will try to minimize the amount of blasting required to extent practicable. Where unrippable subsurface rock is encountered, blasting for ditch excavation may be necessary. In these areas, MVP is committed to taking measures to prevent damage to underground structures (e.g., cables, conduits, and pipelines) or to springs, water wells, or other water sources. Blasting mats or padding will be used as necessary to prevent the scattering of loose rock. All blasting will be conducted during daylight hours and will not begin until occupants of nearby buildings, stores, residences, places of business, and farms have been notified. Where competent sandstone bedrock occurs in the stream bed, blasting may be used to reduce bedrock so that the trench can be excavated.

I will be heading into the field beginning 14 May and will not return to the office until late August. Please be sure to coordinate with Dan Judy or Taina Pankiewicz in my absence.

We have survey study plans for species identified by USFWS (Elkins and Gloucester Field Offices) and Virginia Department of Conservation & Recreation, Division of Natural Heritage under internal review. We will submit them for your review in the near future.

If you should need any further information or clarification, please do not hesitate to contact us.

Have a good weekend.

Valerie

**Valerie Clarkston**

Scientist

*Environmental Solutions & Innovations, Inc.*

4525 Este Avenue

Cincinnati, OH 45232

Office 513.451.1777

Mobile 513.382.0925

---

**From:** Harmon, Paul J [<mailto:Paul.J.Harmon@wv.gov>]  
**Sent:** Thursday, May 07, 2015 8:05 AM  
**To:** Valerie Clarkston; Lennon, Tiernan  
**Cc:** Neylon, Megan; Daniel Judy; Taina Pankiewicz; Sargent, Barbara D  
**Subject:** RE: MVP Plant Surveys

Ms. Clarkston,

Thanks for copying the email. I'll need to get a shape file and details of the project to be able to advise US FWS, WV FO. Perhaps Barb Sargent has that.

Meanwhile, who need to be trained in the ID, survey of, and monitoring of running buffalo clover, or Virginia spiraea, you may wish to know about an up-coming pair of workshops:

Here's a little information. The real announcement will come later today from FWS.

I've been in a wild crisis with my computer for most of this week, right in the middle of many huge deadlines, including preparation of the workshops and announcements!

So I have not been able to get to emails, including your document.

Meanwhile ...

If you or any of your staff are interested in attending training workshops this month on RBC, small whorled pogonia, or Virginia spiraea, here's a little information. The real announcement will come later today from FWS.

The workshops, two of them, will be held ...

21 May, 9:00 am - ~3:00 PM (bring a lunch!) here at our office in the Elkins Operation Center We start inside with PowerPoint and specimens and discussions about running buffalo clover and small whorled pogonia; then we'll go to a nearby occurrence of RBC for the rest of the day until 3:00 PM

Following that, we will drive to Beckley, WV (3 hrs drive south) for all who want to be trained in Virginia spiraea, staying in the Holiday Inn Beckley, arriving to get a quick supper by 6:00 PM, and doing an indoor session in the hotel at 7:30 PM until about 9:00 PM on Virginia spiraea. The next morning, after breakfast, we will travel to three sites of Virginia spiraea, and I anticipate the field day will end around 3:00 PM, but I can't be certain simply because of travel time. The workshop will end when we get all things adequately covered, everyone "tested", and all questions answered.

I reserved a group of ten rooms (total thus far) under the name WV Division of Natural Resources at government rate, for the workshop, and we have a meeting room rented, too. If you wish to stay at the Holiday Inn in Beckley the night of the 21<sup>st</sup>, please call 304-252-2250, ask for access to the block of rooms under WV Division of Natural Resources on 21 May 2015 at the governmental rate (\$106.00 per night), and you will be able to independently make reservations for the room(s) you need.

I'm copying this to the FWS folks who are helping to prepare the announcement and the workshops, so they can share further information with you.

My computer does not have viruses, but there remains an issue that is likely the email server's generation. You may get periodic empty emails from me. They are not virus ridden according to our IT and OT people!

Let us know if you have questions,

PJ

Paul J. Harmon

Rare and Endangered Plant Botanist

Wildlife Diversity Program, Natural Heritage Group

Wildlife Resources Section

West Virginia Division of Natural Resources

[Paul.J.Harmon@wv.gov](mailto:Paul.J.Harmon@wv.gov)

304.637.0245 work

304.637.0250 fax

*Gathering And Sharing Information About West Virginia's*

*Natural Diversity For Its Conservation*

---

**From:** Valerie Clarkston [<mailto:VClarkston@envsi.com>]  
**Sent:** Thursday, 30 April, 2015 7:35 AM  
**To:** Lennon, Tiernan  
**Cc:** Harmon, Paul J; Neylon, Megan; Daniel Judy; Taina Pankiewicz  
**Subject:** RE: MVP Plant Surveys

Hi Tiernan,

We have been coordinating with Barb Sargent and Craig Stihler with the WVDNR up to this point, but will be sure to bring PJ Harmon up to speed with the Project. We have a Plant Study Plan for the Project in prep, and we will send it to you and PJ for review.

Barb provided comments regarding the Project earlier this month (see attached letter) in case you were not aware.

Thanks,

**Valerie Clarkston**

Scientist

*Environmental Solutions & Innovations, Inc.*

4525 Este Avenue

Cincinnati, OH 45232

Office 513.451.1777

Mobile 513.382.0925

**From:** Lennon, Tiernan [[mailto:tiernan\\_lennon@fws.gov](mailto:tiernan_lennon@fws.gov)]

**Sent:** Wednesday, April 29, 2015 7:29 AM

**To:** Valerie Clarkston

**Cc:** Paul Harmon; Neylon, Megan

**Subject:** MVP Plant Surveys

Good Morning Valerie,

Has any information about this project been provided to the Wildlife Diversity Program, Natural Heritage Group Wildlife Resources Section of the WVDNR? Please make sure you are coordinating with PJ Harmon regarding the MVP project. He is the rare and endangered plant botanist for the WVDNR and he needs to be kept in the loop on this project. Please send him the MVP shapefiles, your plant survey study plans (when they are finalized), and any other pertinent information regarding plants. I've included his contact information below. Please cc me on any correspondence. Thanks!

-Tiernan



## Contact Info

Paul J. Harmon

Rare and Endangered Plant Botanist

Wildlife Diversity Program, Natural Heritage Group

Wildlife Resources Section

West Virginia Division of Natural Resources

[Paul.J.Harmon@wv.gov](mailto:Paul.J.Harmon@wv.gov)

304.637.0245 work

304.637.0250 fax

--

[Tiernan Lennon](#)

Fish and Wildlife Biologist

West Virginia Field Office

U.S. Fish and Wildlife Service

694 Beverly Pike

Elkins, WV 26241

304-636-6586 Ext. 12

Fax: 304-636-7824

[Tiernan\\_Lennon@fws.gov](mailto:Tiernan_Lennon@fws.gov)

--

[Tiernan Lennon](#)

Fish and Wildlife Biologist  
West Virginia Field Office  
U.S. Fish and Wildlife Service  
694 Beverly Pike  
Elkins, WV 26241  
304-636-6586 Ext. 12  
Fax: 304-636-7824  
[Tiernan\\_Lennon@fws.gov](mailto:Tiernan_Lennon@fws.gov)

## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Monday, June 29, 2015 3:29 PM  
**To:** Tiernan Lennon (tiernan\_lennon@fws.gov); 'barbara\_douglas@fws.gov'; Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** Taina Pankiewicz; Valerie Clarkston; Sparks, Sean; 'Neylon, Megan'  
**Subject:** Mountain Valley Pipeline: Myotis septentrionalis capture report from 27-28 June 2015  
**Attachments:** Mountain Valley Pipeline NLEB Capture Report\_27-28June2015.xlsx

Good Afternoon,

Please find attached a spreadsheet outlining capture information for five (5) northern long-eared bats from weekend survey efforts. Radio-transmitters were attached to all five bats.

Please contact us if you have any questions or require additional information.

Thank you,



**Daniel J. Judy**

Southeast Regional Manager

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**fax:** 321.972.3959 | **cell:** 407.269.7492  
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## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Thursday, July 02, 2015 9:08 AM  
**To:** Tiernan Lennon (tiernan\_lennon@fws.gov); 'barbara\_douglas@fws.gov'; Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** Taina Pankiewicz; Valerie Clarkston; Sparks, Sean; 'Neylon, Megan'; Michael Bruening  
**Subject:** Mountain Valley Pipeline: Myotis septentrionalis capture report for 1 July 2015  
**Attachments:** Mountain Valley Pipeline\_NLEB Capture Report 1 July 2015.xlsx

Good Morning,

Please find attached a spreadsheet outlining capture information for one (1) northern long-eared bat from survey efforts on 1 July 2015. A radio-transmitter was attached to this bat.

Please contact us if you have any questions or require additional information.

Thank you,



**Daniel J. Judy**

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## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Monday, July 06, 2015 10:46 AM  
**To:** Tiernan Lennon (tiernan\_lennon@fws.gov); 'barbara\_douglas@fws.gov'; Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** Taina Pankiewicz; Valerie Clarkston; Sparks, Sean; 'Neylon, Megan'  
**Subject:** Mountain Valley Pipeline: Myotis septentrionalis capture report for 4 and 5 July 2015  
**Attachments:** Mountain Valley Pipeline NLEB Capture Report 4 July 2015.xlsx

Good Morning,

Please find attached a spreadsheet outlining capture information for four (4) northern long-eared bats from survey efforts on 4 and 5 July 2015. Radio-transmitters were attached to these bats.

Please contact us if you have any questions or require additional information.

Thank you,



**Daniel J. Judy**

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## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Monday, July 06, 2015 12:27 PM  
**To:** Tiernan Lennon (tiernan\_lennon@fws.gov); 'barbara\_douglas@fws.gov'; Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** Taina Pankiewicz; Valerie Clarkston; 'Neylon, Megan'; Sparks, Sean  
**Subject:** FW: Mountain Valley Pipeline: Myotis septentrionalis capture report for 4 and 5 July 2015  
**Attachments:** Mountain Valley Pipeline NLEB Capture Report 4 July 2015.xlsx

My apologies – 1 NLEB was accidently omitted from the capture report. It has been added to the table (row 9).

Again, sorry for the inconvenience.

Daniel J. Judy  
Environmental Solutions and Innovations  
407.269.7492

---

**From:** Daniel Judy  
**Sent:** Monday, July 06, 2015 10:46 AM  
**To:** Tiernan Lennon (tiernan\_lennon@fws.gov); 'barbara\_douglas@fws.gov'; Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** Taina Pankiewicz; Valerie Clarkston; Sparks, Sean; 'Neylon, Megan'  
**Subject:** Mountain Valley Pipeline: Myotis septentrionalis capture report for 4 and 5 July 2015

Good Morning,

Please find attached a spreadsheet outlining capture information for four (4) northern long-eared bats from survey efforts on 4 and 5 July 2015. Radio-transmitters were attached to these bats.

Please contact us if you have any questions or require additional information.

Thank you,



**Daniel J. Judy**

Southeast Regional Manager

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## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Monday, July 13, 2015 8:39 AM  
**To:** 'barbara\_douglas@fws.gov'; Tiernan Lennon (tiernan\_lennon@fws.gov); Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** 'Neylon, Megan'; Sparks, Sean; Taina Pankiewicz  
**Subject:** Mountain Valley Pipeline: Myotis septentrionalis capture report for 11 and 12 July 2015  
**Attachments:** MVP NLEB Capture Report 12 July 2015.xlsx

Good Morning,

Please find attached a spreadsheet outlining capture information for four (4) northern long-eared bats from survey efforts on 11 and 12 July 2015. Radio-transmitters were attached to these bats.

Please contact us if you have any questions or require additional information.

Thank you,



**Daniel J. Judy**

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United States Department of the Interior

FISH AND WILDLIFE SERVICE



West Virginia Field Office  
694 Beverly Pike  
Elkins, West Virginia 26241

**Concurrence Form for Freshwater Mussel Survey Plans**

Contact Name: Kyle McGill

Email Address or Fax Number: kmcgill@envsi.com

Project: Mountain Valley Pipeline, Braxton, Doddridge, Fayette, Greenbrier, Harrison, Lewis, Monroe, Nicholas, Summers, Webster, and Wetzel Counties, West Virginia

The U.S. Fish and Wildlife Service has reviewed the revised survey plan you submitted on May 20, 2015 and we concur with the proposed survey methods. You propose surveys on the Little Kanawha River within a stream reach that could contain federally endangered freshwater mussels.

Should any federally listed freshwater mussels be located during this survey, you should immediately contact this office to determine if additional survey efforts should be completed and further discuss avoidance and minimization measures that could be implemented. This additional information will assist the Service and your client(s) in any consultations conducted under section 7 of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U. S. C. 1531 *et seq.*). Please note that relocation of federally listed mussels is not authorized.

- May proceed with Phase II surveys  
 May not proceed with Phase II surveys (applicant did not provide adequate justification that alternative construction methods or locations are not feasible)

We request that the following be provided in the final survey reports:

- 1) Name, permit number, and location (latitude, longitude) of the proposed project;
- 2) A map with the project boundary and survey boundary indicated;
- 3) A description of the results of the survey effort, including the species of mussels located, the number of individuals of each species, and the location of any federally listed mussels;
- 4) The dates that the surveys were conducted, and a description of the habitat conditions found during the survey effort, including visibility, substrate types, water temperatures and depths;
- 5) Photographs of species located and the survey area;
- 6) Copies of field data sheets; and
- 7) Any additional information that may be relevant.

Please be aware that these survey activities require a valid West Virginia Scientific Collectors Permit, which can be acquired from the West Virginia Division of Natural Resources, Elkins Operation Center, Ward Road, Elkins, West Virginia 26241 (contact Barbara Sargent at 304-637-0245). Please provide a copy of your valid permit with your final report. **All federally listed species captured must be reported to the U.S. Fish and Wildlife Service, West Virginia Field Office, within 5 business days.** If you have questions regarding this finding or report requirements, please contact our office at (304) 636-6586 or at the letterhead address.

Tieman Lennow  
Biologist

Date: 7/9/15

John E. Schmidt  
John E. Schmidt, Field Supervisor

Date: 7/13/15



## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Tuesday, July 14, 2015 11:01 AM  
**To:** 'barbara\_douglas@fws.gov'; Tiernan Lennon (tiernan\_lennon@fws.gov); Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** Taina Pankiewicz; Valerie Clarkston; Sparks, Sean; 'Neylon, Megan'  
**Subject:** Mountain Valley Pipeline: Myotis septentrionalis capture report for 13 July 2015  
**Attachments:** MVP NLEB Capture Report 13 July 2015.xlsx

Good Morning,

Please find attached a spreadsheet outlining capture information for four (4) northern long-eared bats from survey efforts on 13 July 2015. Radio-transmitters were attached to three of these bats.

Please contact us if you have any questions or require additional information.

Thank you,



**Daniel J. Judy**

Southeast Regional Manager

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## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Sunday, July 19, 2015 9:58 AM  
**To:** 'barbara\_douglas@fws.gov'; Tiernan Lennon (tiernan\_lennon@fws.gov); Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** Taina Pankiewicz; Neylon, Megan; Sparks, Sean; Valerie Clarkston; Michael Bruening  
**Subject:** MVP: NLEB Capture Report for 17-18 July 2015  
**Attachments:** MVP NLEB Capture Report 17-18 July 2015.xlsx

**Follow Up Flag:** Follow up  
**Due By:** Monday, July 20, 2015 8:00 AM  
**Flag Status:** Completed

Good Morning All –

Hope everyone is having an enjoyable (and hopefully dry) weekend. Please find attached our NLEB capture report for 17-18 July. Three northern long-eared bats were captured and tagged during our Friday and Saturday night efforts.

Please feel free to reach out with any questions.

Thanks,



**Daniel J. Judy**

Southeast Regional Manager

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## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Monday, July 20, 2015 8:26 AM  
**To:** 'barbara\_douglas@fws.gov'; Tiernan Lennon (tiernan\_lennon@fws.gov); Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** Taina Pankiewicz; Valerie Clarkston; Neylon, Megan; Sparks, Sean; Michael Bruening  
**Subject:** MVP: NLEB Capture Report 19 July 2015  
**Attachments:** MVP NLEB Capture Report 19 July 2015.xlsx

Good Morning –

Please find attached a NLEB capture report for survey efforts on 19 July 2015. One adult male was captured and radio-tagged in Webster County.

Please let us know if you have any questions.

Thank you,



**Daniel J. Judy**

Southeast Regional Manager

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## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Tuesday, July 21, 2015 8:01 AM  
**To:** 'barbara\_douglas@fws.gov'; Tiernan Lennon (tiernan\_lennon@fws.gov); Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** Neylon, Megan; Sparks, Sean; Taina Pankiewicz; Valerie Clarkston; Michael Bruening  
**Subject:** MVP NLEB Capture Report 20 July 2015  
**Attachments:** MVP NLEB Capture Report 20 July 2015.xlsx

Good Morning,

Please find attached our NLEB capture report for MVP survey efforts on 20 July 2015. Seven (7) northern long-eared bats were captured last night in Webster and Greenbrier counties. Five of the NLEBs were captured at the same site in Webster County.

Please let me know if you have any questions.

Thanks,



**Daniel J. Judy**

Southeast Regional Manager

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## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Thursday, July 23, 2015 8:00 AM  
**To:** 'barbara\_douglas@fws.gov'; Tiernan Lennon (tiernan\_lennon@fws.gov); Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** 'Neylon, Megan'; Taina Pankiewicz; Sparks, Sean; Michael Bruening  
**Subject:** MVP: NLEB Capture Report 22 July 2015  
**Attachments:** MVP NLEB Capture Report 22 July 2015.xlsx

Good Morning –

Please find attached a captured report for one northern long-eared bat. This bat was captured last night in Webster County.

Please let me know if you have any questions.

Thanks,



**Daniel J. Judy**

Southeast Regional Manager

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## Daniel Judy

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**From:** Daniel Judy  
**Sent:** Saturday, July 25, 2015 11:19 AM  
**To:** 'barbara\_douglas@fws.gov'; Tiernan Lennon (tiernan\_lennon@fws.gov); Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** 'Neylon, Megan'; Sparks, Sean; Taina Pankiewicz; Valerie Clarkston  
**Subject:** MVP: NLEB Capture Report for 23-24 July 2015  
**Attachments:** MVP NLEB Capture Report 23-24 July 2015.xlsx

Good Morning,

Please find attached our NLEB capture report for 23-24 July 2015. Four NLEB were captured and tagged (2 each night).

Please let me know if you have any questions.

Thanks,



**Daniel J. Judy**

Southeast Regional Manager

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## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Monday, July 27, 2015 12:28 PM  
**To:** 'barbara\_douglas@fws.gov'; Tiernan Lennon (tiernan\_lennon@fws.gov); Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** 'Neylon, Megan'; Sparks, Sean; Taina Pankiewicz; Valerie Clarkston  
**Subject:** MVP: NLEB Capture Report for 25 July 2015  
**Attachments:** MVP NLEB Capture Report 25 July 2015.xlsx

Good Afternoon –

Please find attached the MVP NLEB capture report for 25 July 2015.

Please let me know if you have any questions.

Thanks,



**Daniel J. Judy**

Southeast Regional Manager

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## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Saturday, August 01, 2015 8:57 AM  
**To:** 'barbara\_douglas@fws.gov'; Tiernan Lennon (tiernan\_lennon@fws.gov); Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** 'Neylon, Megan'; Sparks, Sean; Taina Pankiewicz  
**Subject:** MVP NLEB Capture Report 30-31 July 2015  
**Attachments:** MVP NLEB Capture Report 30-31 July 2015.xlsx

Good Morning –

Please find attached a NLEB capture report for survey efforts on 30-31 July 2015. Please let me know if you have any questions.

Thanks,



**Daniel J. Judy**

Southeast Regional Manager

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## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Monday, August 03, 2015 12:18 PM  
**To:** 'barbara\_douglas@fws.gov'; Tiernan Lennon (tiernan\_lennon@fws.gov); Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** 'Neylon, Megan'; Sparks, Sean; Taina Pankiewicz; Valerie Clarkston  
**Subject:** MVP: NLEB Capture Report for 1 August 2015  
**Attachments:** MVP NLEB Capture Report 1 August 2015.xlsx

Good Afternoon –

Please find attached the NLEB capture report for survey efforts on 1 August 2015. Please let me know if you have any questions.

Thanks,



**Daniel J. Judy**

Southeast Regional Manager

Environmental Solutions & Innovations, Inc.  
2250 Lucien Way, Suite 302 | Maitland, FL 32751  
**office:** 321.972.3958 | **direct:** 513.591.4339  
**fax:** 321.972.3959 | **cell:** 407.269.7492  
[djudy@envsi.com](mailto:djudy@envsi.com) | [www.envsi.com](http://www.envsi.com)

## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Monday, August 03, 2015 12:18 PM  
**To:** 'barbara\_douglas@fws.gov'; Tiernan Lennon (tiernan\_lennon@fws.gov); Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** 'Neylon, Megan'; Sparks, Sean; Taina Pankiewicz; Valerie Clarkston  
**Subject:** MVP: NLEB Capture Report for 1 August 2015  
**Attachments:** MVP NLEB Capture Report 1 August 2015.xlsx

Good Afternoon –

Please find attached the NLEB capture report for survey efforts on 1 August 2015. Please let me know if you have any questions.

Thanks,



**Daniel J. Judy**

Southeast Regional Manager

Environmental Solutions & Innovations, Inc.  
2250 Lucien Way, Suite 302 | Maitland, FL 32751  
**office:** 321.972.3958 | **direct:** 513.591.4339  
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## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Tuesday, August 04, 2015 7:28 AM  
**To:** 'barbara\_douglas@fws.gov'; Tiernan Lennon (tiernan\_lennon@fws.gov); Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** 'Neylon, Megan'; Sparks, Sean; Taina Pankiewicz; Valerie Clarkston  
**Subject:** MVP: NLEB Capture Report for 3 August 2015  
**Attachments:** MVP NLEB Capture Report 3 August 2015.xlsx

Good Morning –

Please find attached the NLEB capture report for survey efforts on 3 August 2015. Please let me know if you have any questions.

Thanks,



**Daniel J. Judy**

Southeast Regional Manager

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2250 Lucien Way, Suite 302 | Maitland, FL 32751  
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## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Wednesday, August 05, 2015 11:29 AM  
**To:** 'barbara\_douglas@fws.gov'; Tiernan Lennon (tiernan\_lennon@fws.gov); Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** Taina Pankiewicz; 'Neylon, Megan'; Sparks, Sean  
**Subject:** MVP: NLEB Capture Report for 4 August 2015  
**Attachments:** MVP NLEB Capture Report 4 August 2015.xlsx

Good Morning –

Please find attached our NLEB capture report for field surveys on 4 August 2015.

Please let me know if there are any questions.

Thanks,



**Daniel J. Judy**

Southeast Regional Manager

Environmental Solutions & Innovations, Inc.  
2250 Lucien Way, Suite 302 | Maitland, FL 32751  
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## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Thursday, August 06, 2015 7:37 AM  
**To:** 'barbara\_douglas@fws.gov'; Tiernan Lennon (tiernan\_lennon@fws.gov); Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** 'Neylon, Megan'; Sparks, Sean; Taina Pankiewicz; Valerie Clarkston  
**Subject:** MVP: NLEB Capture Report for 5 August 2015  
**Attachments:** MVP NLEB Capture Report 5 August 2015.xlsx

Good Morning –

Please find attached our NLEB capture report for field surveys on 5 August 2015.

Please let me know if there are any questions.

Thanks,



**Daniel J. Judy**

Southeast Regional Manager

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2250 Lucien Way, Suite 302 | Maitland, FL 32751  
**office:** 321.972.3958 | **direct:** 513.591.4339  
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## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Friday, August 07, 2015 9:35 AM  
**To:** 'barbara\_douglas@fws.gov'; Tiernan Lennon (tiernan\_lennon@fws.gov); Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** 'Neylon, Megan'; Sparks, Sean; Taina Pankiewicz; Valerie Clarkston  
**Subject:** NLEB Capture Report for 6 August 2015  
**Attachments:** MVP NLEB Capture Report 6 August 2015.xlsx

Good Morning –

Please find attached our NLEB capture report for field surveys on 6 August 2015.

Please let me know if there are any questions.

Thanks,



**Daniel J. Judy**

Southeast Regional Manager

Environmental Solutions & Innovations, Inc.  
2250 Lucien Way, Suite 302 | Maitland, FL 32751  
**office:** 321.972.3958 | **direct:** 513.591.4339  
**fax:** 321.972.3959 | **cell:** 407.269.7492  
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## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Sunday, August 09, 2015 8:53 AM  
**To:** 'barbara\_douglas@fws.gov'; Tiernan Lennon (tiernan\_lennon@fws.gov); Barbara Sargent (barbara.d.sargent@wv.gov); Stihler, Craig W  
**Cc:** 'Neylon, Megan'; Sparks, Sean; Taina Pankiewicz; Valerie Clarkston  
**Subject:** MVP: NLEB Capture Report 7-8 August 2015  
**Attachments:** MVP NLEB Capture Report 7-8 August 2015.xlsx

Good Morning –

Please find attached our NLEB capture report for survey efforts on 7-8 August 2015.

Please let me know if you have any questions.

Thanks,



**Daniel J. Judy**

Southeast Regional Manager

Environmental Solutions & Innovations, Inc.  
2250 Lucien Way, Suite 302 | Maitland, FL 32751  
**office:** 321.972.3958 | **direct:** 513.591.4339  
**fax:** 321.972.3959 | **cell:** 407.269.7492  
[djudy@envsi.com](mailto:djudy@envsi.com) | [www.envsi.com](http://www.envsi.com)



## TELEPHONE / PERSONAL CONVERSATION REPORT

---

**PROJECT NAME:** Mountain Valley Pipeline Project

**MVP TEAM CALLER:** John Centofanti – Mountain Valley Pipeline, LLC  
Megan Neylon – Mountain Valley Pipeline, LLC  
Lindsay Hesch – Mountain Valley Pipeline, LLC (via phone)  
Sean Sparks – Tetra Tech  
Virgil Brack, Jr., Ph.D. – Environmental Solutions & Innovations, Inc.  
Taina Pankiewicz – Environmental Solutions & Innovations, Inc.  
Valerie Clarkston – Environmental Solutions & Innovations, Inc.

**CONVERSATION WITH:** Tiernan Lennon – US Fish & Wildlife Service  
Barbara Sargent – WV Department of Natural Resources

**AGENCY:** USFWS/WVDNR

**EMAIL ADDRESS:**

**PHONE NUMBER:**

**SUBJECT:** WV T&E Species Field Surveys and Consultation

**DATE AND TIME:** 9/10/15 1:00pm

---

### SUMMARY OF CONVERSATION:

John started with a general Project overview to update both agencies on changes that have occurred with the Project since previous discussions in October 2014. MVP also gave a schedule update on the filing and constructing timing.

Valerie provided a summary of bat survey results from West Virginia portion of project

- 707 bats captured in WV
- >80% big brown and red bats
- 73 Northern long eared bats (NLEB), representing > 10% of catch
- Tagged 56 NLEB
- 69 roost trees located in WV; 26 were in Lewis County and 17 in Webster
- Max emergence count was 40 bats. Most trees had small numbers of bats emerging

MVP has not finished the portal searches. To date 4 potentially suitable portals have been found in the Nicholas/Braxton County area. Trapping efforts will occur between September 15 and October 31, 2015.





Megan explained that the goal of the meeting was to leave with a clear understanding of our options moving forward. While MVP understands that winter clearing is always a topic for discussion, safety of the contractors and constructability are MVP most significant concern. There are also concerns with the timing of the Project. If for some reason, our Certificate from FERC is not issued in December, and then we are not able to get everything done by 31 March there will be additional work needed to clear the trees. There are significant concerns reclamation and slips from erosion if tree clearing or construction occurs in the winter.

Megan explained that geotech studies have not been completed in WV. There will be some studies done in areas where conventional bores or HDD's are proposed. Previous experience in WV tells us that winter construction in the mountainous terrain will lead to slips and landslides.

Tiernan explained that the USFWS will be conducting a study this autumn to determine if there is an opportunity to adjust the winter clearing window into October, based on NLEB leaving the landscape for the hibernacula. USFWS hopes to start that work in October. Tiernan also explained that there may be an opportunity to expand the tree clearing season into the spring but USFWS has no plans to conduct studies. USFWS would welcome any spring study information that we could provide.

If the project goes into Formal Consultation, it is better to start early. Formal Consultation for this Project would be a first for the Elkins Office and would be very time consuming. Once a completed BA is received from FERC, USFWS has 135 days to complete their review.

The new 4D rule is supposed to be released by the end of the year. It may be beneficial to wait to submit the BA after the 4D rule is finalized to ensure that we are not doing unnecessary work. The 4D rule could exempt a portion of the project. If a portion (or all) of the project qualifies for exemption under the 4D Rule then the autumn clearing window would be 31 August. Although, if the project did qualify for the 4D exemption then the unsurveyed sites inside the NLEB buffers from this summer would need to be netted to confirm that the Indiana bat was not present, in order to obtain a NLAA determination for that species.

West Virginia's Myotis Bat Conservation Fund is being modeled after Kentucky's Fund. USFWS is working with the West Virginia Land Trust, a third party, to draft a Memorandum of Agreement. WV Land Trust will hold the money, acquire the land, and be responsible for the stewardship. This will be an mitigation option for NLAA projects and be capped at Project with around 500 acres of disturbance (exact acreage is still being discussed internally at the USFWS). The Fund is not set up to work for Projects larger. There will likely be some projects that are larger that will have to do on site conservation and a contribution to the fund. We will still want to see roost structures to



replace high quality roosts being removed by the project. There will be mitigation ratios associated with the type of habitat being impacted. Land values will be determined based on the WVUSDA estimates. Categories will be slightly different for the WV Fund then in Kentucky.

There are no mitigation banks currently under development that will be big enough for this project. Mitigation discussions should be reserved for NLAA determinations. USFWS does not anticipate that this Project will be eligible for an NLAA. However, if it does, off-site mitigation sites are supposed to be within 2 miles of the project area. The mitigation is supposed to be close to the project site in order to offset any impacts within the project's action area.

Tiernan will have to discuss the possibility of MVP to be formal or informal consultation with Barb Douglas. Tiernan also suggested a meeting in October with Barb would be helpful to outline the requirements for a BA.

Taina and Valerie turned the conversation to discuss survey results for other species of concern. Some mussel surveys have been completed. MVP is following the Study Protocol that was submitted and approved. No listed species have been discovered. MVP was instructed to not survey Potts Creek because presence has been confirmed. A presence/absence survey wasn't warranted.

Megan explained that HDD is being considered for several sensitive stream crossings however there are challenges associated with HDD on this particular project. Challenges include the tunnel size of 63" (collapse), 1,300 foot pull back space (at bore site), etc. MVP is proposing open cut on most streams. We will work with the USFWS on relocations, erosion, etc., as appropriate. The only Group 2 stream requiring survey on our Project is the Little Kanawha River. MVP completed surveys and nothing of concern was found.

Megan explained that MVP will have water withdraws and that MVP is aware that the rules have changed. The hydrostatic discharge plan is being worked on currently. MVP has also considered recycling water from other portions of the pipeline to reduce the need for water during hydrostatic testing. All this information and a hydrostatic test plan will be in the resource reports submitted to FERC this October.

Plant surveys in West Virginia are completed and no listed species were found.

Tiernan requested a list of survey locations for raptor surveys. She will review and approve the plan. DNR has some new records of nests this year. Barb will provide that information to Tiernan. Tiernan did not have any specific buffer distance from a



waterbody that she would like reviewed. She suggested following the national guidelines.

The meeting concluded at approximately 2:30 pm

Contact Signature: \_\_\_\_\_

## Valerie Clarkston

---

**From:** Valerie Clarkston  
**Sent:** Tuesday, October 13, 2015 8:54 AM  
**To:** Lennon, Tiernan (tiernan\_lennon@fws.gov)  
**Cc:** mneylon@eqt.com; Sparks, Sean; Taina Pankiewicz; Daniel Judy  
**Subject:** Mountain Valley Pipeline - Eagle Nest Surveys  
**Attachments:** MVP\_20150505\_USFWS\_WV\_TLennon\_Eagles\_phone.pdf

Hi Tiernan,

Based on discussions during the 9/10/2015 meeting and our phone conversation from earlier this spring (attached), I have identified the following major river systems crossed by MVP and which necessitate surveys for bald eagle nests:

- Meadow River
- Green River
- Indian Creek

Searches are scheduled during leaf-off (late October through November) to increase nest detectability. According to the National Bald Eagle Management Guidelines, "Nest sites typically include at least one perch with a clear view of the water where eagles usually forage". Thus, searches for eagle nests will extend perpendicularly away from the river to points on the landscape (i.e., nearest ridge top) where the river is assumed to no longer be visible. The width of the survey corridor will be 300 feet, but biologists will use binoculars to scan areas extending beyond the corridor. All nests located within the survey corridor will be photographed and GPS coordinates recorded. If land access is granted, biologists will GPS and photograph nests occurring outside of the designated survey corridor. Results will be summarized in a report and submitted to your office for review.

Please advise if you concur with these proposed methods and survey areas or request that major river systems in other counties be included in this effort.

Thanks,

Valerie



**Valerie Clarkston**

Scientist

Environmental Solutions & Innovations, Inc.  
4525 Este Avenue | Cincinnati, Ohio 45232 | USA

**office:** 513.451.1777 **direct:** 513.591.4315

**fax:** 513.451.3321 **cell:** 513.382.0925

[vclarkston@envsi.com](mailto:vclarkston@envsi.com) | [www](http://www.envsi.com)

## Valerie Clarkston

---

**Subject:** FW: Mountain Valley Pipeline - Eagle Nest Surveys

---

**From:** Valerie Clarkston  
**Sent:** Tuesday, November 03, 2015 8:54 AM  
**To:** Lennon, Tiernan  
**Cc:** Daniel Judy; Taina Pankiewicz; [mneylon@egt.com](mailto:mneylon@egt.com); [Sean.Sparks@tetrattech.com](mailto:Sean.Sparks@tetrattech.com)  
**Subject:** Re: Mountain Valley Pipeline - Eagle Nest Surveys

Thanks. The New River is not crossed by this project.

Valerie Clarkston  
Scientist  
Environmental Solutions & Innovations, Inc.  
4525 Este Avenue  
Cincinnati, Ohio 45232  
Cell: (513-382-0925)  
Office: (513-451-1777)

On Nov 3, 2015, at 8:25 AM, Lennon, Tiernan <[tiernan\\_lennon@fws.gov](mailto:tiernan_lennon@fws.gov)> wrote:

Yes, that sounds good. The New River isn't being crossed for this project is it?

On Mon, Nov 2, 2015 at 8:26 AM, Valerie Clarkston <[VClarkston@envsi.com](mailto:VClarkston@envsi.com)> wrote:

Hi Tiernan,

Can you please confirm that you concur with the proposed survey methods discussed below?

Thank you,

Valerie

---

**From:** Valerie Clarkston  
**Sent:** Tuesday, October 13, 2015 8:54 AM  
**To:** Lennon, Tiernan ([tiernan\\_lennon@fws.gov](mailto:tiernan_lennon@fws.gov))  
**Cc:** [mneylon@egt.com](mailto:mneylon@egt.com); Sparks, Sean; Taina Pankiewicz; Daniel Judy  
**Subject:** Mountain Valley Pipeline - Eagle Nest Surveys

Hi Tiernan,

Based on discussions during the 9/10/2015 meeting and our phone conversation from earlier this spring (attached), I have identified the following major river systems crossed by MVP and which necessitate surveys for bald eagle nests:

- Meadow River

- Greenbrier River
- Indian Creek

Searches are scheduled during leaf-off (late October through November) to increase nest detectability. According to the National Bald Eagle Management Guidelines, "Nest sites typically include at least one perch with a clear view of the water where eagles usually forage". Thus, searches for eagle nests will extend perpendicularly away from the river to points on the landscape (i.e., nearest ridge top) where the river is assumed to no longer be visible. The width of the survey corridor will be 300 feet, but biologists will use binoculars to scan areas extending beyond the corridor. All nests located within the survey corridor will be photographed and GPS coordinates recorded. If land access is granted, biologists will GPS and photograph nests occurring outside of the designated survey corridor. Results will be summarized in a report and submitted to your office for review.

Please advise if you concur with these proposed methods and survey areas or request that major river systems in other counties be included in this effort.

Thanks,

Valerie



---

**ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.**

---

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

---

Pesi 593

13 November 2015

Mr. John Schmidt and Ms. Tiernan Lennon  
U.S. Fish and Wildlife Service  
Elkins Field Office  
694 Beverly Pike  
Elkins, WV 26241

Dear Mr. Schmidt and Ms. Lennon:

Please find enclosed one compact disc containing electronic copies of the following reports:

1. Freshwater Mussel (Unionidae) Surveys for the Proposed Mountain Valley Pipeline in West Virginia
2. Surveys for Rare Plants along MVP's Proposed Mountain Valley Pipeline Project in Braxton, Doddridge, Fayette, Greenbrier, Harrison, Lewis, Monroe, Nicholas, Summers, Webster, and Wetzel Counties West Virginia
3. Listed Bat Studies along MVP's Proposed Mountain Valley Pipeline Project in Braxton, Doddridge, Fayette, Greenbrier, Harrison, Lewis, Monroe, Nicholas, Summers, Webster, and Wetzel Counties, West Virginia

We respectfully request your review of the methods, results, and conclusions contained within these reports. If you have any questions or comments, please do not hesitate to contact me, Daniel Judy ([DJudy@envsi.com](mailto:DJudy@envsi.com); 513-591-4339) or Taina Pankiewicz ([TPankiewicz@envsi.com](mailto:TPankiewicz@envsi.com); 513-591-4311).

Sincerely,

Valerie Clarkston  
Scientist  
[VClarkston@envsi.com](mailto:VClarkston@envsi.com)  
513-591-4315

**www.ENVSI.com**



November 13, 2015

Mr. John Schmidt and Ms. Tiernan Lennon  
U.S. Fish and Wildlife Service  
West Virginia Field Office  
694 Beverly Pike  
Elkins, West Virginia 26241

Mr. Troy Andersen and Ms. Sumalee Hoskin  
U.S. Fish and Wildlife Service  
Virginia Field Office  
6669 Short Lane  
Gloucester, Virginia 23061

**Subject: Mountain Valley Pipeline Project: Intent to Initiate Formal Consultation for Federally Listed Species. FERC Docket Number: CP16-10-000**

Greetings,

Mountain Valley Pipeline, LLC (MVP) respectfully submits official, written notification of its intent to initiate Formal Consultation under Section (7)(a)(2) of the Endangered Species Act to the U.S. Fish and Wildlife Service (USFWS).

MVP is a joint venture between affiliates of EQT Midstream Partners, LP, NextEra Energy, Inc., WGL Holdings, Inc., Vega Energy Partners, Ltd, and RGC Midstream, LLC. The proposed action is construction of the Mountain Valley Pipeline (Project), a 42-inch diameter natural gas pipeline, to allow producers and end-users a direct route to transport new gas supplies to meet the growing need for natural gas in the Appalachian, Mid-Atlantic, and Southeastern United States. The Project will extend from the existing Equitrans transmission system near Mobley in Wetzel County, West Virginia to Transcontinental Gas Pipeline Company's Zone 5 compressor station 165 in Pittsylvania County, Virginia. In West Virginia, the pipeline is expected to cross Braxton, Doddridge, Fayette, Greenbrier, Harrison, Lewis, Monroe, Nicholas, Summers, Webster and Wetzel counties. In Virginia, the pipeline is expected to cross Craig, Franklin, Giles, Montgomery, Pittsylvania and Roanoke counties.

Due to abundance, locations, and seasonal activity patterns, the proposed action has the potential to adversely affect listed bats (Indiana bat, *Myotis sodalis* and northern long-eared bat, *Myotis septentrionalis*), fish (Roanoke logperch, *Percina rex*), and mussels (James spinymussel, *Pleurobema collina*; clubshell, *Pleurobema clava*; and snuffbox, *Epioblasma triquetra*) in both states traversed by the project. A Biological Assessment (BA) will be prepared to cover these, and all federally listed species occurring within the vicinity of the proposed action. To



USFWS

September 28, 2015

Page 2 of 2

aid in preparation of a thorough and complete BA, MVP requests an in-person meeting with both USFWS offices during November 2015.

Once the BA is complete, FERC will submit the document along with an initiation letter to USFWS. At this time, we anticipate that will occur in February 2016.

If you have questions or would like additional information please contact me at 304-841-2086 ([MNeylon@eqt.com](mailto:MNeylon@eqt.com)), or Sean Sparks at 617-443-7565 ([sean.sparks@tetrattech.com](mailto:sean.sparks@tetrattech.com)).

Sincerely,

A handwritten signature in blue ink that reads "Megan Landfried Neylon". The signature is written in a cursive style.

Megan Landfried Neylon

Senior Environmental Coordinator

cc: John Centofanti, EQT Corporation  
Sean Sparks, Tetra Tech

**From:** UPS Quantum View <auto-notify@ups.com>  
**Sent:** Monday, November 16, 2015 11:38 AM  
**To:** Jo Garofalo  
**Subject:** UPS Delivery Notification, Tracking Number 1ZA8042V2210014932



At the request of Jo Garofalo of Environmental Solutions & Innovatio, this notice alerts you the following shipment has been delivered.

**Important Delivery Information**

---

**Message from Jo Garofalo of Environmental Solutions & Innovatio:**  
593.11.12.13 WVUSFWS Lennon Schmidt

**Tracking Number:** [1ZA8042V2210014932](https://www.ups.com/track?tracknum=1ZA8042V2210014932)  
**Delivery Date / Time:** 16-November-2015 / 11:24 AM  
**Delivery Location:** FRONT DESK  
**Signed by:** TEMPLE

**Shipment Detail**

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US

**UPS Service:** NEXT DAY AIR  
**Shipment Type:** Letter

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## TELEPHONE / PERSONAL CONVERSATION REPORT

---

**PROJECT NAME:** Mountain Valley Pipeline Project

**MVP TEAM CALLER:** John Centofanti – Mountain Valley Pipeline, LLC (via phone)  
Megan Neylon – Mountain Valley Pipeline, LLC  
Sean Sparks – Tetra Tech (via phone)  
Taina Pankiewicz – Environmental Solutions & Innovations, Inc. (ESI)  
Valerie Clarkston – ESI  
Daniel Judy – ESI (via phone)  
John Spaeth – ESI (via phone)  
Blayne Gunderman – NEE (via phone)

**CONVERSATION WITH:** Tiernan Lennon  
Elizabeth Stout  
Clifford Brown

**AGENCY:** USFWS, WVDNR

**EMAIL ADDRESS:** [tiernan\\_lennon@fws.gov](mailto:tiernan_lennon@fws.gov)  
[Elizabeth\\_Stout@fws.gov](mailto:Elizabeth_Stout@fws.gov)  
[Clifford.I.brown@wv.gov](mailto:Clifford.I.brown@wv.gov)

**PHONE NUMBER:** Tiernan: 304-636-6586 Ext. 12  
Liz: 304-636-6586 Ext. 15  
Clifford: 304-637-0245

**SUBJECT:** Field Survey Results, Section 7 Formal Consultation

**DATE AND TIME:** 11/23/2015 – 2 p.m. EST

---

### SUMMARY OF CONVERSATION:

Brief discussion/review of mussel field surveys provided by John Spaeth. Surveys at 11 stream crossing locations. 1 Group 2 Stream – Little Kanawha, upstream of Burnsville, Lake. No mussels. No federally listed mussels found during ANY surveys in WV. The current proposed alignment does not cross south fork of Potts Creek. Reports submitted 13 November 2015.

Brief discussion/review of bat netting and telemetry field surveys provided by Dan Judy and Val Clarkston. 74 NLEB captured; 70 roost trees located. Report submitted 13 November 2015.

Discussion/review of portal searches and surveys provided by Dan. 288 miles surveyed; 173 miles along preferred alignment, 115 miles along ARs. 89% centerline, 90% ARs. 36 Portals found. 16 potentially suitable. 5 trapped (4 in WV). 11 unsurveyed due to land access, discovered outside survey window, etc. One NLEB male located in a portal in Braxton County, WV. No other bats located in four other trapped portals. Cliff asked about Salt Peter Cave near



Greenville, WV. Taina replied that came up during the FERC comments and Val said that existing mapping /data shows it as being about a mile from the line.

Discussion/review of bat habitat assessments provided by Dan. 275 miles in WV; 163 miles of centerline, 112 miles of ARs. 92% complete. ~ 12000 potential roost trees identified. 9% of trees were identified as being "high" and 39% moderate for Indiana bat. 30% of trees were identified as being "high" and 38% moderate for NLEB.

Discussion/review of plant surveys provided by Dan. Surveys completed for 5 species. Approximately 60 miles surveyed for original route and an additional 57 miles for the revised route. No target species identified during surveys. Report submitted 13 November 2015.

Discussion/review of bald eagle surveys provided by Val. 4 juvenile and 1 adult seen near Indian Creek. All sightings were more than 4,000 feet from the proposed alignment. No nests.

Discussion/review of BA outline/TOC and timeline. All BA sections will be sent to USFWS as a rolling submission through January 2016. Reviews and comments from the USFWS will be dependent on staff availability The BA with USFWS's comments incorporated will be sent to FERC in February with the expectation that the doc will go to USFWS in April. Taina asked for feedback/review from USFWS for Ibat Take model, at a minimum. USFWS agreed. Liz asked to be copied on email to Tiernan. USFWS tentatively agreed to provide feedback the week of 14-19 December. Megan asked for a meeting to discuss the overall document/progress/sections the week of 16 January, including Conservation Measures. Tiernan mentioned that the revised NLEB 4D rule to come out in late December or early January. Liz provided an example table of contents for a BA that was used on a DOT project. Both Liz and Tiernan were agreeable to the schedule and plan moving forward.

Copy Cliff on all emails sent to WVDNR.

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## Valerie Clarkston

---

**From:** Valerie Clarkston  
**Sent:** Thursday, December 17, 2015 1:50 PM  
**To:** Lennon, Tiernan (tiernan\_lennon@fws.gov)  
**Cc:** Daniel Judy; Taina Pankiewicz; mneylon@eqt.com; 'Sparks, Sean'  
**Subject:** Mountain Valley Pipeline - Updated Project Shapefiles  
**Attachments:** MVP\_Project\_Shapefiles\_20151217.zip

Good afternoon Tiernan,

Attached are updated project shapefiles for the Mountain Valley Pipeline.

Does your office have any comments on the Bat, Mussel, or Plant survey reports that were submitted on November 13, 2015?

Thanks,

Valerie



**Valerie Clarkston**

Scientist

Environmental Solutions & Innovations, Inc.  
4525 Este Avenue | Cincinnati, Ohio 45232 | USA  
**office:** 513.451.1777 **direct:** 513.591.4315  
**fax:** 513.451.3321 **cell:** 513.382.0925  
[vclarkston@envsi.com](mailto:vclarkston@envsi.com) | [www](http://www)

## Valerie Clarkston

---

**Subject:** FW: Mountain Valley Pipeline - Updated Project Shapefiles

---

**From:** Neylon, Megan [<mailto:MNeylon@eqt.com>]  
**Sent:** Wednesday, December 30, 2015 12:27 PM  
**To:** Lennon, Tiernan; Valerie Clarkston  
**Cc:** Daniel Judy; Taina Pankiewicz; Sparks, Sean  
**Subject:** RE: Mountain Valley Pipeline - Updated Project Shapefiles

Hi Tiernan,

Thank you for the response regarding our survey reports. Unfortunately, MVP will actually cross west of the existing ford crossing. A newly constructed Momentum 36-inch pipeline is crossing at the ford. Due to the topography in that area, there is not enough room at that crossing location for both Projects. We were forced to route to the next ridge. Please let me know if you need additional mapping or information about this location.

Also, just an FYI, we will start sending you pieces of the Biological Assessment for review next week. I hope that it is quiet enough in your office that you can get to it!

Thanks,  
Megan

**From:** Lennon, Tiernan [[mailto:tiernan\\_lennon@fws.gov](mailto:tiernan_lennon@fws.gov)]  
**Sent:** Wednesday, December 30, 2015 12:07 PM  
**To:** Valerie Clarkston  
**Cc:** Daniel Judy; Taina Pankiewicz; Neylon, Megan; Sparks, Sean  
**Subject:** Re: Mountain Valley Pipeline - Updated Project Shapefiles

Hey Valerie - Thanks for the updated MVP project shapefiles. I reviewed the bat, mussel, and plant survey results, that you submitted on November 13, 2015, and I didn't see any red flags/have any comments. I did have one question though...in the Little Kanawha River freshwater mussel survey results the report mentions an existing ford crossing in the ADI, is this where the open cut will occur? It appears that way in the mussel survey data sheets, but I just wanted to confirm. The Service recommends that instream work occur in previously disturbed areas or as close as possible.

Happy Holidays!  
-Tiernan

**Virginia USFWS**





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**ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.**

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2250 Lucien Way, Suite 302  
Maitland, FL 32751  
Phone: (321) 972-3958; Fax: (321) 972-3959

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Pesi 593

24 September 2014

Mr. John Schmidt  
United States Fish and Wildlife Service  
West Virginia Field Office  
694 Beverly Pike  
Elkins, WV 26241

Mr. Troy Andersen  
United States Fish and Wildlife Service  
Virginia Field Office  
6669 Short Lane  
Gloucester, VA 23061

**RE: Field Surveys for the Federally Endangered Shale Barren Rock Cress for the Mountain Valley Pipeline Project in Franklin, Giles, Montgomery, Pittsylvania, and Roanoke Counties, Virginia**

Dear Mr. Schmidt and Mr. Andersen:

Environmental Solutions & Innovations, Inc. (ESI) is submitting this inquiry on behalf of Mountain Valley Pipeline, LLC (MVP) for the Mountain Valley Pipeline Project (Project). The proposed Project entails construction of a 42-inch natural gas pipeline beginning at an existing gas extraction facility near Mobley, West Virginia and proceeding south and southeast for approximately 289 miles until it terminates at an existing Transco compressor station near Chatham, Virginia. The proposed Project is expected to cross Braxton, Doddridge, Fayette, Greenbrier, Harrison, Lewis, Monroe, Nicholas, Summers, Upshur, Webster, and Wetzel counties West Virginia and Franklin, Giles, Montgomery, Pittsylvania, and Roanoke counties, Virginia (**Figure 1**).

At such time that the route is set, and since the proposed Project will be completed within the bounds of the FERC Pre-filing process, MVP will "officially" initiate Informal Consultation with U.S. Fish and Wildlife Service (USFWS) under Section 7(a)(2) of the Endangered Species Act. MVP will be sending additional correspondence in the near future. Although, the Project route has not yet been finalized, MVP is seeking to initiate some field surveys this autumn. As such, this correspondence is being submitted to

**[www.EnvironmentalSI.com](http://www.EnvironmentalSI.com)**

request technical assistance from the Elkins and Gloucester Field Offices with regard to the federally endangered shale barren rock cress (*Arabis serotina*). Publicly available sources indicate that the shale barren rock cress is known only from Greenbrier County, West Virginia; however, a GIS desktop analysis shows the Project intersecting numerous shale areas within Virginia (**Figure 2**). Thus we would appreciate any additional information or clarification on the following:

- Will surveys for shale barren rock cress be requested in:
  - all or portions of Greenbrier County, West Virginia?
  - shale barren areas in Virginia?
  - other areas in either state?
- Does USFWS designate an allowable survey window for the species?
- A 300-foot survey corridor (150 feet each side of Project centerline) is currently proposed for all rare, threatened and endangered species on this project; is that acceptable for the purposes of this, and/or other plant surveys?

We respectfully request that USFWS respond by 8 October 2014 so that we may begin surveys during this field season.

In closing, we are aware of the Virginia Field Office's online Project Review process and will utilize that once the Project route is finalized. Likewise we are already working with the Virginia Department of Conservation and Recreation to obtain project-specific listed species information in the proximity to the route through the Natural Heritage Data Explorer. Please feel free to contact me or Megan Landfried from MVP if you have any questions or need additional Project information.

Sincerely,

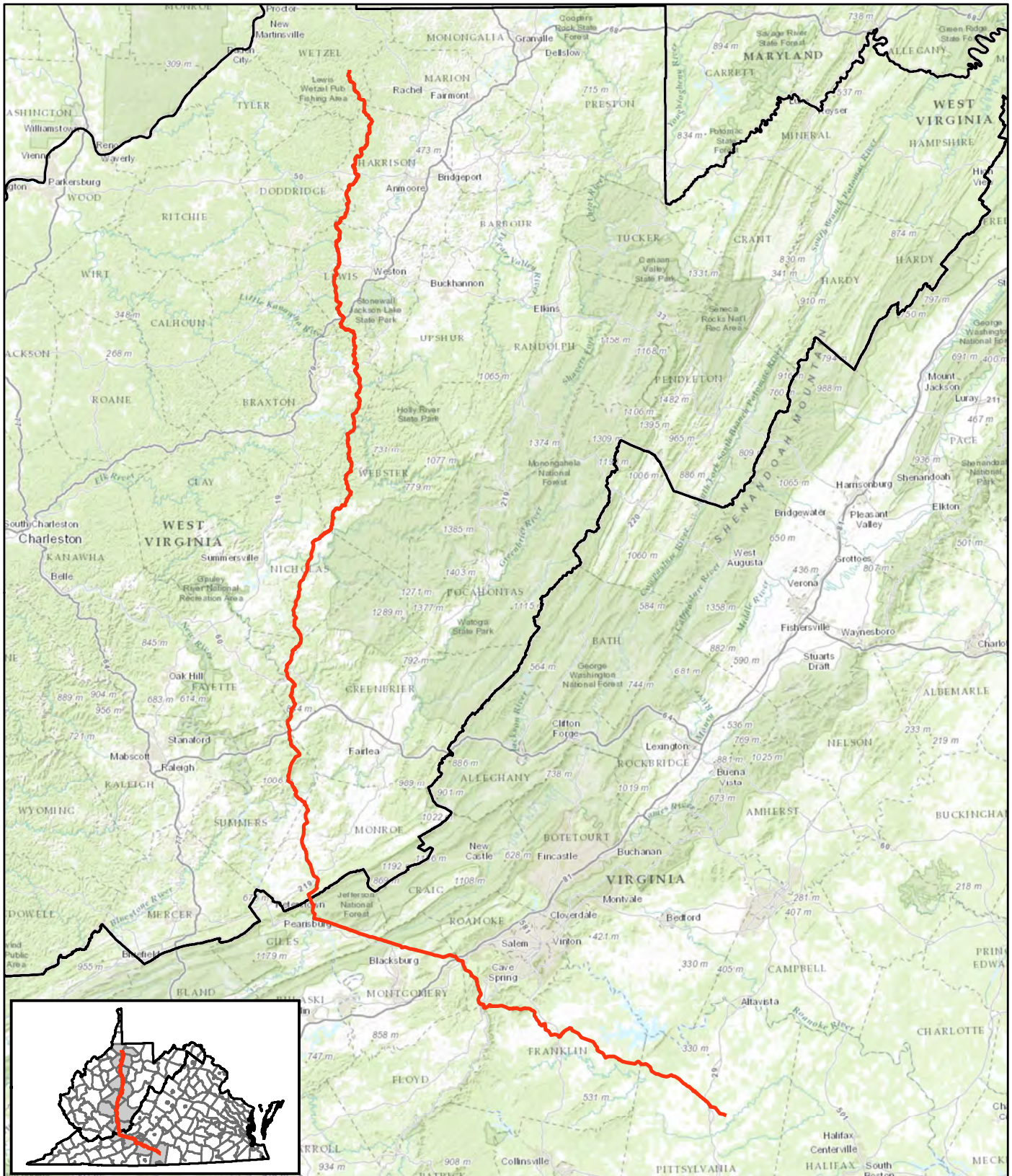


Daniel Judy  
Southeast Regional Manager  
(407) 269-7492  
DJudy@envsi.com

Megan Landfried  
Environmental Coordinator  
(304) 848-0061  
mlandfried@eqt.com

Enclosure: USGS Topographic Maps (Figures 1 and 2)

Path: G:\Current\593\_EQT\_MVP\MXD\Letters\_to\_USFWS\Shale\_Barren\_RockCress\_20140916\593\_Shale\_Barren\_RockCress\_WV\_Fig1\_20140916.mxd (mbruenning) - 9/19/2014



— MVP Route Rev3 (20140908)

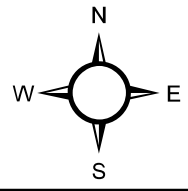
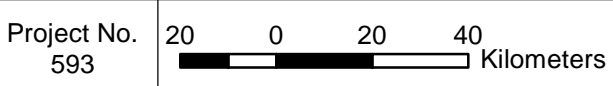


Figure 1. EQT's proposed Mountain Valley Pipeline Project within the States of Virginia and West Virginia.



**ESI** ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.

Project No. 593

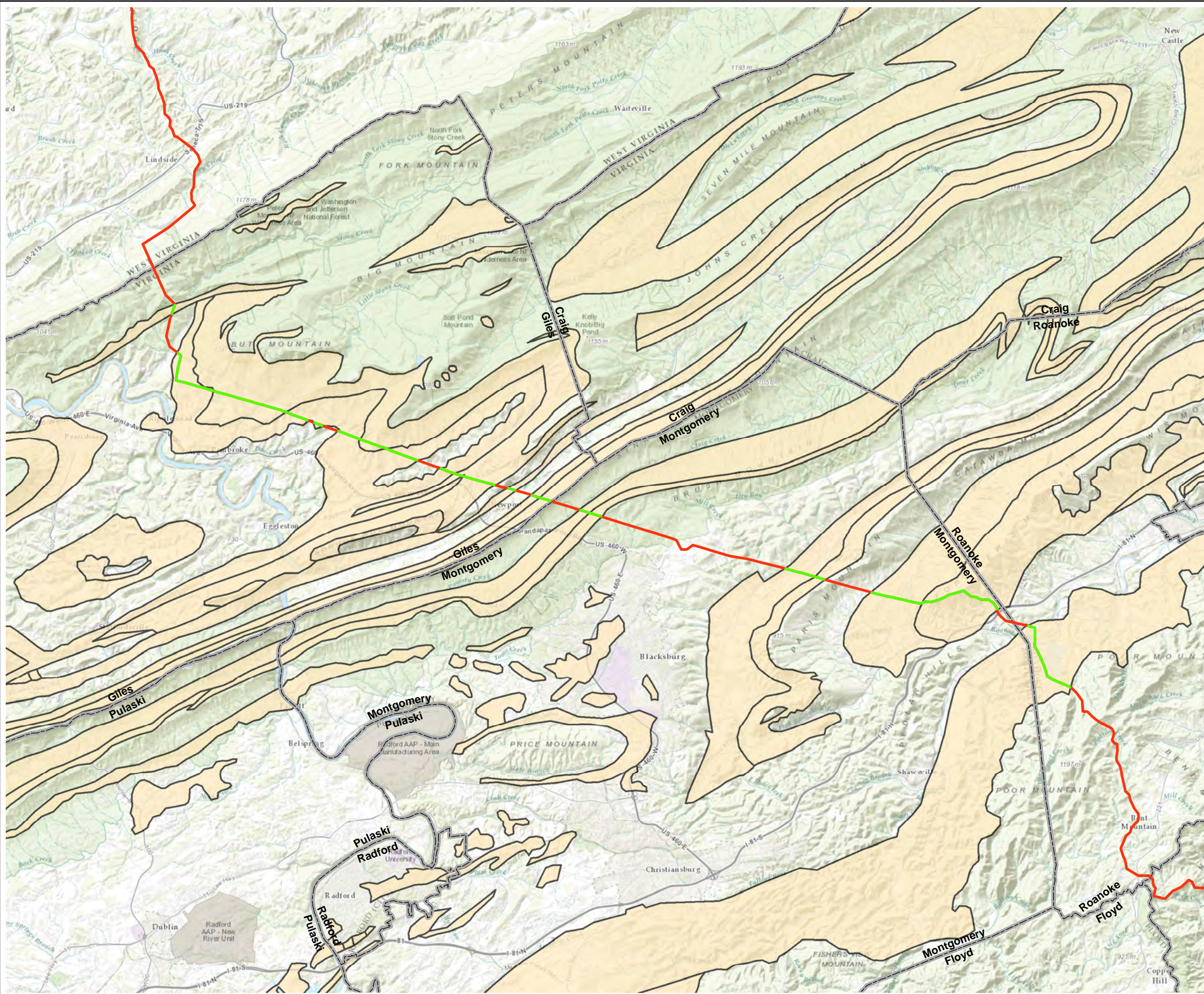
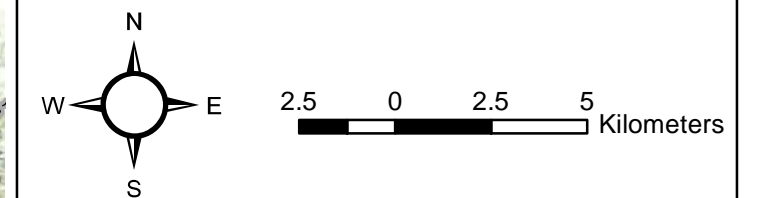
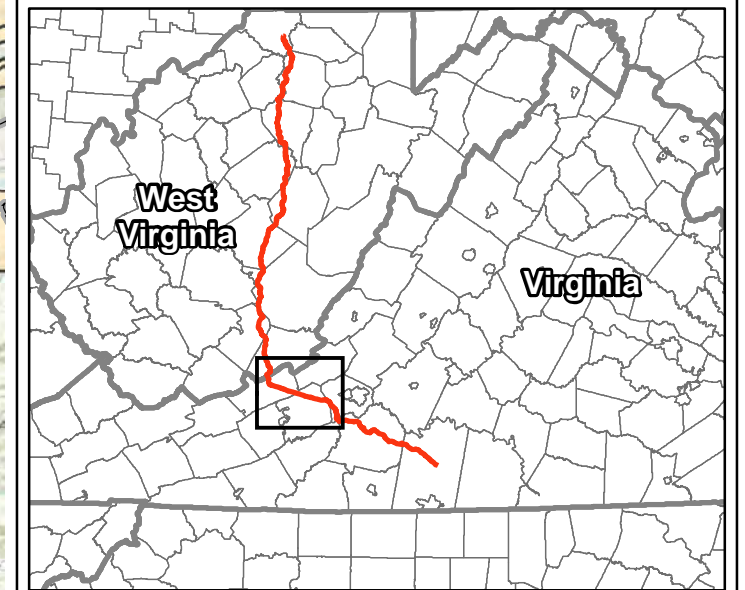


Figure 2. Areas of potential habitat for the shale barren rock cress located along the proposed Mountain Valley Pipeline Project within Franklin, Giles, Montgomery, Pittsylvania, and Roanoke counties, Virginia.

- MVP Route Rev3 (20140908)
- Portions of MVP Route Rev3 that cross known Shale Areas
- County Boundary
- Approximate USGS Shale Areas



Base Map: ESRI ArcGIS Web service - "World\_Topo\_Map" accessed - 9/19/2014



**ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC**

Project No. 593

## Valerie Clarkston

---

**From:** Smith, Kimberly <kimberly\_smith@fws.gov>  
**Sent:** Thursday, October 09, 2014 10:30 AM  
**To:** Daniel Judy; mlandfried@eqt.com  
**Cc:** John Schmidt; Troy Andersen  
**Subject:** Mountain Valley Pipeline Project

Daniel and Megan,

This responds to your letter dated September 24, 2014 regarding the referenced project. In Virginia, we recommend that you begin your project review with our online project review system available at: <http://www.fws.gov/northeast/virginiafield/endangered/about.html>. Once you receive the official/preliminary species list you can start considering specific questions regarding those species on the list. Note: The Service only receives a record of your project once you request an official species list. If you are still evaluating route changes or you do not want to release the location of the route at this time you can use the preliminary list to evaluate alternatives.

This responds to your specific questions below regarding only those portions in Virginia:

Will surveys for shale barren rock cress be requested in:

1. all or portions of Greenbrier County, West Virginia? **WVFO will provide guidance.**
2. shale barren areas in Virginia? **Yes, they may be requested if the species is listed on your official/preliminary species list.**
3. other areas in either state? **In Virginia, yes if species is listed on your official/preliminary species list**
4. Does USFWS designate an allowable survey window for the species? **In Virginia, we have optimal survey time frames. They are available at: [http://www.fws.gov/northeast/virginiafield/pdf/endangeredspecies/20120125\\_VIRGINIASurveytimeframeforplants.pdf](http://www.fws.gov/northeast/virginiafield/pdf/endangeredspecies/20120125_VIRGINIASurveytimeframeforplants.pdf)**
5. A 300-foot survey corridor (150 feet each side of Project centerline) is currently proposed for all rare, threatened and endangered species on this project; is that acceptable for the purposes of this, and/or other plant surveys? **Our online system defines the area where you evaluate impacts based on your project description. This is the action area and is described during Step 1 of our process: [http://www.fws.gov/northeast/virginiafield/endangered/projectreviews\\_step1.html](http://www.fws.gov/northeast/virginiafield/endangered/projectreviews_step1.html)**

If you have additional questions for those portions in Virginia, please contact me.

Thanks,

Kim

--

**\*\*NOTE\*\* My office telephone number has changed**

Kimberly Smith  
Fish and Wildlife Biologist  
U.S. Fish & Wildlife Service  
6669 Short Lane  
Gloucester, VA 23061  
[Kimberly\\_Smith@fws.gov](mailto:Kimberly_Smith@fws.gov)  
804-824-2410  
<http://www.fws.gov/northeast/virginiafield/>



October 13, 2014

Mr. Troy Andersen  
United States Fish and Wildlife Service  
Virginia Field Office  
6669 Short Lane  
Gloucester, VA 23061

**Subject: Mountain Valley Pipeline Project**

Dear Mr. Andersen,

Mountain Valley Pipeline, LLC, a joint venture of EQT Corporation and a subsidiary of NextEra Energy, Inc., is hereby providing background information on the proposed Mountain Valley Pipeline (MVP) Project (Project). MVP plans to construct an approximately 300-mile, 42-inch diameter natural gas pipeline to allow producers and end-users a direct route to transport new gas supplies to meet the growing need for natural gas in the southeastern United States.

The pipeline will extend from the existing Equitrans transmission system in Wetzel County, West Virginia to Transcontinental Gas Pipeline Company's (Transco) Zone 5 compressor station 165 in Pittsylvania County, Virginia. In addition to the pipeline, the Project will require approximately 225,000 horsepower of compression at approximately four compressor stations along the route along with measurement, regulation, and other ancillary facilities required for the safe operation of the pipeline. A Project map has been included as an attachment to this letter.

The Federal Energy Regulatory Commission (FERC) will serve as the lead agency for the Project. MVP plans to request to use the FERC's pre-filing process in late October 2014 and anticipates filing a formal application with the FERC in the third quarter of 2015. The FERC will then prepare an Environmental Assessment or an Environmental Impact Statement to satisfy the National Environmental Policy Act (NEPA) process for the Project.

MVP and their consultants, Tetra Tech, Inc. and Environmental Solutions & Innovation, Inc., will be consulting with the United States Fish and Wildlife Service Virginia Field Office as necessary during development of the Project. However, in order to assist MVP in preparing the FERC application and identifying possible issues to be addressed during the NEPA process, the purpose of this letter is to notify the United States Fish and Wildlife Service Virginia Field Office of MVP's intent to utilize the FERC's NEPA Pre-Filing Process, and to request information on resources under your agency's jurisdiction that could be potentially affected by the Project.

Mr. Troy Andersen

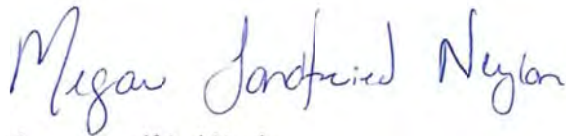
October 13, 2014

Page 2 of 2

The MVP team looks forward to working with your agency as we move forward with development of this Project. We appreciate your assistance and thank in you advance for any help you can provide. A representative of MVP will be in contact with you soon to discuss the Project in further detail.

If you have questions or would like additional information about the Project please contact me at 304-848-0061 ([MLandfried@eqt.com](mailto:MLandfried@eqt.com)), or Sean Sparks at 617-443-7565 ([sean.sparks@tetrattech.com](mailto:sean.sparks@tetrattech.com)).

Sincerely,

A handwritten signature in blue ink that reads "Megan Landfried Neylon". The signature is written in a cursive, flowing style.

Megan Landfried Neylon

Senior Environmental Coordinator

cc: John Centofanti, EQT Corporation  
Blayne Gunderman, NextEra Energy Resources, LLC  
Sean Sparks, Tetra Tech  
Daniel Judy, Environmental Solutions & Innovations





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**ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.**

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4525 Este Avenue  
Cincinnati, OH 45232  
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Pesi 593.09

11 November 2014

**Mountain Valley Pipeline (MVP) meeting with USFWS, Elkins, West Virginia (WV and VA representatives).**

Ms. Megan Neylon (EQT) provided project overview and summary.

- A portion of the MVP route goes through Jefferson National Forest; 2.6 miles total with 1.5 miles being co-located, 75' permanent ROW and 125' construction ROW
- Most of the route was originally collocated with existing electrical utility ROW; because pipelines cannot span valleys as power lines can, reroutes were necessary that reduced the amount of collation.

Liz (USFWS-WV) and Tiernan (USFWS-WV) indicated that since the project crosses only 2 states (instead of 3 or more), it is unlikely that one office will make decisions for the entire Project; both offices will coordinate with each other and provide guidance for portions of the project that occur within their state.

**Bats**

Ms. Taina Pankiewicz (ESI) reviewed each section of the bat study plan to provide agencies opportunity to comment:

Portal Searches:

- Taina (ESI) inquired as to what criteria would be used to determine if a potentially suitable portal located within the 300' survey corridor would have an impact on the project or not. USFWS-WV indicated that it would depend on a variety of characteristics including the location, orientation and overall topography of the area.
- USFWS-VA agree with methods presented in plan; USFWS-VA indicated a known cave is located along the current route within ESI's mapped Kilometer Mist Net Site: VA-KM290.

- USFWS-WV indicated that the southern “buffer” identified on the files from USFWS is a Priority 3 or 4 Hibernacula, not a summer record.

Portal Sampling (Surveys):

- USFWS-WV follows guidelines consistent with what is currently posted on their webpage: <http://www.fws.gov/westvirginiafieldoffice/indianabat.html>. The Draft Protocol for Assessing Abandon Mines/Caves for Bat Use (Updated June 2011). (i.e., Portal sampling conducted on two consecutive nights)
- USFWS-VA follows 2014 Federal range-wide guidelines for portal surveys/trapping (vs. WV guidance outlined in the draft Study Plan document).
- USFWS-VA indicated that guidance regarding requirements for in-cave hibernacula surveys are TBD and will be forthcoming from Sumalee.

Mist Netting:

- USFWS-WV and VA both agreed to the steps proposed in Section 4.3.9. of the bat study plan
- Mist netting survey window
  - USFWS-WV sticking to 1 June start date to 15 August
  - USFWS-VA will start 15 May to 15 August
- Time period for which negative results are valid
  - 3 years from completion of surveys in VA
  - 5 years from completion of surveys in WV
- Northern long-eared bats (NLEB)
  - Discussion of tracking of endangered bats (Section 4.3.8) regarding how many and sex of NLEB should be transmitted
    - WV indicated that the species will be listed or not will occur in April 2015, and thus an answer will present itself at that time.
    - VA follows 2014 range-wide guidelines which indicates that NLEB should be treated same as the Indiana bat
  - In 2014, WV saw captures of NLEB constituting 50% - 60% of total capture. VA said they were not seeing capture rates as high
  - No clear answer as to the size or probability of applying seasonal clearing restrictions within NELB capture buffers
- USFWS-VA (Troy) requested additional information (data sheets, figures, pictures, etc.) on each excluded area (Section 4.3.2) be submitted to the Agency at the time they are reviewed in the field so that USFWS can comment/concur before mist netting is completed. Preferred correspondence method is through email. WV field office agreed.

- USFWS does not need hardcopies of all mist net survey data sheets; including a disk containing electronic copies with the report is sufficient.

## **Aquatics**

Mr. Casey Swecker (ESI) provided brief discussion on how freshwater mussels and other aquatic species (i.e. Roanoke logperch) would be handled.

- USFWS-WV agreed that following the WV Mussel Protocol is appropriate. WV anticipates updating the mussel survey guidelines prior to 2015 survey season
- Megan (EQT) indicated that, at this time, the intention is to complete surveys on all potential mussel streams since it is unclear which will be bored. Once a determination is made regarding directional drilling, some streams may be removed from the survey que since this will avoid impacts.
- Kim (USFWS-VA) indicated that they don't necessarily agree that surveys can be omitted for proposed HDD streams since there is a potential for an inadvertent return of drilling fluids into the stream as result of the HDD/Bore.
- USFWS requested hardcopy maps be included in all correspondence related to mussel surveys.
- Casey indicated that ESI has begun doing the desktop analysis for which streams may require aquatic species surveys, including analysis of area drained by a stream at a proposed point of crossing. He cited the crossing of Craig Creek as an example where surveys may not be required, despite the James Spynymussel being known from the stream, since less than 3 mi<sup>2</sup> are drained at the point of crossing.
- EQT and ESI indicated that we will collaborate with USFWS regarding the areas requiring survey and a conservative approach would be used to ensure all mussel concerns are covered.
- ESI proposes to follow USFWS-VA and VDGIF's DRAFT Freshwater Mussel Guidelines for Virginia (updated 4 September 2013).
- ESI will begin field efforts to address concerns for mussels by completing Site Assessments on streams identified by IPaC and agencies. Subsequently surveys will be completed as necessary and appropriate as the project evolves.
- ESI will copy Mr. Brian Watson (VA Dept. of Game & Inland Fisheries-Aquatic Resources Biologist/Malacologist) on all correspondence with USFWS regarding mussel surveys in Virginia, including the Study Plan(s).
- USFWS-VA indicated that Time of Year restrictions (TOYR) are the same as VDGIF and these, as well as protocols for species surveys and in-stream construction are available on their webpage <http://www.fws.gov/northeast/virginiafield/index.html>.

- Kim (USFWS-VA) indicated that surveys for the Roanoke logperch will not be required, since not finding them doesn't mean that they aren't there, but habitat assessments may be warranted.
- Taina (ESI) inquired what types of project impacts Roanoke logperch might have on the project.
- Kim (USFWS-VA) indicated that avoidance via boring is preferred. If open trench in a known occurrence stream with suitable habitat is necessary, then Formal Consultation will be required. If the occurrence is in a tributary to a known occurrence stream then seasonal avoidance (15 Mar – 30 June) is a sufficient avoidance technique.

- 

## IPaC

- USFWS-VA inquired about the results of the IPaC system for project species review.
  - ESI indicated that the system would not return a result and repeatedly errored out saying there are “too many vertices”.
  - Troy (USFWS-VA) indicated that they would have their GIS person (Jessica) contact ESI to assist with getting the shape files input to IPaC.
- VA indicated that the IPaC would identify potential mussel streams, fish streams, areas of plant concern, etc. If IPaC indicates that no habitat is present for a species then NO surveys are required for that species. Caveat: make sure that the ENTIRE project Action Area (i.e., Access Roads, ancillary facilities, etc.,) are all including in the shape file submitted to the system for review.
- WV indicated that the IPaC may not be completely complete and correct for plants in their state. Specifically, the “suitable habitat” layers for plants are not loaded. To that end, they will provide the Applicant with specific information regarding
  - which plants are known from near the project area
  - which counties RBC is known from
  - surveys are required in these “areas”

## MEETING ATTENDEES:

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## CONFERENCE CALL-IN MEETING ATTENDEES:

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Troy Andersen, U.S. Fish and Wildlife Service (VA)

[Troy\\_Andersen@fws.gov](mailto:Troy_Andersen@fws.gov)

Office: (804) 824 - 2428

Kim Smith (formerly Kim Marbain), U.S. Fish and Wildlife Service (VA)

[Kimberly\\_Smith@fws.gov](mailto:Kimberly_Smith@fws.gov)

Office: (804) 824 - 2410

## Valerie Clarkston

---

**From:** Troy Andersen <troy\_andersen@fws.gov>  
**Sent:** Tuesday, November 18, 2014 2:19 PM  
**To:** Taina Pankiewicz; Valerie Clarkston  
**Cc:** Sumalee Hoskin; Kimberly Smith; Daniel Judy; Shane Hanlon  
**Subject:** RE: MVP - IPaC RTE Species List

Taina:

My apologies for my previous email. You are indeed correct. To preserve the privacy of the proposed route, not requesting an official species list was the correct choice.

The purpose of the species list is to provide you with a list of species that are potentially present within your action area. Provided that you believe that uploading the shapefile into IPaC was successful (i.e. the route map looks correct), then the results are accurate. The results of the species list are the foundation of your species conclusion table ([https://www.fws.gov/northeast/virginiafield/angered/projectreviews\\_step2.html](https://www.fws.gov/northeast/virginiafield/angered/projectreviews_step2.html)). For each listed species identified, you'll have to make an ESA Section 7 Determination within the table. As we've already seen with the bats, some field work and/or surveys will be necessary to accurately make a determination. Our primary role at this stage of the project is to provide you feedback on any survey plans. As the project progresses and you become more confident in your determinations and begin considering avoidance/minimization measures, our role shifts to reviewing/concurring with your determinations.

I hope that helps clarify the process some. If you have any questions, feel free to contact me.

V/R  
Troy

---

### Troy M. Andersen

Endangered Species/Conservation Planning Assistance Supervisor  
USFWS – Virginia Field Office  
Phone: 804-824-2428  
Mobile: 804-654-9235  
Visit us at: <http://www.fws.gov/northeast/virginiafield/>

---

**From:** Taina Pankiewicz [mailto:[TPankiewicz@envsi.com](mailto:TPankiewicz@envsi.com)]  
**Sent:** Friday, November 14, 2014 4:18 PM  
**To:** Troy Andersen; Valerie Clarkston  
**Cc:** Sumalee Hoskin; Kimberly Smith; Daniel Judy  
**Subject:** RE: MVP - IPaC RTE Species List

Hey Troy,

I checked out the attachment you sent. We're still learning how to use the IPaC so thank you for your patience with us. When Val ran the project through the system she chose the option that produced a list that she could share because that was what we believed needed to be done. To be frank, we weren't sure what would happen if we pushed the button – i.e., if it shared that info with you or not or what happened? We weren't sure if the planning list was the same

as the “official list” or not? We would be very grateful for any insight you can provide us to help us ensure that we navigate this process in the appropriate fashion, doing the correct steps in the correct order. To that end, it was our understanding that the project process was that we should provide the IPaC results to your office for comment and I believe that is the context of her “verify the accuracy” statement. As far as the “relevant to VA” part, I think she asked the question that way, since, at the meeting, it seemed that the VA and WV field offices wish to have us coordinate with each of you individually based on species occurrences within that state.

I know your office is quite busy in general, but especially right now with so many pipelines planning crossings for VA in the next few years and we really appreciate your time and efforts working with us.

Taina



**Taina Pankiewicz**

President, COO

Environmental Solutions & Innovations, Inc.

4525 Este Avenue | Cincinnati, OH 45232 | USA

**office:** 513.451.1777 **direct:** 513.591.4311

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[tpankiewicz@envsi.com](mailto:tpankiewicz@envsi.com) | [www](http://www.esi.com)

---

**From:** Troy Andersen [[mailto:troy\\_andersen@fws.gov](mailto:troy_andersen@fws.gov)]

**Sent:** Friday, November 14, 2014 4:02 PM

**To:** Valerie Clarkston

**Cc:** Sumalee Hoskin; Kimberly Smith; Taina Pankiewicz; Daniel Judy

**Subject:** RE: MVP - IPaC RTE Species List

Valerie:

The species lists you provided are planning level lists. While there is nothing incorrect about them, we prefer that you provide an official species list. Creating an official species list provides a tracking number from the system that we can use to track this review through its completion. The graphic attached illustrates the link in IPaC for requesting an official species list. Also, I’m not clear on what your request actually is at this time (“verify the accuracy of the results relevant to VA?”).

V/R

Troy

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**Troy M. Andersen**

Endangered Species/Conservation Planning Assistance Supervisor

USFWS – Virginia Field Office

Phone: 804-824-2428

Mobile: 804-654-9235

Visit us at: <http://www.fws.gov/northeast/virginiafield/>



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**From:** Valerie Clarkston [mailto:[VClarkston@envsi.com](mailto:VClarkston@envsi.com)]

**Sent:** Thursday, November 13, 2014 4:41 PM

**To:** [troy\\_andersen@fws.gov](mailto:troy_andersen@fws.gov)

**Cc:** Sumalee\_Hoskin@fws.gov ([Sumalee\\_Hoskin@fws.gov](mailto:Sumalee_Hoskin@fws.gov)); [Kimberly\\_Smith@fws.gov](mailto:Kimberly_Smith@fws.gov); Taina Pankiewicz; Daniel Judy

**Subject:** MVP - IPaC RTE Species List

Hello Troy,

Attached are the species lists provided by IPaC for the proposed MVP Project as well as the shapefile of its current route. Can you please verify the accuracy of the results relevant to VA?

With your permission, I would like to include this email and your response within the Project's correspondence record.

Thank you,

Valerie



**Valerie Clarkston**

Scientist

Environmental Solutions & Innovations, Inc.

4525 Este Avenue | Cincinnati, Ohio 45232 | USA

t: 513.451.1777 f: 513.451.3321 c: 513.382.0925

[vclarkston@envsi.com](mailto:vclarkston@envsi.com) | [www](http://www)

## Valerie Clarkston

---

**From:** Valerie Clarkston  
**Sent:** Thursday, November 20, 2014 8:32 AM  
**To:** 'Troy Andersen'; Taina Pankiewicz  
**Cc:** Sumalee Hoskin; Kimberly Smith; Daniel Judy; Shane Hanlon  
**Subject:** RE: MVP - IPaC RTE Species List

Troy,

Thanks for your response. We have created our species conclusion table and are currently awaiting feedback/input from both VDGIF and VADCR NHP.

I am currently updating our bat study plan based on comments received during the 11/10 Elkins meeting. Do you, Sumalee, or Kim have any additional comments not mentioned during the meeting that you would like to add?

Thanks,

Valerie

### Valerie Clarkston

Scientist

*Environmental Solutions & Innovations, Inc.*

4525 Este Avenue

Cincinnati, OH 45232

Office 513.451.1777

Mobile 513.382.0925

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**From:** Troy Andersen [mailto:troy\_andersen@fws.gov]  
**Sent:** Tuesday, November 18, 2014 2:19 PM  
**To:** Taina Pankiewicz; Valerie Clarkston  
**Cc:** Sumalee Hoskin; Kimberly Smith; Daniel Judy; Shane Hanlon  
**Subject:** RE: MVP - IPaC RTE Species List

Taina:

My apologies for my previous email. You are indeed correct. To preserve the privacy of the proposed route, not requesting an official species list was the correct choice.

The purpose of the species list is to provide you with a list of species that are potentially present within your action area. Provided that you believe that uploading the shapefile into IPaC was successful (i.e. the route map looks correct), then the results are accurate. The results of the species list are the foundation of your species conclusion table ([https://www.fws.gov/northeast/virginiafield/endangered/projectreviews\\_step2.html](https://www.fws.gov/northeast/virginiafield/endangered/projectreviews_step2.html)). For each listed species identified, you'll have to make an ESA Section 7 Determination within the table. As we've already seen with the bats, some field work and/or surveys will be necessary to accurately make a determination. Our primary role at this stage of the project is to provide you feedback on any survey plans. As the project progresses and you become more confident in your determinations and begin considering avoidance/minimization measures, our role shifts to reviewing/concurring with your determinations.

I hope that helps clarify the process some. If you have any questions, feel free to contact me.

V/R  
Troy

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**Troy M. Andersen**

Endangered Species/Conservation Planning Assistance Supervisor  
USFWS – Virginia Field Office  
Phone: 804-824-2428  
Mobile: 804-654-9235  
Visit us at: <http://www.fws.gov/northeast/virginiafield/>

---

**From:** Taina Pankiewicz [mailto:[TPankiewicz@envsi.com](mailto:TPankiewicz@envsi.com)]  
**Sent:** Friday, November 14, 2014 4:18 PM  
**To:** Troy Andersen; Valerie Clarkston  
**Cc:** Sumalee Hoskin; Kimberly Smith; Daniel Judy  
**Subject:** RE: MVP - IPaC RTE Species List

Hey Troy,

I checked out the attachment you sent. We're still learning how to use the IPaC so thank you for your patience with us. When Val ran the project through the system she chose the option that produced a list that she could share because that was what we believed needed to be done. To be frank, we weren't sure what would happen if we pushed the button – i.e., if it shared that info with you or not or what happened? We weren't sure if the planning list was the same as the "official list" or not? We would be very grateful for any insight you can provide us to help us ensure that we navigate this process in the appropriate fashion, doing the correct steps in the correct order. To that end, it was our understanding that the project process was that we should provide the IPaC results to your office for comment and I believe that is the context of her "verify the accuracy" statement. As far as the "relevant to VA" part, I think she asked the question that way, since, at the meeting, it seemed that the VA and WV field offices wish to have us coordinate with each of you individually based on species occurrences within that state.

I know your office is quite busy in general, but especially right now with so many pipelines planning crossings for VA in the next few years and we really appreciate your time and efforts working with us.

Taina



**Taina Pankiewicz**

President, COO

Environmental Solutions & Innovations, Inc.  
4525 Este Avenue | Cincinnati, OH 45232 | USA  
**office:** 513.451.1777 **direct:** 513.591.4311  
**fax:** 513.451.3321 **cell:** 513.907.6563  
[tpankiewicz@envsi.com](mailto:tpankiewicz@envsi.com) | [www](http://www)

---

**From:** Troy Andersen [[mailto:troy\\_andersen@fws.gov](mailto:troy_andersen@fws.gov)]  
**Sent:** Friday, November 14, 2014 4:02 PM  
**To:** Valerie Clarkston  
**Cc:** Sumalee Hoskin; Kimberly Smith; Taina Pankiewicz; Daniel Judy  
**Subject:** RE: MVP - IPaC RTE Species List

Valerie:

The species lists you provided are planning level lists. While there is nothing incorrect about them, we prefer that you provide an official species list. Creating an official species list provides a tracking number from the system that we can use to track this review through its completion. The graphic attached illustrates the link in IPaC for requesting an official species list. Also, I'm not clear on what your request actually is at this time ("verify the accuracy of the results relevant to VA?").

V/R  
Troy

---

**Troy M. Andersen**

Endangered Species/Conservation Planning Assistance Supervisor  
USFWS – Virginia Field Office  
Phone: 804-824-2428  
Mobile: 804-654-9235  
Visit us at: <http://www.fws.gov/northeast/virginiafield/>

---

**From:** Valerie Clarkston [<mailto:VClarkston@envsi.com>]  
**Sent:** Thursday, November 13, 2014 4:41 PM  
**To:** [troy\\_andersen@fws.gov](mailto:troy_andersen@fws.gov)  
**Cc:** Sumalee\_Hoskin@fws.gov ([Sumalee\\_Hoskin@fws.gov](mailto:Sumalee_Hoskin@fws.gov)); [Kimberly\\_Smith@fws.gov](mailto:Kimberly_Smith@fws.gov); Taina Pankiewicz; Daniel Judy  
**Subject:** MVP - IPaC RTE Species List

Hello Troy,

Attached are the species lists provided by IPaC for the proposed MVP Project as well as the shapefile of its current route. Can you please verify the accuracy of the results relevant to VA?

With your permission, I would like to include this email and your response within the Project's correspondence record.

Thank you,

Valerie



**Valerie Clarkston**

Scientist

Environmental Solutions & Innovations, Inc.  
4525 Este Avenue | Cincinnati, Ohio 45232 | USA



## TELEPHONE / PERSONAL CONVERSATION REPORT

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**PROJECT NAME:** Mountain Valley Pipeline Project  
**MVP TEAM CALLER:** Valerie Clarkston  
**CONVERSATION WITH:** Troy Andersen  
**AGENCY:** VA USFWS  
**EMAIL ADDRESS:** [troy\\_andersen@fws.gov](mailto:troy_andersen@fws.gov)  
**PHONE NUMBER:** 804-824-2428  
**SUBJECT:** Comments on the Bat Study Plan  
**DATE AND TIME:** 11/25/2014 @ 11:15 AM

---

### SUMMARY OF CONVERSATION:

Valerie asked if there were any additional comments to the Bat Study Plan. Troy replied saying Sumalee is currently working on providing comments but was having trouble viewing the Plan figures (they are password protected). Valerie told Troy she would resend Sumalee an email with the download link and password in order to view the files.

Contact Signature: \_\_\_\_\_

## Valerie Clarkston

---

**From:** Hoskin, Sumalee <sumalee\_hoskin@fws.gov>  
**Sent:** Tuesday, November 25, 2014 12:01 PM  
**To:** Valerie Clarkston  
**Cc:** Daniel Judy; Taina Pankiewicz; Troy Andersen  
**Subject:** Re: Mountain Valley Pipeline - Bat Study Plan Comments and Figures

Valerie,  
Thanks for the password. I am in the process of review the study plan. I will have comments to you by tomorrow.  
Sumalee

On Tue, Nov 25, 2014 at 11:26 AM, Valerie Clarkston <[VClarkston@envsi.com](mailto:VClarkston@envsi.com)> wrote:

Hi Sumalee,

I contacted Troy to ask if your office had any additional comments on MVP's Bat Study Plan and he mentioned that you were having trouble viewing the Figures. In order to unzip and view the files you need to enter the password that was provided with the FTP link. I have included it again below:

Link: [http://www.environmentalsi.com/Appendix\\_A\\_Figures.zip](http://www.environmentalsi.com/Appendix_A_Figures.zip)

Password: 20esi14

Please let me know if you have any additional trouble. We look forward to your comments on the Study Plan.

Thanks,

Valerie



**Valerie Clarkston**

Scientist

Environmental Solutions & Innovations, Inc.

4525 Este Avenue | Cincinnati, Ohio 45232 | USA

**office:** 513.451.1777 **direct:** 513.591.4315

**fax:** 513.451.3321 **cell:** 513.382.0925

[vclarkston@envsi.com](mailto:vclarkston@envsi.com) | [www](http://www)

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**NOTE: MY EXTENSION HAS CHANGED**

\*\*\*\*\*

Sumalee Hoskin

US Fish & Wildlife Service

6669 Short Lane

Gloucester, VA 23061

Tel: 804-693-6694 ex. 2414

Fax: 804-693-9032

Visit us at <http://www.fws.gov/northeast/virginiafield/>

## Kyra Pinsky

---

**From:** Hoskin, Sumalee <sumalee\_hoskin@fws.gov>  
**Sent:** Wednesday, November 26, 2014 2:12 PM  
**To:** Valerie Clarkston  
**Cc:** Daniel Judy; Taina Pankiewicz  
**Subject:** Re: Mountain Valley Pipeline - Bat Study Plan Comments and Figures  
**Attachments:** 593 MVP Bat Study Plan 3 November 2014-SH.docx

Hi Valerie,  
Attached is the study plan with my comments. If you have question, I'll be back in the office Monday.  
Have a good Thanksgiving,  
Sumalee

On Tue, Nov 25, 2014 at 11:26 AM, Valerie Clarkston <[VClarkston@envsi.com](mailto:VClarkston@envsi.com)> wrote:

Hi Sumalee,

I contacted Troy to ask if your office had any additional comments on MVP's Bat Study Plan and he mentioned that you were having trouble viewing the Figures. In order to unzip and view the files you need to enter the password that was provided with the FTP link. I have included it again below:

Link: [http://www.environmentalsi.com/Appendix\\_A\\_Figures.zip](http://www.environmentalsi.com/Appendix_A_Figures.zip)

Password: 20esi14

Please let me know if you have any additional trouble. We look forward to your comments on the Study Plan.

Thanks,

Valerie





**Valerie Clarkston**

Scientist

Environmental Solutions & Innovations, Inc.

4525 Este Avenue | Cincinnati, Ohio 45232 | USA

**office:** 513.451.1777 **direct:** 513.591.4315

**fax:** 513.451.3321 **cell:** 513.382.0925

[vclarkston@envsi.com](mailto:vclarkston@envsi.com) | [www](http://www)

--

**NOTE: MY EXTENSION HAS CHANGED**

\*\*\*\*\*

Sumalee Hoskin

US Fish & Wildlife Service

6669 Short Lane

Gloucester, VA 23061

Tel: 804-693-6694 ex. 2414

Fax: 804-693-9032

Visit us at <http://www.fws.gov/northeast/virginiafield/>

## Valerie Clarkston

---

**From:** Valerie Clarkston  
**Sent:** Friday, March 06, 2015 5:07 PM  
**To:** 'VirginiaFieldOffice@fws.gov'  
**Cc:** Taina Pankiewicz; mneylon@eqt.com  
**Subject:** Online Project Review Request Letter - Mountain Valley Pipeline  
**Attachments:** 593\_General\_Fig1\_20150302.pdf; 593\_General\_Fig2\_20150302\_Tabloid.pdf; Mountain\_Valley\_Pipeline\_ProjectFiles\_20150304.zip; Project Review Package Steps 1 - 7.pdf

To whom it concerns,

ESI has reviewed the above referenced project using the USFWS Virginia Field Office's online project review process, and have followed all guidance and instructions in completing the review as follows:

**Step 1: Define the Action Area** – The proposed Mountain Valley Pipeline Project consists of the development of a 42-inch diameter natural gas pipeline that will extend from the existing Equitrans transmission system in Wetzel County, West Virginia to Transcontinental Gas Pipeline Company's (Transco) Zone 5 compressor station 165 in Pittsylvania County, Virginia. There are several potential route alternatives that are currently under consideration. At present, all route alternatives total 386.9 miles, with 169.9 miles in Virginia, traversing Craig, Giles, Montgomery, Roanoke, Franklin, and Pittsylvania counties. At present, all access roads total 167 miles, with 22.2 in Virginia. Aboveground facilities cover an approximate 1,246.74 acres, with 243.16 acres in Virginia. All routes and associated ancillary facilities (i.e., compressor stations, metering stations, access roads, etc.), as they are presently designed are included in the project's defined Action Area.

**Step 2: Official Species List** – The online Information, Planning, and Conservation (IPaC) system does not allow multi-part features to be uploaded at once. Because of the size of the project, it was necessary to break the project's routes into 12 pieces and to submit each piece individually for review. The 329 proposed access roads and 33 above ground facilities were not fed into IPaC due to the upload restriction, but the majority of these features are within 0.5 mile of the project's route alternatives.

**Step 3: State Coordination** – Copies of coordination correspondence with both the Virginia Department of Game and Inland Fisheries (VDGIF) and Department of Conservation and Natural Resources (DCNR) are included.

**Step 4: Suitable habitat** – A completed *Species Conclusions Table* is provided.

**Step 5: Critical habitat** – A copy of the results from Virginia Field Office Critical Habitat Map Tool are provided, showing that the project does not intersect any identified critical habitat.

**Step 6a: Eagle Nests** – Results from the VaEagles Nest Locator Map showing that the project is not within 660 feet of any known eagle nests.

**Step 6b: Eagle Concentration Areas** – Results of the Virginia Field Office's Bald Eagle Map Tool showing that the project is not within a mile of any known concentration areas.

**Step 7: Determinations** – A *Species Conclusions Table* is provided.

Step 8: Project Review Package – All items above are hereby submitted for project review. We respectfully request feedback from the USFWS.

Field surveys for rare, threatened, and endangered species began in November 2014 and are expected to continue through October 2015. Construction of this project is expected to begin December 2016.

This project review is needed from the Virginia Field Office in order to:

- Confirm that the federally listed species provided in the *Species Conclusion Table* do occur within the vicinity of the proposed action
- Recommend site-specific surveys for federally listed species
- Recommend appropriate measures to avoid, minimize, or mitigate potential impacts to federally listed species found to occur within the vicinity of the proposed action

Included with the project review package are U.S. Geological Survey Topographic Maps and electronic shapefiles of the proposed action to assist in your review. Based on preliminary conversations with both United States Fish and Wildlife Service and VDGIF, MVP anticipates conducting surveys for endangered bats and freshwater mussels. Study Plans detailing methods and timelines for these surveys will be submitted to USFWS and VDGIF within a week of the date on this letter. We will request individual feedback on these documents and will prepare and submit similar survey-specific documents for all species requiring field studies.

For additional information, please do not hesitate to contact me.

Thanks,

Valerie



**Valerie Clarkston**

Scientist

Environmental Solutions & Innovations, Inc.  
4525 Este Avenue | Cincinnati, Ohio 45232 | USA  
**office:** 513.451.1777 **direct:** 513.591.4315  
**fax:** 513.451.3321 **cell:** 513.382.0925  
[vclarkston@envsi.com](mailto:vclarkston@envsi.com) | [www](http://www)

## Valerie Clarkston

---

**From:** Virginia Field Office, FW5 <virginiafieldoffice@fws.gov>  
**Sent:** Friday, March 06, 2015 5:08 PM  
**To:** Valerie Clarkston  
**Subject:** Confirmation of Project Receipt Re: Online Project Review Request Letter - Mountain Valley Pipeline

Thanks for submitting your online project package. We will review your package within 30 days of receipt. If you have submitted an online **project review request letter**, expect our response within 30 days. If you have submitted an online **project review certification letter**, you will typically not receive a response from us since the certification letter is our official response. However, if we have additional questions or we do not concur with your determinations, we will contact you during the review period.

## Valerie Clarkston

---

**From:** Virginia Field Office, FW5 <virginiafieldoffice@fws.gov>  
**Sent:** Friday, March 06, 2015 5:08 PM  
**To:** Valerie Clarkston  
**Subject:** Confirmation of Project Receipt Re: Online Project Review Request Letter - Mountain Valley Pipeline

Thanks for submitting your online project package. We will review your package within 30 days of receipt. If you have submitted an online **project review request letter**, expect our response within 30 days. If you have submitted an online **project review certification letter**, you will typically not receive a response from us since the certification letter is our official response. However, if we have additional questions or we do not concur with your determinations, we will contact you during the review period.

## Valerie Clarkston

---

**From:** Troy Andersen <troy\_andersen@fws.gov>  
**Sent:** Monday, March 30, 2015 10:09 AM  
**To:** Valerie Clarkston; Sumalee Hoskin  
**Cc:** Taina Pankiewicz; mneylon@eqt.com  
**Subject:** RE: Mountain Valley Pipeline - Revised Bat Study Plan

Ma'am:

We have put together a response and I am in the final stages of revising it and getting it signed. I hope to have it complete by mid-week.

Happy Monday!

V/R  
Troy

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### Troy M. Andersen

Endangered Species/Conservation Planning Assistance Supervisor  
USFWS – Virginia Field Office  
Phone: 804-824-2428  
Mobile: 804-654-9235  
Visit us at: <http://www.fws.gov/northeast/virginiafield/>

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**From:** Valerie Clarkston [mailto:[VClarkston@envsi.com](mailto:VClarkston@envsi.com)]  
**Sent:** Monday, March 30, 2015 9:53 AM  
**To:** [troy\\_andersen@fws.gov](mailto:troy_andersen@fws.gov); Sumalee\_Hoskin@fws.gov ([Sumalee\\_Hoskin@fws.gov](mailto:Sumalee_Hoskin@fws.gov))  
**Cc:** Taina Pankiewicz; [mneylon@eqt.com](mailto:mneylon@eqt.com)  
**Subject:** Mountain Valley Pipelin - Revised Bat Study Plan

Hello Troy and Sumalee,

On 6 March 2015, ESI submitted a revised version of the Bat Study Plan for the proposed Mountain Valley Pipeline Project in which your comments/suggestions were incorporated. Since your last review, we have added additional survey efforts to cover proposed alternatives, access roads, and aboveground facilities. Please provide any new comments or suggestions at your convenience.

Thanks,

Valerie



Valerie Clarkston



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE



Virginia Field Office  
6669 Short Lane  
Gloucester, VA 23061

April 3, 2015

Ms. Valerie Clarkston  
Environmental Solutions & Innovations, Inc.  
4525 Este Avenue  
Cincinnati, OH 45232

Re: Mountain Valley Pipeline, Virginia  
Segments

Dear Ms. Clarkston:

The U.S. Fish and Wildlife Service (Service) has reviewed the project package for the referenced project. Mountain Valley Pipeline plans to construct a 42-inch diameter natural gas pipeline to allow producers and end-users a direct route to transport new gas supplies. The project will extend from the existing Equitrans transmission system near Mobley in Wetzel County, WV to Transcontinental Gas Pipeline Company's Zone 5 compressor station 165 in Pittsylvania County, VA. In Virginia, the pipeline is expected to cross Craig, Franklin, Giles, Montgomery, Pittsylvania, and Roanoke Counties. The following comments are provided under provisions of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended, Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250), as amended, and Migratory Bird Treaty Act of 1940 (16 U.S.C. 703-712, 40 Stat. 755).

Our recommendations are based on the route alignment provided on March 6, 2015. Once the action area of the project is finalized, an additional review that includes all attendant facilities, staging areas, etc. will be necessary. Action area refers to all areas directly or indirectly affected by the proposed action and not only the immediate area involved in the action.

Migratory birds are a Federal trust resource and are protected under the Migratory Bird Treaty Act. The project package did not include information on proposed impacts to migratory birds and their habitats. The Service will provide additional comments upon receipt of a plan that identifies and addresses impacts to migratory birds.

We recommend a detailed habitat assessment be conducted for the federally listed and proposed species below within the specified areas of potential habitat. An approved surveyor can conduct these habitat assessments in the action area to identify suitable habitat and survey for the species

if suitable habitat is identified. Surveys are not needed if the approved surveyor determines that no suitable habitat is present.

A table of optimal survey times for plants can be found on our website at:

[http://www.fws.gov/northeast/virginiafield/pdf/endspecies/MISC/20120125\\_VIRGINIA\\_survey\\_time\\_frame\\_for\\_plants.pdf](http://www.fws.gov/northeast/virginiafield/pdf/endspecies/MISC/20120125_VIRGINIA_survey_time_frame_for_plants.pdf).

A list of qualified surveyors can be found on our website at:

<http://www.fws.gov/northeast/virginiafield/endspecies/surveyors.html>. This list does not include all individuals qualified or authorized to survey for these species. If you select someone not on the pre-approved surveyor list, provide the proposed surveyor's qualifications and proposed survey design to this office for review and approval prior to initiating the survey. Send copies of all habitat assessments and/or survey results to this office.

- James spinymussel (*Pleurobema collina*): federally listed endangered. We have reviewed the study plan entitled, "Freshwater mussel (Unionidae) site assessments, surveys, and relocations for the proposed Mountain Valley Pipeline in Virginia." Because this species has been documented in Craig, Johns, Little Oregon, and Dicks Creeks in Virginia, presence/absence surveys are not necessary in these streams. Habitat assessments are necessary for other perennial streams in the Craig Creek watershed in Craig County. We recommend that alternative routes be developed that avoid this watershed due to its importance to the conservation and recovery of this species. Formal consultation pursuant to the Endangered Species Act between the Service and Federal Energy Regulatory Commission is likely if this route or other routes in this watershed are pursued. Any relocation of federally listed mussels must be authorized by the Service prior to relocation. This species also occurs in South Fork Potts Creek in West Virginia and coordination with Service's West Virginia Field Office is necessary (see contact information below).
- Roanoke logperch (*Percina rex*): federally listed endangered. Because this species has been documented in the Pigg, Roanoke, and North Fork Roanoke Rivers, presence/absence surveys are not necessary in these rivers. Habitat assessments are necessary for other perennial streams in the Roanoke River watershed in Montgomery, Roanoke, Franklin, and Pittsylvania Counties.
- Northeastern bulrush (*Scirpus ancistrochaetus*): federally listed endangered. Potential habitat occurs in Craig and Giles Counties between points -80.237, 37.416 and -80.246, 37.42; -80.284, 37.387 and -80.287, 37.392; and -80.688, 37.392 and -80.693, 37.402.
- Smooth coneflower (*Echinacea laevigata*): federally listed endangered. Potential habitat occurs in Roanoke and Montgomery Counties between points -80.364, 37.275 and -80.329, 37.268; 80.242, 37.319 and -80.243, 37.316; -80.21, 37.246 and -80.202, 37.242; and 80.198, 37.229 and 80.197, 37.227.



- Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*): federally listed endangered. Potential habitat occurs in Franklin and Montgomery Counties.
  
- Bats
  - Surveys for potential hibernacula including cave openings and cave-like structures (e.g., abandoned or active mines, railroad tunnels) should be conducted following the guidance on page B3 of the Northern Long-Eared Bat Interim Conference and Planning Guidance within the action area of the proposed pipeline route. This guidance is available at:  
<http://www.fws.gov/Midwest/endangered/mammals/nlba/pdf/NLEBinterimGuidance6Jan2014.pdf>.
  
  - In areas where tree removal will occur, surveys should be conducted by an approved surveyor following the most recent version of the Range-wide Indiana Bat Summer Survey Guidelines (available at:  
<http://www.fws.gov/northeast/virginiafield/endangered/about.html>) for the following species in the areas specified below within suitable habitat.
    - Indiana bat (*Myotis sodalis*): federally listed endangered. Potential habitat occurs in Giles, Montgomery, Roanoke, and Craig Counties.
  
    - Northern long-eared bat (*Myotis septentrionalis*) (NLEB): federally proposed endangered (effective May 2, 2015 this species will be federally listed threatened with an interim 4(d) rule). Potential habitat occurs in Franklin, Giles, Montgomery, Pittsylvania, Roanoke, and Craig Counties.
  
    - The proposed route intersects with Tawneys Cave in Giles County, a known hibernaculum for Indiana and Northern long-eared bats. We recommend a minimum 5 mile buffer from the known hibernaculum opening and any mapped passages.
  
  - Specific comments on the revised study plan dated March 6, 2015:
    - Page 4 – Per page B5 of the NLEB Interim Conference and Planning Guidance, revise the description as follows, “a field survey, where access can be obtained, of all land within one-half mile of the edge of the project footprint and documentation (i.e., literature search) of all known caves and abandoned mine portals within 3 miles of the outside edge of the project footprint should be conducted.”
  
    - Page 5 – Per page B6 of the NLEB Interim Conference and Planning Guidance, if you plan to conduct spring portal/cave surveys they must be conducted between April 1 and April 21 and prior to any tree clearing. A minimum of three nights of sampling per week for three weeks (i.e., 9

nights of sampling) is required at each suitable entrance as determined by the Phase 1 Habitat Assessment. Your study plan proposes two evenings of sampling. Fall portal/cave surveys can be conducted rather than spring surveys. Per page B5 of the NLEB Guidance, surveys must be conducted between September 1 and October 31 and prior to any tree clearing. A minimum of two nights of sampling is required at each suitable entrance as determined by the Phase 1 Habitat Assessment.

- Page 5 - Per page B6 of the NLEB Interim Conference and Planning Guidance, harp traps and/or mist nets should be monitored for captured bats on 10-minute intervals. Your study plan states “traps are checked at least once per hour or continuously if the catch rate is greater than 25 bats per hour.” Change your plan to reflect the NLEB Interim Guidance.
- Address and incorporate comments the Service provided on November 26, 2014 on the study plan dated November 3, 2014. Specifically comments: SH10, SH11, SH12, and SH13.

To assist us in analyzing effects to federally listed and proposed species from the proposed action, provide the following information to this office:

- For proposed stream crossings where federally listed species are present, provide us an analysis that outlines all alternatives considered for that crossing, how the determination was made that the selected alternative was the least environmentally damaging, an analysis of effects to the stream anticipated due to the pipeline approaches to each side of the stream, and the proposed schedule/timing of the crossing. If boring or drilling is proposed, provide a best professional opinion on the likelihood that drilling fluids will escape through the bedrock to the stream.

To avoid and minimize impacts to federally listed and proposed species, incorporate the following conservation measures into the proposed project:

- To address impacts to summer bat habitat (see Appendix D of the NLEB Interim Conference and Planning Guidance): leave dead or dying trees standing (if not a safety hazard), maintain or improve forest patches and forested connections (e.g., hedgerows, riparian corridors) between patches, clearly demarcate trees to be protected vs. cut to help ensure contractors do not accidentally remove more trees than anticipated, avoid/minimize tree clearing that fragments large forested areas or tree lined corridors (e.g., route linear features along the edge of a woodlot instead of through the middle).

We recommend that you contact Liz Stout (West Virginia Field Office) at 304-636-6586 or [elizabeth\\_stout@fws.gov](mailto:elizabeth_stout@fws.gov) to coordinate the portions of the project in West Virginia.

Once the action area of the project is finalized, an additional review that includes all attendant facilities, staging areas, etc. will be necessary. If habitat assessments and/or surveys determine that suitable habitat for listed or proposed species are present, this office will work with you to ensure that the project avoids or minimizes adverse impact to listed species and their habitats.

If you have any questions, please contact Kim Smith at (804) 824-2410 or via email at [kimberly\\_smith@fws.gov](mailto:kimberly_smith@fws.gov).

Sincerely,

FOR Cindy Schulz  
Field Supervisor  
Virginia Ecological Services

cc: FERC, Washington, D.C. (Attn: Paul Friedman)  
Service, Elkins, WV (Attn: Liz Stout)  
VDCR-DNH, Richmond, VA (Attn: Rene Hypes)  
VDGIF, Richmond, VA (Attn: Amy Ewing)

## Valerie Clarkston

---

**Subject:** FW: Mountain Valley Pipeline - Bat Study Plan Comments and Figures

**From:** Smith, Kimberly [[mailto:kimberly\\_smith@fws.gov](mailto:kimberly_smith@fws.gov)]

**Sent:** Monday, April 13, 2015 4:04 PM

**To:** Taina Pankiewicz

**Cc:** Hoskin, Sumalee; Troy Andersen ([troy\\_andersen@fws.gov](mailto:troy_andersen@fws.gov)); Daniel Judy; Valerie Clarkston

**Subject:** Re: Mountain Valley Pipeline - Bat Study Plan Comments and Figures

Our phones have been down all afternoon.

On Mon, Apr 13, 2015 at 3:58 PM, Taina Pankiewicz <[TPankiewicz@envsi.com](mailto:TPankiewicz@envsi.com)> wrote:

Hey Gloucester USFWS Folks,

We keep trying to call your office today but keep getting a dial tone. I like to think I'm a smart lady, and up until today, I thought that I had mastered phone dialing. But it appears I may have been mistaken. Any advice for the phone challenged?

Taina



**Taina Pankiewicz**

President, COO

Environmental Solutions & Innovations, Inc.

4525 Este Avenue | Cincinnati, OH 45232 | USA

**office:** 513.451.1777 **direct:** 513.591.4311

**fax:** 513.451.3321 **cell:** 513.910.1676

[tpankiewicz@envsi.com](mailto:tpankiewicz@envsi.com) | [www](http://www)

## Valerie Clarkston

---

**From:** Valerie Clarkston  
**Sent:** Tuesday, April 21, 2015 10:02 AM  
**To:** Kimberly\_Smith@fws.gov; troy\_andersen@fws.gov; Sumalee\_Hoskin@fws.gov (Sumalee\_Hoskin@fws.gov)  
**Cc:** Taina Pankiewicz; mneylon@eqt.com; Daniel Judy; Sean.Sparks@tetrattech.com  
**Subject:** RE: Mountain Valley Pipeline Project PF15-3

Hello Kim, Troy, and Sumalee,

We have attempted to contact you by phone to discuss VA USFWS comments regarding the endangered bat study plan and for clarification regarding endangered bat buffers. We intend to address all comments and re-submit the finalized version of the bat study plan as soon as possible.

For all ground surveys, ESI will search out to USFWS specified distances, *where access can be obtained*, for caves, abandoned mine portals, and potential roosts trees.

USFWS recommends using a 5-mile protective buffer around Tawney's Cave and mapped passages. Could USFWS provide us this buffer so we can accurately adjust our netting efforts?

Are there any northern long-eared bat buffers which intersect the MVP project? If so, would it be possible to obtain these to better determine our netting effort? To confirm, will clearing restrictions occur within 1.5-miles of known NLEB roosts and within 3 miles of NLEB captures not associated with roosts?

Any clarification would be much appreciated!

Thanks,

Valerie

**Valerie Clarkston**  
Scientist  
*Environmental Solutions & Innovations, Inc.*  
4525 Este Avenue  
Cincinnati, OH 45232  
Office 513.451.1777  
Mobile 513.382.0925

**From:** Smith, Kimberly [[mailto:kimberly\\_smith@fws.gov](mailto:kimberly_smith@fws.gov)]  
**Sent:** Friday, April 03, 2015 4:44 PM  
**To:** Valerie Clarkston  
**Cc:** Elizabeth Stout; Amy Ewing; [Rene.Hypes@dcr.virginia.gov](mailto:Rene.Hypes@dcr.virginia.gov); [paul.friedman@ferc.gov](mailto:paul.friedman@ferc.gov)  
**Subject:** Mountain Valley Pipeline Project PF15-3

Please see attached comments.

Kim

## Valerie Clarkston

---

**From:** Valerie Clarkston  
**Sent:** Monday, April 27, 2015 9:29 AM  
**To:** troy\_andersen@fws.gov; Sumalee\_Hoskin@fws.gov (Sumalee\_Hoskin@fws.gov); Kimberly\_Smith@fws.gov  
**Cc:** Daniel Judy; mneylon@eqt.com  
**Subject:** Mountain Valley Pipeline - Revised Bat Study Plan  
**Attachments:** 593 MVP VIRGINIA ONLY Bat Study Plan Revised 24 April 2015 (reduced for email).pdf

Hello Troy, Sumalee, and Kim,

A hard copy of the *REVISED STUDY PLAN: LISTED BAT STUDIES ALONG MVP'S PROPOSED MOUNTAIN VALLEY PIPELINE PROJECT IN CRAIG, FRANKLIN, GILES, MONTGOMERY, PITTSYLVANIA, AND ROANOAKE COUNTIES, VIRGINIA* was mailed to the Gloucester Field Office last Friday and should arrive this morning. An electronic version (PDF) is attached to this email.

This revised study plan includes revisions based on comments received from the USFWS Gloucester Field Office on 3 April 2015 and from VDGIF on 27 March 2015 as well as the inclusion of a 5-mile protective buffer around Tawney's Cave. Unlike previous versions, this study plan and contents are specific to Virginia. The proposed level of effort for the mist net survey has been updated accordingly.

Please do not hesitate to contact us with any questions.

Thanks,

Valerie



**Valerie Clarkston**

Scientist

Environmental Solutions & Innovations, Inc.  
4525 Este Avenue | Cincinnati, Ohio 45232 | USA

**office:** 513.451.1777 **direct:** 513.591.4315

**fax:** 513.451.3321 **cell:** 513.382.0925

[vclarkston@envsi.com](mailto:vclarkston@envsi.com) | [www](http://www.envsi.com)

## Valerie Clarkston

---

**Subject:** FW: Mountain Valley Pipeline - Revised Bat Study Plan

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**From:** Sumalee Hoskin [[mailto:sumalee\\_hoskin@fws.gov](mailto:sumalee_hoskin@fws.gov)]  
**Sent:** Friday, May 08, 2015 3:23 PM  
**To:** Valerie Clarkston; Troy Andersen; Kimberly Smith  
**Cc:** Daniel Judy; [mneylon@egt.com](mailto:mneylon@egt.com); Taina Pankiewicz  
**Subject:** RE: Mountain Valley Pipeline - Revised Bat Study Plan

Valerie,

This message responds to your request for comments on the revised study plan: “Listed Bat Studies Along MVP’s Proposed Mountain Valley Pipeline Project in Craig, Franklin, Giles, Montgomery, Pittsylvania, and Roanoke Counties, Virginia” dated April 24, 2015. The following comments are provided under provisions of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended.

Your proposed bat survey plan follows the U.S. Fish and Wildlife Service’s April 2015 Rangewide Indiana Bat Summer Survey Guidance and the June 25, 2012 White Nose Syndrome Decontamination Protocol. We concur with your proposed plan for the Virginia portion of the bat survey.

Sumalee

\*\*\*\*\*  
Sumalee Hoskin  
US Fish & Wildlife Service  
6669 Short Lane  
Gloucester, VA 23061

Tel: 804-693-6694 ex. 2414

Fax: 804-693-9032

Cell: 804-654-1824

Visit us at <http://www.fws.gov/northeast/virginiafield/>

## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Wednesday, June 17, 2015 1:00 PM  
**To:** Tiernan Lennon (tiernan\_lennon@fws.gov); Sumalee Hoskin (sumalee\_hoskin@fws.gov);  
ernie.aschenbach@dgif.virginia.gov; Barbara Sargent (barbara.d.sargent@wv.gov);  
'projectreview@dgif.virginia.gov'  
**Cc:** Taina Pankiewicz; Valerie Clarkston; 'MNeylon@eqt.com'; Sparks, Sean  
**Subject:** Mountain Valley Pipeline: Myotis septentrionalis capture report  
**Attachments:** ESI\_PN593\_Bat\_Capture\_Reporting\_Table\_20150616.xlsx

Good Afternoon –

As required, please find attached a spreadsheet outlining capture information for three (3) northern long-eared bats from survey efforts last night. Two pregnant NLEB were captured in Harrison County, West Virginia and one lactating NLEB was captured in Montgomery County, Virginia. A radio-transmitter was only attached to the lactating NLEB.

Please contact us if you have any questions or require additional information.

Thank you,



**Daniel J. Judy**

Southeast Regional Manager

Environmental Solutions & Innovations, Inc.  
2250 Lucien Way, Suite 302 | Maitland, FL 32751  
**office:** 321.972.3958 | **direct:** 513.591.4339  
**fax:** 321.972.3959 | **cell:** 407.269.7492  
[djudy@envsi.com](mailto:djudy@envsi.com) | [www.envsi.com](http://www.envsi.com)



## Daniel Judy

---

**From:** Sumalee Hoskin <sumalee\_hoskin@fws.gov>  
**Sent:** Wednesday, June 17, 2015 1:13 PM  
**To:** Daniel Judy; Tiernan Lennon; ernie.aschenbach@dgif.virginia.gov; Barbara Sargent; projectreview@dgif.virginia.gov  
**Cc:** Taina Pankiewicz; Valerie Clarkston; MNeylon@eqt.com; Sparks, Sean  
**Subject:** RE: Mountain Valley Pipeline: Myotis septentrionalis capture report

Thank you for the update. We look forward to hearing the results of the radio tracking efforts.

\*\*\*\*\*

Sumalee Hoskin  
US Fish & Wildlife Service  
6669 Short Lane  
Gloucester, VA 23061

Tel: 804-693-6694 ex. 2414

Fax: 804-693-9032

Cell: 804-654-1824

Visit us at <http://www.fws.gov/northeast/virginiafield/>

---

**From:** Daniel Judy [mailto:[djudy@envsi.com](mailto:djudy@envsi.com)]  
**Sent:** Wednesday, June 17, 2015 1:00 PM  
**To:** Tiernan Lennon ([tiernan\\_lennon@fws.gov](mailto:tiernan_lennon@fws.gov)); Sumalee Hoskin ([sumalee\\_hoskin@fws.gov](mailto:sumalee_hoskin@fws.gov)); [ernie.aschenbach@dgif.virginia.gov](mailto:ernie.aschenbach@dgif.virginia.gov); Barbara Sargent ([barbara.d.sargent@wv.gov](mailto:barbara.d.sargent@wv.gov)); [projectreview@dgif.virginia.gov](mailto:projectreview@dgif.virginia.gov)  
**Cc:** Taina Pankiewicz; Valerie Clarkston; [MNeylon@eqt.com](mailto:MNeylon@eqt.com); Sparks, Sean  
**Subject:** Mountain Valley Pipeline: Myotis septentrionalis capture report

Good Afternoon –

As required, please find attached a spreadsheet outlining capture information for three (3) northern long-eared bats from survey efforts last night. Two pregnant NLEB were captured in Harrison County, West Virginia and one lactating NLEB was captured in Montgomery County, Virginia. A radio-transmitter was only attached to the lactating NLEB.

Please contact us if you have any questions or require additional information.

Thank you,



**Daniel J. Judy**

Southeast Regional Manager

Environmental Solutions & Innovations, Inc.  
2250 Lucien Way, Suite 302 | Maitland, FL 32751  
**office:** 321.972.3958 | **direct:** 513.591.4339  
**fax:** 321.972.3959 | **cell:** 407.269.7492  
[djudy@envsi.com](mailto:djudy@envsi.com) | [www.envsi.com](http://www.envsi.com)

## Daniel Judy

---

**From:** Daniel Judy  
**Sent:** Thursday, July 30, 2015 4:58 PM  
**To:** 'Hoskin, Sumalee'  
**Subject:** RE: Mountain Valley Pipeline: Myotis septentrionalis capture report

You're welcome.

*Pinus resinosa*. Dead. About 16 feet off ground. Five bats emerged the first night, zero bats on the second night. The bat shed the transmitter that night.

Daniel J. Judy  
Environmental Solutions and Innovations  
407.269.7492

**From:** Hoskin, Sumalee [mailto:sumalee\_hoskin@fws.gov]  
**Sent:** Thursday, July 30, 2015 2:58 PM  
**To:** Daniel Judy <djudy@envsi.com>  
**Subject:** Re: Mountain Valley Pipeline: Myotis septentrionalis capture report

The map came through, thanks. Are they doing emergent surveys on the tree, and do you the species of tree(s)?

On Thu, Jul 30, 2015 at 1:53 PM, Daniel Judy <[djudy@envsi.com](mailto:djudy@envsi.com)> wrote:

Please let me know if this works.

Thanks,

Daniel J. Judy  
Environmental Solutions and Innovations  
407.269.7492

---

**From:** Sumalee Hoskin [mailto:[sumalee\\_hoskin@fws.gov](mailto:sumalee_hoskin@fws.gov)]  
**Sent:** Thursday, July 30, 2015 1:12 PM  
**To:** Daniel Judy <[djudy@envsi.com](mailto:djudy@envsi.com)>  
**Subject:** RE: Mountain Valley Pipeline: Myotis septentrionalis capture report

Judy,

Can you provide an update on the radio tracking of the lactating female?

Thank you,

Sumalee

\*\*\*\*\*

Sumalee Hoskin  
US Fish & Wildlife Service  
6669 Short Lane  
Gloucester, VA 23061

Tel: 804-693-6694 ex. 2414

Fax: 804-693-9032

Cell: 804-654-1824

Visit us at <http://www.fws.gov/northeast/virginiafield/>

---

**From:** Daniel Judy [mailto:[djudy@envsi.com](mailto:djudy@envsi.com)]

**Sent:** Wednesday, June 17, 2015 1:00 PM

**To:** Tiernan Lennon ([tiernan\\_lennon@fws.gov](mailto:tiernan_lennon@fws.gov)); Sumalee Hoskin ([sumalee\\_hoskin@fws.gov](mailto:sumalee_hoskin@fws.gov)); [ernie.aschenbach@dgif.virginia.gov](mailto:ernie.aschenbach@dgif.virginia.gov); Barbara Sargent ([barbara.d.sargent@wv.gov](mailto:barbara.d.sargent@wv.gov)); [projectreview@dgif.virginia.gov](mailto:projectreview@dgif.virginia.gov)

**Cc:** Taina Pankiewicz; Valerie Clarkston; [MNeylon@egt.com](mailto:MNeylon@egt.com); Sparks, Sean

**Subject:** Mountain Valley Pipeline: Myotis septentrionalis capture report

Good Afternoon –

As required, please find attached a spreadsheet outlining capture information for three (3) northern long-eared bats from survey efforts last night. Two pregnant NLEB were captured in Harrison County, West Virginia and one lactating NLEB was captured in Montgomery County, Virginia. A radio-transmitter was only attached to the lactating NLEB.

Please contact us if you have any questions or require additional information.

Thank you,

|

---

**Daniel J. Judy**



Southeast Regional Manager

Environmental Solutions & Innovations, Inc.

2250 Lucien Way, Suite 302 | Maitland, FL 32751

**office:** 321.972.3958 | **direct:** 513.591.4339

**fax:** 321.972.3959 | **cell:** 407.269.7492

[djudy@envsi.com](mailto:djudy@envsi.com) | [www.envsi.com](http://www.envsi.com)

--

**NOTE: MY EXTENSION HAS CHANGED**

\*\*\*\*\*

Sumalee Hoskin  
US Fish & Wildlife Service  
6669 Short Lane  
Gloucester, VA 23061

Tel: 804-693-6694 ex. 2414

Fax: 804-693-9032

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## Daniel Judy

---

**From:** Valerie Clarkston  
**Sent:** Wednesday, June 17, 2015 3:43 PM  
**To:** Smith, Kimberly  
**Cc:** Valerie Clarkston; Troy Andersen; Daniel Judy; Taina Pankiewicz  
**Subject:** Re: Mountain Valley Pipeline Rare plant study plan

Thank you Kim!

Valerie Clarkston  
Scientist  
Environmental Solutions & Innovations, Inc.  
4525 Este Avenue  
Cincinnati, Ohio 45232  
Cell: (513-382-0925)  
Office: (513-451-1777)

On Jun 17, 2015, at 3:33 PM, Smith, Kimberly <[kimberly\\_smith@fws.gov](mailto:kimberly_smith@fws.gov)> wrote:

We have reviewed the study plan entitled “Habitat assessment and surveys for rare plants along the Mountain Valley Pipeline Project in Virginia and West Virginia dated June 3, 2015 for the referenced project. The following comments are provided under provisions of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended and only apply to Virginia.

We concur with the proposed study plan. In addition to our previous comments, we support the Virginia Department of Conservation and Recreation – Division of Natural Heritage comments and also recommend surveying the 11-acre proposed Route 81 wareyard for the federally listed endangered smooth coneflower (*Echinacea laevigata*). Should project plans change or if additional information on the distribution of listed species or critical habitat becomes available, this determination may be reconsidered. If you have any questions, please contact me.

--

Kimberly Smith  
Fish and Wildlife Biologist  
U.S. Fish & Wildlife Service  
6669 Short Lane  
Gloucester, VA 23061  
[Kimberly\\_Smith@fws.gov](mailto:Kimberly_Smith@fws.gov)  
804-824-2410  
<http://www.fws.gov/northeast/virginiafield/>

## Daniel Judy

---

**From:** Taina Pankiewicz  
**Sent:** Tuesday, August 25, 2015 3:58 PM  
**To:** Ernie.Aschenbach@dgif.virginia.gov; Sumalee Hoskin (sumalee\_hoskin@fws.gov)  
**Cc:** Neylon, Megan (MNeylon@eqt.com); Daniel Judy; Troy Andersen (troy\_andersen@fws.gov); rick.reynolds@dgif.virginia.gov; Valerie Clarkston  
**Subject:** Meeting to discuss MVP

Hi Ernie and Sumalee,

Now that the summer mist net survey window has ended, we would like to have a meeting with you to discuss the results of the survey and the project path forward in terms of ESA consultation and the bats.

We are meeting in West Virginia on September 10<sup>th</sup> and would be very grateful if you might have time to meet with us on either the 9<sup>th</sup> or 11<sup>th</sup>; however we do understand your schedule is busy and if need to be some other time in early September, we will accommodate whatever date works for you.

Thanks much for your time!

Taina



**Taina Pankiewicz**

President, COO

Environmental Solutions & Innovations, Inc.  
4525 Este Avenue | Cincinnati, OH 45232 | USA  
**office:** 513.451.1777 **direct:** 513.591.4311  
**fax:** 513.451.3321 **cell:** 513.910.1676  
[tpankiewicz@envsi.com](mailto:tpankiewicz@envsi.com) | [www](http://www)

## Daniel Judy

---

**From:** Taina Pankiewicz  
**Sent:** Friday, August 28, 2015 3:34 PM  
**To:** Sumalee Hoskin; Ernie.Aschenbach@dgif.virginia.gov  
**Cc:** Neylon, Megan; Troy Andersen; rick.reynolds@dgif.virginia.gov; Valerie Clarkston; Sean.Sparks@tetrattech.com  
**Subject:** RE: Meeting to disucss MVP

I think the 9<sup>th</sup> would work best for us. Is sometime in the afternoon available? If not, we can do morning but I thought I would ask. Also, I assume this will be in Gloucester, but wanted to confirm?

T

---

**From:** Sumalee Hoskin [mailto:sumalee\_hoskin@fws.gov]  
**Sent:** Friday, August 28, 2015 1:30 PM  
**To:** Taina Pankiewicz; Ernie.Aschenbach@dgif.virginia.gov  
**Cc:** Neylon, Megan; Daniel Judy; Troy Andersen; rick.reynolds@dgif.virginia.gov; Valerie Clarkston  
**Subject:** RE: Meeting to disucss MVP

Either the 9<sup>th</sup> or the 11<sup>th</sup> will work.

\*\*\*\*\*

Sumalee Hoskin  
US Fish & Wildlife Service  
6669 Short Lane  
Gloucester, VA 23061

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Fax: 804-693-9032

Cell: 804-654-1824

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---

**From:** Taina Pankiewicz [mailto:[TPankiewicz@envsi.com](mailto:TPankiewicz@envsi.com)]  
**Sent:** Tuesday, August 25, 2015 3:58 PM  
**To:** [Ernie.Aschenbach@dgif.virginia.gov](mailto:Ernie.Aschenbach@dgif.virginia.gov); Sumalee Hoskin ([sumalee\\_hoskin@fws.gov](mailto:sumalee_hoskin@fws.gov))  
**Cc:** Neylon, Megan ([MNeylon@egt.com](mailto:MNeylon@egt.com)); Daniel Judy; Troy Andersen ([troy\\_andersen@fws.gov](mailto:troy_andersen@fws.gov)); [rick.reynolds@dgif.virginia.gov](mailto:rick.reynolds@dgif.virginia.gov); Valerie Clarkston  
**Subject:** Meeting to disucss MVP

Hi Ernie and Sumalee,

Now that the summer mist net survey window has ended, we would like to have a meeting with you to discuss the results of the survey and the project path forward in terms of ESA consultation and the bats.

We are meeting in West Virginia on September 10<sup>th</sup> and would be very grateful if you might have time to meet with us on either the 9<sup>th</sup> or 11<sup>th</sup>; however we do understand your schedule is busy and if need to be some other time in early September, we will accommodate whatever date works for you.

Thanks much for your time!

Taina



**Taina Pankiewicz**

President, COO

Environmental Solutions & Innovations, Inc.  
4525 Este Avenue | Cincinnati, OH 45232 | USA  
**office:** 513.451.1777 **direct:** 513.591.4311  
**fax:** 513.451.3321 **cell:** 513.910.1676  
[tpankiewicz@envsi.com](mailto:tpankiewicz@envsi.com) | [www](http://www)



## Daniel Judy

---

**From:** Taina Pankiewicz  
**Sent:** Monday, August 31, 2015 6:06 PM  
**To:** Sumalee Hoskin; Aschenbach, Ernie (DGIF); Sean.Sparks@tetrattech.com; Valerie Clarkston; Troy Andersen; Neylon, Megan  
**Cc:** Reynolds, Rick (DGIF); Fernald, Ray (DGIF); ProjectReview (DGIF); Watson, Susan (DGIF); Virgil Brack; Casey Swecker  
**Subject:** RE: ESSLog 35246; Mountain Valley Pipeline - Meeting to disucss MVP

OK. 10 am in Richmond. We will see everyone there!

Taina

---

**From:** Sumalee Hoskin [mailto:sumalee\_hoskin@fws.gov]  
**Sent:** Monday, August 31, 2015 5:44 PM  
**To:** Aschenbach, Ernie (DGIF); Taina Pankiewicz; Sean.Sparks@tetrattech.com; Valerie Clarkston; Troy Andersen; Neylon, Megan  
**Cc:** Reynolds, Rick (DGIF); Fernald, Ray (DGIF); ProjectReview (DGIF); Watson, Susan (DGIF)  
**Subject:** RE: ESSLog 35246; Mountain Valley Pipeline - Meeting to disucss MVP

We're happy to travel to Richmond. I would prefer the morning beginning around 10am if possible.

\*\*\*\*\*

Sumalee Hoskin  
US Fish & Wildlife Service  
6669 Short Lane  
Gloucester, VA 23061

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Fax: 804-693-9032

Cell: 804-654-1824

Visit us at <http://www.fws.gov/northeast/virginiafield/>

---

**From:** Aschenbach, Ernie (DGIF) [mailto:[Ernie.Aschenbach@dgif.virginia.gov](mailto:Ernie.Aschenbach@dgif.virginia.gov)]  
**Sent:** Monday, August 31, 2015 12:17 PM  
**To:** Taina Pankiewicz; Sumalee Hoskin; [Sean.Sparks@tetrattech.com](mailto:Sean.Sparks@tetrattech.com); Valerie Clarkston; Troy Andersen; Neylon, Megan  
**Cc:** Reynolds, Rick (DGIF); Fernald, Ray (DGIF); ProjectReview (DGIF); Watson, Susan (DGIF)  
**Subject:** ESSLog 35246; Mountain Valley Pipeline - Meeting to disucss MVP  
**Importance:** High

Since we are centrally located, I reserved a meeting room at DGIF HQ for the entire day. Our new address is provided below.

**Meeting date:** September 9, 2015

**Time:** TBD

**Location:** DGIF HQ; 7870 Villa Park Dr, Suite 400; Henrico, VA 23228

**Agenda:** To be provided by others. General theme, bat survey (ESA consultation and the bats) for above-referenced project.

I will rely on others to provide the **agenda and amount of time necessary for discussion**. If an alternative meeting site is preferable, please notify me and I will cancel my reservation.

After receiving this info, we can circulate an updated meeting invitation with the start- & end-time, and agenda. Thanks.

Ernie Aschenbach  
Environmental Services Biologist  
Virginia Dept. of Game and Inland Fisheries  
Phone: (804) 367-2733  
Email: [Ernie.Aschenbach@dgif.virginia.gov](mailto:Ernie.Aschenbach@dgif.virginia.gov)

***We moved! Our new address is:***

Physical  
7870 Villa Park Dr, Suite 400  
Henrico, VA 23228

Mailing  
P O Box 90778  
Henrico, VA 23228

---

**From:** Taina Pankiewicz [<mailto:TPankiewicz@envsi.com>]  
**Sent:** Friday, August 28, 2015 3:34 PM  
**To:** Sumalee Hoskin; Aschenbach, Ernie (DGIF)  
**Cc:** Neylon, Megan; Troy Andersen; Reynolds, Rick (DGIF); Valerie Clarkston; [Sean.Sparks@tetrattech.com](mailto:Sean.Sparks@tetrattech.com)  
**Subject:** RE: Meeting to disucss MVP

I think the 9<sup>th</sup> would work best for us. Is sometime in the afternoon available? If not, we can do morning but I thought I would ask. Also, I assume this will be in Gloucester, but wanted to confirm?

T

---

**From:** Sumalee Hoskin [[mailto:sumalee\\_hoskin@fws.gov](mailto:sumalee_hoskin@fws.gov)]  
**Sent:** Friday, August 28, 2015 1:30 PM  
**To:** Taina Pankiewicz; [Ernie.Aschenbach@dgif.virginia.gov](mailto:Ernie.Aschenbach@dgif.virginia.gov)  
**Cc:** Neylon, Megan; Daniel Judy; Troy Andersen; [rick.reynolds@dgif.virginia.gov](mailto:rick.reynolds@dgif.virginia.gov); Valerie Clarkston  
**Subject:** RE: Meeting to disucss MVP

Either the 9<sup>th</sup> or the 11<sup>th</sup> will work.

\*\*\*\*\*

Sumalee Hoskin  
US Fish & Wildlife Service  
6669 Short Lane  
Gloucester, VA 23061

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**From:** Taina Pankiewicz [<mailto:TPankiewicz@envsi.com>]  
**Sent:** Tuesday, August 25, 2015 3:58 PM  
**To:** [Ernie.Aschenbach@dgif.virginia.gov](mailto:Ernie.Aschenbach@dgif.virginia.gov); Sumalee Hoskin ([sumalee\\_hoskin@fws.gov](mailto:sumalee_hoskin@fws.gov))  
**Cc:** Neylon, Megan ([MNeylon@eqt.com](mailto:MNeylon@eqt.com)); Daniel Judy; Troy Andersen ([troy\\_andersen@fws.gov](mailto:troy_andersen@fws.gov));

[rick.reynolds@dgif.virginia.gov](mailto:rick.reynolds@dgif.virginia.gov); Valerie Clarkston

**Subject:** Meeting to discuss MVP

Hi Ernie and Sumalee,

Now that the summer mist net survey window has ended, we would like to have a meeting with you to discuss the results of the survey and the project path forward in terms of ESA consultation and the bats.

We are meeting in West Virginia on September 10<sup>th</sup> and would be very grateful if you might have time to meet with us on either the 9<sup>th</sup> or 11<sup>th</sup>; however we do understand your schedule is busy and if need to be some other time in early September, we will accommodate whatever date works for you.

Thanks much for your time!

Taina



**Taina Pankiewicz**

President, COO

Environmental Solutions & Innovations, Inc.  
4525 Este Avenue | Cincinnati, OH 45232 | USA  
**office:** 513.451.1777 **direct:** 513.591.4311  
**fax:** 513.451.3321 **cell:** 513.910.1676  
[tpankiewicz@envsi.com](mailto:tpankiewicz@envsi.com) | [www](http://www)



## TELEPHONE / PERSONAL CONVERSATION REPORT

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**PROJECT NAME:** Mountain Valley Pipeline Project

**MVP ATTENDEES:** Megan Neylon – Mountain Valley Pipeline, LLC  
Lindsay Hesh – Mountain Valley Pipeline, LLC (via phone)  
Sean Sparks – Tetra Tech  
Virgil Brack, Jr., Ph.D. – Environmental Solutions & Innovations, Inc.  
Taina Pankiewicz – Environmental Solutions & Innovations, Inc.  
Valerie Clarkston – Environmental Solutions & Innovations, Inc.  
John Spaeth – Environmental Solutions & Innovations, Inc.

**CONVERSATION WITH:** Sumalee Hoskin – US Fish & Wildlife Service (via phone)  
Susan Watson – Terrestrial Biologist, Virginia Department of Game & Inland Fisheries  
Ray Fernald – Program Manager, Virginia Department of Game & Inland Fisheries  
Rick Reynolds – Virginia Department of Game & Inland Fisheries  
Ernie Aschenbach – Virginia Department of Game & Inland Fisheries  
Renee Hypes – Virginia Department of Conservation and Recreation, Natural Heritage (via phone)  
Chris Hobson – Virginia Department of Conservation and Recreation, Natural Heritage (via phone)

**AGENCY:** USFWS/VDGIF/VDCR

**EMAIL ADDRESS:**

**PHONE NUMBER:**

**SUBJECT:** VA T&E Species Field Surveys and Consultation

**DATE AND TIME:** 9/09/15 10:00am

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### SUMMARY OF CONVERSATION:

Megan: Project Overview. ~ 300 miles. 2 BCF/day. Traverses 16 counties. 4 compressor stations and 4 metering stations. Jan 2017 start clearing and work south. 2018 construction. Study corridor 300', 125' construction ROW. Permanent ROW was originally stated to be 75' in the draft FERC filing but in order to reduce impacts MV has reduced the permanent ROW width to 50' – this will be officially announced with the FERC filing in October 2015. Discussion of routing efforts; original colocation ~ 80%, now at ~ 20 miles due to unconstructability of colocation routes (with powerlines) from side-lay requirements. Most of route is forested until Pittsylvania and Franklin Counties. Certificate in Dec 2016. In service by end of 2018.

Renee Hypes: Do you have a preferred Alignment?



Megan: When we submit our Resource Reports to FERC and it will contain a preferred alternative. All alternates will be addressed in RR 11. FERC will review, provide feedback and approve one route.

Ray: Is USFWS a Cooperating Agency?

Sumalee: No. Our office would like to see a copy of the project's spill plan as well information showing where the pig receiver and other facility locations are.

Megan: OK.

Ray: Is all the pipeline's capacity subscribed?

Megan: The pipeline is almost completely subscribed for 2 BCF/day

Val: Provided overview of results of bat survey results. 197 sites completed. 123 were not able to be surveyed due to land access limitations. A total of 1,455 bats were captured on the project: >50% were big browns. 34 silver haired in VA. 74 Northern long eared bats (NLEB) were captured on the project but only 1 in VA. Of the 74 captured NLEB, 56 had transmitters placed on them and 70 trees were found. The most frequently used species of tree as a roost was red maple (n=27) and second was sugar maple (n=6). The rest were a wide variety of species. Most trees were fairly small in size with the largest at 90 cm. The largest emergence count was 40 bats but there were not many large counts like you would expect to see for Indiana bats.

Rick: Did you catch any juveniles.

Val: Yes. 21. The NLEB caught in VA was a lactating female. For the first 3 days of tracking we were unable to get land access to the roost tree. Once we did get land access she was found in a red pine tree. Only two days of emergence counts were completed before the transmitter was shed.

Sumalee: Why were there unsurveyed areas?

Megan: Lack of land access.

Taina: How should the unsurveyed areas be treated? Do these need to be surveyed next year? If they are unsurveyed, will presence be assumed? Will off season clearing need to be conducted just in these areas or will they be buffered as if a bat was captured?

Sumalee: I would prefer to see the entire project area surveyed.



Megan: Project big picture is related to off-season clearing. We can net the unsurveyed areas next summer. We can also do potentially do winter tree clearing if necessary.

Taina: Three questions related to the unsurveyed areas:

1. Where all (summer and winter) surveys are complete, and negative, is it acceptable for MVP to clear any time of year, without restriction?
2. Where there are known occurrences (Indiana or northern long eared, either summer or winter), is winter time clearing a sufficient avoidance and minimization measure for the species?
3. If there are areas where surveys remain incomplete (either summer or winter, although primarily summer since we anticipate finishing searches for all winter habitat before spring 2016), is seasonal clearing sufficient avoidance and minimization for the species? Would that restriction just apply to the unsurveyed area(s) or would they be buffered similar to an actual occurrence/capture?

Sumalee: I would like to see these questions articulated in writing so that I can be sure that I understand them and answer appropriately.

1. Yes.
2. I am not sure. I need to talk with the karst/cave specialists to understand the underground extent of any caves in the area in relation to the project LOD. Likewise, for summer habitat it depends on the locations of the roost tree(s) and their proximity to the ROW.
3. I don't know. I need to look at the mapping to understand what we're talking about.

Megan: We have hired Draper Aiden and are working directly with Will Orndorf regarding the Karst. Avoiding impacts to karst resources was actually the primary driving force behind the development of Alternative 200.

Virgil: If we find caves, and they are either unsuitable or trapping surveys are negative, then can MVP clear in these areas without a time of year restriction?

Renee: It depends how close it is. We need to make sure that the cave's integrity is not compromised?

Taina: Is there a specific set-back distance that is standard?

Renee: No. We will need to talk to Will Orndorff.

Virgil: If we sample a cave and find bats, then what?



Sumalee: It depends.

Virgil: Are there certain guiding principles that are inviolate?

Sumalee: 1 April – 15 November clearing restriction within 5 miles of the cave. The exact construction distance depends on the cave experts and their insight on the extent of the underground karst system.

Renee: The previous route ran directly over Tawney's Cave and that is a problem.

Megan: Mike Futrell has been talking directly with Will Orndorff and the new route has been modified appropriately. We will be sure to call this out in the bat survey report.

Val: We do still have significant areas unsurveyed for potential hibernacula in Giles and Montgomery counties.

Virgil: Do you have a preference between winter in-cave surveys and spring or autumn cave trapping?

Rick: Northern long eared bats are rarely found in caves during winter so we would prefer not that. Between spring and autumn, we would prefer autumn.

Rick: Is the pipeline above ground?

Sean: No.

Ernie: How much cover will be over the pipe?

Sean: In general 3 feet. In agricultural areas usually 4 feet. In bedrock a minimum of 2 feet.

Sumalee: In the survey report I would like to see the results/data for surveys completed in West Virginia, within 5 miles of the WV/VA state line.

Taina: What format would you like to see for the report? Hardcopy? Electronic? GIS files with linked/embedded data sheets?

Sumalee: Hardcopy with accompanying electronic copy would work.

Renee: If you can include a shape file with the linked/embedded data sheets that would be great for us.



Taina: We will provide USFWS, VADCR, and VDGIF all 1 hardcopy with attached disk/flash drive containing an electronic copy and associated GIS files. All reports will reflect all bat survey data collected within 5 miles of the VA border.

Renee: DCR is interested in any karst features located in the field.

---

Ernie: We were not aware that more than just bats would be discussed and our fish biologist is not here.

Spaeth: I have been coordinating on an ongoing basis with Brian Watson and Mike Pinder and I know Mike is in the field today. Since neither Brian nor Mike are here, I can provide a generalized summary of our survey approach regarding mussels and fishes, and some of the progress made to date. For mussels we are following the study plan we submitted. We are looking at all streams with an upstream drainage area greater than 5 square miles. This is what we coordinated with Brian Watson in Spring, following the VMRC subaqueous guidelines.

The original alternative alignments proposed to traverse the James River drainage. Therefore there were concerns for the James spiny mussel, particularly within Little Oregon, Johns, Dicks, and Craig creeks. The proposed alignment that would have traversed those streams has been eliminated. The newest alignment proposes to traverse Craig Creek in Craig County therefore we plan to perform mussel surveys at this stream.

Prior to performing any mussel site assessments, it was known that abbreviated mussel surveys were necessary at two stream crossings: Stony Creek and Pigg River. In addition, the pipeline will cross the Roanoke River in which we will forego a mussel survey and just perform mussel relocations prior to construction, following the Virginia Draft Mussel Survey Protocol.

Sumalee: In addition to Brian Watson, please coordinate with Kim Smith in our office regarding James spiny mussel. If you have not already, please forward her a copy of the Study Plan you submitted.

Spaeth: So far we have only done site assessments as defined in the draft protocol; we have not done any actual surveys. For fish, there are 44 streams within the Roanoke drainage with the potential to support logperch. We are conducting site visits for each of those streams at the proposed crossing locations to conduct habitat assessments. We have completed 30 to date. There are 3 streams from which the species is previously known: North Fork Roanoke, Roanoke, and Pigg River. To date no actual fish surveys have been completed, only habitat assessments. Full fish surveys will follow VDOT guidelines, which are a full 1 kilometer in stream length.





Sumalee: Kim Smith is the correct person to coordinate with in our office for the logperch. Please provide all correspondence electronically, if possible.

Renee: We prefer electronic correspondence as well.

Spaeth: We will have habitat assessment survey reports ~~before the end of the year~~ by November. We may have some presence/absence surveys completed by then. If we do, those results will be included at that time.

Taina: Can we talk a little bit about the fish removal requirements?

Spaeth: Mike Pinder has told me that VDGIF will want fish removed immediately prior to construction for all streams dewatered.

Ernie: This is standard. Coordinate with Mike regarding all crossings in the Roanoke drainage. Is there any information currently available regarding what crossing methods will be used for which streams?

Megan: We are currently finalizing that information and will make it available as soon as we can.

Sean: It should be finalized within a month and published with the FERC filing.

Virgil: Are there standard avoidance and minimization measures that should be observed for the logperch?

Ernie: There are time of year restrictions that apply to instream work, along with the fish removal / relocation. We will need to know the crossing method for every stream. I assume there will be no directional drilling due to the size of the pipe?

Megan: That is correct. The presence of karst also makes use of HDD difficult. A 42" pipe requires a 63" hole, which has a high probability of collapse. Also, because it is so big, the pipe cannot bend much, which means it requires a long pull back length (1300 feet). MVP is looking at other options, like conventional bore and HK, a company that specializes in subterranean crossing methods. We will definitely coordinate with USFWS/Kim and Will Orndorff regarding any underground activities.

Sumalee: Please copy me

Ernie: Please copy me

Renee: Please copy me



Chris: Please copy me. Chris Hobson, Natural Heritage, [chris.hobson@dcr.va.gov](mailto:chris.hobson@dcr.va.gov). Do you know if you are proposing to impact Pig Hole Cave? The previous route was very close to it. It has a species of arthropod that has not been described before.

Megan: Alternate 200 moves us away from this feature. Karst resources were the driving force behind this alternative.

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Valerie: The only listed plants found during were on the U.S. Forest Service Sensitive Species list. These were the Rock Skull Cap and American Barberry on Jefferson National Forest.

Sumalee: We only need to see the plant survey results from the state of Virginia; nothing in WV.

Ernie: VDGIF does not oversee plants.

Sumalee: Please send a copy of the survey report to USFWS and DCR.

---

Ernie: In general, our office prefers digital submittals. Maps are valuable. Maps and pictures are incredibly valuable. I understand that these files are large and hard to transfer over the internet but they provide valuable information for us in reviewing projects. Our office provided an initial review with general, preliminary recommendations. You have access to WERMS and the Natural Heritage Database to help guide you in your project development. I know that this project has had many minor modifications; we have not reviewed all those modifications in detail. If you need specific VDGIF review for something, you must articulate / ask / call out that request so that I see it. Given that the FERC filing is happening next month and surveys are not complete, it seems like VDGIF review will not be required on a short turn-around time. Please let us know as soon as you can, when you will be submitting materials and your turn around time so we can be responsive and plan recourses to meet your needs. Please continue to coordinate directly with the specific biological specialists for the various species as appropriate.

Renee: For my office, please submit everything directly to me and I will distribute and coordinate with others. We have been providing updated information on a quarterly basis. We still do not have the current, preferred alignment.

Megan: MVP will release the route as soon as it is complete; it will be in October, around the time of the FERC filing.



Sumalee: Continue to copy Troy on all correspondence. If there is a specific need from this office, please clearly and obviously articulate that in an email.

Ernie: Is there any Federal land or Wildlife / Conservation Lands crossed by the project?

Megan: The only public land is the 2.5 mile crossing of Jefferson National Forest. All other public lands have been avoided.

Ernie: The systematic approach you are using is working well. Keep it up.

Contact Signature: \_\_\_\_\_

## Valerie Clarkston

---

**From:** Valerie Clarkston  
**Sent:** Thursday, September 17, 2015 1:55 PM  
**To:** Kimberly\_Smith@fws.gov  
**Cc:** Sumalee\_Hoskin@fws.gov (Sumalee\_Hoskin@fws.gov); troy\_andersen@fws.gov; Daniel Judy; Taina Pankiewicz  
**Subject:** Mountain Valley Pipeline - Roanoke Loggerch Clarification

Hi Kim,

I have been trying to reach you on the phone to discuss clarification on MVP's assumption of presence regarding the Roanoke loggerch in the Roanoke, North Fork Roanoke, and Pigg Rivers. I may also have a few questions about Mitchell's satyr butterfly, but if you are not the point of contact for that species please steer me in the right direction.

If you can spare a few moments to answer the few questions I have, I would greatly appreciate it! My direct line is 513-591-4315. If you cannot reach me please contact Dan Judy (513-591-4339) or Taina Pankiewicz (513-591-4311).

Thank you,

Valerie



**Valerie Clarkston**

Scientist

Environmental Solutions & Innovations, Inc.  
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**office:** 513.451.1777 **direct:** 513.591.4315

**fax:** 513.451.3321 **cell:** 513.382.0925

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## TELEPHONE / PERSONAL CONVERSATION REPORT

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<b>PROJECT NAME:</b>	Mountain Valley Pipeline Project
<b>MVP TEAM CALLER:</b>	Valerie Clarkston
<b>CONVERSATION WITH:</b>	Kim Smith
<b>AGENCY:</b>	VA-USFWS
<b>EMAIL ADDRESS:</b>	<a href="mailto:Kimberly_Smith@fws.gov">Kimberly_Smith@fws.gov</a>
<b>PHONE NUMBER:</b>	804-824-2410
<b>SUBJECT:</b>	Roanoke logperch and Mitchell satyr butterfly update
<b>DATE AND TIME:</b>	9/17/2015 – 3:15 p.m.

---

### SUMMARY OF CONVERSATION:

Valerie asked Kim if formal consultation for Roanoke logperch was the only option for MVP. Kim said 'yes' unless MVP planned to HDD the Pigg, Roanoke, and North Fork Roanoke rivers. Valerie answered that at this time MVP plans to open-cut most streams, including these 3, due to the engineering associated with HDD and the large diameter pipe.

Valerie asked about the Mitchell's satyr butterfly and USFWS recommendation for identifying suitable habitat in Franklin and Montgomery counties. Valerie notified Kim that wetlands have been delineated in Franklin and Montgomery counties. The USFWS requires an approved surveyor to assess the wetlands, but no qualified surveyors are currently listed on the USFWS 'approved surveyor list'.

Kim Smith said to defer to VDCR-DNH for butterfly issues, as they maintain records and conduct the majority of field searches for this species. She also stated:

- She would like to see a study plan for the butterfly survey methods, but if VDCR is good with methods discussed via email then she is okay with that as well
- ESI should contact VDCR-DNH and have a qualified surveyor visit all of the delineated wetlands marked in Franklin and Montgomery counties

Valerie asked about the next step if suitable habitat is identified within some of the delineated wetlands. Kim deferred to VDCR-DNH. Presence/absence surveys are a possibility, but those at VDCR-DNH would have a clearer understanding regarding those surveys.

Contact Signature: \_\_\_\_\_ Valerie Clarkston\_(7/17/2015)\_\_\_\_\_

## Valerie Clarkston

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**Subject:** FW: FW: Mountain Valley Pipeline - Mitchell's Satyr Butterfly

**From:** Smith, Kimberly [mailto:kimberly\_smith@fws.gov]  
**Sent:** Friday, October 02, 2015 9:50 AM  
**To:** Valerie Clarkston  
**Cc:** troy\_andersen@fws.gov; Daniel Judy; Taina Pankiewicz; mneylon@eqt.com; Sparks, Sean  
**Subject:** Re: FW: Mountain Valley Pipeline - Mitchell's Satyr Butterfly

Hi Valerie,

Based on recent discussions between the Service and the Department of Conservation and Recreation - Division of Natural Heritage, the Service has revised the information provided through ECOS and IPaC for the Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*). We are currently recommending surveys for this species within appropriate habitat in Floyd County, Virginia. This will be reflected on your Official Species List in IPaC. Based on the latest alignment for this project, it appears that no impacts will occur within Floyd County and therefore, surveys for this species are no longer recommended. If you have any questions, please contact me.

Kim

On Fri, Oct 2, 2015 at 8:54 AM, Valerie Clarkston <[VClarkston@envsi.com](mailto:VClarkston@envsi.com)> wrote:

Hi Kim,

As you suggested, I contacted VDCR-DNH for more information on qualified surveyors for Mitchell's satyr butterfly and any known occurrences of the species within the MVP Project area. Based on Dr. Roble's response to my inquiry (below), this species is not likely to occur in Montgomery or Franklin counties and the VDCR-DNH does not maintain a list of qualified surveyors.

Please advise on how you would like MVP to proceed with surveys for this species.

Thanks,

Valerie

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**From:** Hypes, Rene (DCR) [mailto:[Rene.Hypes@dc.virginia.gov](mailto:Rene.Hypes@dc.virginia.gov)]  
**Sent:** Thursday, September 24, 2015 4:17 PM  
**To:** Valerie Clarkston  
**Cc:** Daniel Judy; Taina Pankiewicz; Rob Jean  
**Subject:** RE: Mountain Valley Pipeline - Mitchell's Satyr Butterfly

Valerie,

Please find below Dr. Roble's response to your questions about Mitchell's Satyr Butterfly.

“Mitchell’s Satyr has only been documented in a limited portion of Floyd County despite numerous surveys in adjacent, and even more distant, counties, as well as many other wetlands in Floyd. We have checked a handful of sites in both Franklin and Montgomery counties, including the one known bog turtle site in Franklin Co., but did not find the species there. Except for an unconfirmed (but potentially reliable) report of a bog turtle sighting near the Va. Tech campus in Blacksburg about 75 years ago, there are no records for this turtle in Montgomery Co. I suppose it’s possible that Mitchell’s Satyr could occur in another county in VA, but that isn’t very probable considering all of our negative surveys to date.

Aerial photos often can be used to identify potential satyr habitat, especially infrared images. DCR has also developed a habitat model for Mitchell’s satyr in Virginia that may include low potential sites in Franklin and Montgomery counties.

The USFWS website reporting that Mitchell’s Satyr occurs in Patrick Co. is incorrect. St. Francis’ satyr only occurs in North Carolina (confined to wetlands on Fort Bragg).

DCR does NOT maintain a list of qualified Mitchell’s Satyr surveyors but does regularly conduct surveys for this species.”

Let us know if you have additional questions.

Sincerely,

S. Rene' Hypes  
Project Review Coordinator  
Department of Conservation and Recreation

Division of Natural Heritage  
600 East Main Street, 24<sup>th</sup> Floor  
Richmond, Virginia 23219  
804-371-2708 (phone)  
804-371-2674 (fax)

[rene.hypes@dcr.virginia.gov](mailto:rene.hypes@dcr.virginia.gov)



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[Virginia Natural Heritage Program on Facebook](#)

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**From:** Valerie Clarkston [<mailto:VClarkston@envsi.com>]  
**Sent:** Monday, September 21, 2015 1:43 PM  
**To:** Hypes, Rene (DCR)  
**Cc:** Daniel Judy; Taina Pankiewicz; Rob Jean  
**Subject:** RE: Mountain Valley Pipeline - Mitchell's Satyr Butterfly

Thank you Rene. I look forward to corresponding with Dr. Roble.

**Valerie Clarkston**

---

**From:** Hypes, Rene (DCR) [<mailto:Rene.Hypes@dcr.virginia.gov>]

**Sent:** Monday, September 21, 2015 1:22 PM

**To:** Valerie Clarkston

**Cc:** Daniel Judy; Taina Pankiewicz; Rob Jean

**Subject:** RE: Mountain Valley Pipeline - Mitchell's Satyr Butterfly

Hi Valerie,

Our inventory staff has conducted surveys for the Mitchell's satyr butterfly (*Neonympha mitchelli mitchelli*). According to the information currently in our files, we have 11 occurrences documented in Floyd County. Several of our conservation sites for this butterfly also support Bog turtle. Below is general information about this resource.

The Mitchell's satyr (*Neonympha mitchellii*, G1G2/S1/LE/LE) butterfly has a spotty distribution across its range to include areas of Alabama and Mississippi, and Michigan and Indiana (NatureServe, 2009). It occupies early succession wet meadows in the Southern Blue Ridge in Virginia. These sedge-dominated meadows are maintained not by beaver activity or fire, but by grazing, mowing or chemical or mechanical removal of woody vegetation. Most documented occurrences of this species in Virginia were found at sites with a stream actually running through the meadow and Woodland bulrush (*Scirpus expansus*) was associated with all sites.

Threats to the Mitchell's satyr are wetland loss and alteration, fire suppression, collection pressures and the use of herbicides and pesticides (Tuberville, 2001). Please note that Mitchell's satyr is currently classified as endangered by the United States Fish and Wildlife Service (USFWS) and the Virginia Department of Agriculture and Consumer Services (VDACS).

#### Literature Cited

NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: April 15, 2010).

Tuberville, T. 2001. DCR-DNH Technical Report 01-18. Conservation Plan for the Saint Francis' Satyr (*Neonympha mitchelli francisci*) in Virginia.

I have also forwarded your email to Dr. Steve Roble, DCR zoologist who can provide more information about the butterfly and potential surveyors. He is currently out of the office so it may be next week before he responds.

Regards,

Rene'

S. Rene' Hypes  
Project Review Coordinator  
Department of Conservation and Recreation

Division of Natural Heritage  
600 East Main Street, 24<sup>th</sup> Floor  
Richmond, Virginia 23219  
804-371-2708 (phone)  
804-371-2674 (fax)



**From:** Valerie Clarkston [<mailto:VClarkston@envsi.com>]  
**Sent:** Monday, September 21, 2015 9:28 AM  
**To:** Hypes, Rene (DCR)  
**Cc:** Daniel Judy; Taina Pankiewicz; Rob Jean  
**Subject:** Mountain Valley Pipeline - Mitchell's Satyr Butterfly

Hi Rene,

In their formal comments (attached), the VA USFWS requested MVP to perform habitat assessments for Mitchell's satyr butterfly (*Neonympha mitchelli mitchelli*) in Franklin and Montgomery counties. Wetlands have been delineated in these counties, and we intend to focus on these areas to determine if they meet requirements for suitable satyr butterfly habitat. The USFWS requested that a qualified surveyor make these determinations. However, when asked for a list of qualified surveyors, the USFWS pointed me to the VDCR-DNH. The USFWS mentioned VDCR-DNH actively conducts surveys for this species and maintains a list of qualified surveyors. Could you provide us with more information so we can prepare a study plan (if necessary) and begin field habitat assessment surveys?

Also, publically available information listing documented populations of Mitchell's satyr butterfly do not include Franklin or Montgomery counties, but the species is known from Floyd and Patrick counties (according to USFWS ECOS web page). The Mitchell's satyr butterfly is mostly known from Michigan and Indiana. There is also a closely related butterfly, the St. Francis satyr butterfly (*Neonympha mitchelli francisi*), known mostly from two counties in North Carolina but populations have recently been discovered in Virginia. Could you confirm/clarify which subspecies is most likely present within the Mountain Valley Pipeline Project area, if any? I do not believe VDCR-DNH identified this butterfly in their formal comments as a concern within the Project area, only USFWS.

I appreciate any info you can provide. As always, please feel free to call me at any of the numbers listed below.

Thanks!

-Valerie



**Valerie Clarkston**

Scientist

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## ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.

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Phone: 513-451-1777 Fax: 513-451-3321

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Pesi 593

13 November 2015

Mr. Troy Andersen and Ms. Sumalee Hoskin  
U.S. Fish and Wildlife Service  
Virginia Field Office  
6669 Short Lane  
Gloucester, VA 23061

Dear Mr. Andersen and Ms. Hoskin:

Please find enclosed one compact disc containing electronic copies of the following rare, threatened, and endangered species surveys completed along portions of the proposed Mountain Valley Pipeline Project in Virginia:

1. Habitat Assessments for Roanoke Logperch (*Percina rex*) along the Proposed Mountain Valley Pipeline in Virginia
2. Freshwater Mussel (Unionidae) Site Assessments and Surveys for the Proposed Mountain Valley Pipeline in Virginia
3. Surveys for Rare Plants along MVP's Proposed Mountain Valley Pipeline Project in Craig, Franklin, Giles, Montgomery, Pittsylvania, and Roanoke Counties, Virginia
4. Listed Bat Studies along MVP's Proposed Mountain Valley Pipeline Project in Craig, Franklin, Giles, Montgomery, Pittsylvania, and Roanoke counties, Virginia

We respectfully request your review of the methods, results, and conclusions contained within each report. If you have any questions or comments, please do not hesitate to contact Daniel Judy ([DJudy@envsi.com](mailto:DJudy@envsi.com); 513-591-4339), Valerie Clarkston ([VClarkston@envsi.com](mailto:VClarkston@envsi.com); 513-591-4315), or Taina Pankiewicz ([TPankiewicz@envsi.com](mailto:TPankiewicz@envsi.com); 513-591-4311).

Sincerely,

Valerie Clarkston  
Scientist  
[VClarkston@envsi.com](mailto:VClarkston@envsi.com)  
513-591-4315

**www.ENVSI.com**



November 13, 2015

Mr. John Schmidt and Ms. Tiernan Lennon  
U.S. Fish and Wildlife Service  
West Virginia Field Office  
694 Beverly Pike  
Elkins, West Virginia 26241

Mr. Troy Andersen and Ms. Sumalee Hoskin  
U.S. Fish and Wildlife Service  
Virginia Field Office  
6669 Short Lane  
Gloucester, Virginia 23061

**Subject: Mountain Valley Pipeline Project: Intent to Initiate Formal Consultation for Federally Listed Species. FERC Docket Number: CP16-10-000**

Greetings,

Mountain Valley Pipeline, LLC (MVP) respectfully submits official, written notification of its intent to initiate Formal Consultation under Section (7)(a)(2) of the Endangered Species Act to the U.S. Fish and Wildlife Service (USFWS).

MVP is a joint venture between affiliates of EQT Midstream Partners, LP, NextEra Energy, Inc., WGL Holdings, Inc., Vega Energy Partners, Ltd, and RGC Midstream, LLC. The proposed action is construction of the Mountain Valley Pipeline (Project), a 42-inch diameter natural gas pipeline, to allow producers and end-users a direct route to transport new gas supplies to meet the growing need for natural gas in the Appalachian, Mid-Atlantic, and Southeastern United States. The Project will extend from the existing Equitrans transmission system near Mobley in Wetzel County, West Virginia to Transcontinental Gas Pipeline Company's Zone 5 compressor station 165 in Pittsylvania County, Virginia. In West Virginia, the pipeline is expected to cross Braxton, Doddridge, Fayette, Greenbrier, Harrison, Lewis, Monroe, Nicholas, Summers, Webster and Wetzel counties. In Virginia, the pipeline is expected to cross Craig, Franklin, Giles, Montgomery, Pittsylvania and Roanoke counties.

Due to abundance, locations, and seasonal activity patterns, the proposed action has the potential to adversely affect listed bats (Indiana bat, *Myotis sodalis* and northern long-eared bat, *Myotis septentrionalis*), fish (Roanoke logperch, *Percina rex*), and mussels (James spinymussel, *Pleurobema collina*; clubshell, *Pleurobema clava*; and snuffbox, *Epioblasma triquetra*) in both states traversed by the project. A Biological Assessment (BA) will be prepared to cover these, and all federally listed species occurring within the vicinity of the proposed action. To

USFWS

September 28, 2015

Page 2 of 2

aid in preparation of a thorough and complete BA, MVP requests an in-person meeting with both USFWS offices during November 2015.

Once the BA is complete, FERC will submit the document along with an initiation letter to USFWS. At this time, we anticipate that will occur in February 2016.

If you have questions or would like additional information please contact me at 304-841-2086 ([MNeylon@eqt.com](mailto:MNeylon@eqt.com)), or Sean Sparks at 617-443-7565 ([sean.sparks@tetrattech.com](mailto:sean.sparks@tetrattech.com)).

Sincerely,

A handwritten signature in blue ink that reads "Megan Landfried Neylon". The signature is written in a cursive, flowing style.

Megan Landfried Neylon

Senior Environmental Coordinator

cc: John Centofanti, EQT Corporation  
Sean Sparks, Tetra Tech

**From:** UPS Quantum View <auto-notify@ups.com>  
**Sent:** Monday, November 16, 2015 11:38 AM  
**To:** Jo Garofalo  
**Subject:** UPS Delivery Notification, Tracking Number 1ZA8042V2210014932



At the request of Jo Garofalo of Environmental Solutions & Innovatio, this notice alerts you the following shipment has been delivered.

**Important Delivery Information**

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**Message from Jo Garofalo of Environmental Solutions & Innovatio:**  
593.11.12.13.14 VA USFWS Anderson & Hoskin

**Tracking Number:** [1ZA8042V2210014932](#)  
**Delivery Date / Time:** 16-November-2015 / 11:24 AM  
**Delivery Location:** FRONT DESK  
**Signed by:** TEMPLE

**Shipment Detail**

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**Ship To:**  
GLOUCESTER  
VA  
US

**UPS Service:** NEXT DAY AIR  
**Shipment Type:** Letter

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## Valerie Clarkston

---

**From:** Valerie Clarkston  
**Sent:** Thursday, December 17, 2015 1:31 PM  
**To:** 'Smith, Kimberly'  
**Cc:** Daniel Judy; Taina Pankiewicz; mneylon@eqt.com; 'Sparks, Sean'  
**Subject:** RE: Mountain Valley Pipeline - updated shapefile and official species list request  
**Attachments:** MVP\_Project\_Shapefiles\_20151217.zip; MVP\_IPaC\_OfficialSpeciesList\_20151217.pdf

Hi Kim,

Attached are updated shapefiles for the Mountain Valley Pipeline Project. An official species list from IPaC based on these files and specific to Virginia is also attached.

At this time, does your office have any comments on the Bat, Mussel, Fish, and Plant reports that were submitted on November 13, 2015?

Thanks,

### Valerie Clarkston

Scientist

*Environmental Solutions & Innovations, Inc.*

4525 Este Avenue

Cincinnati, OH 45232

Office 513.451.1777

Mobile 513.382.0925

**From:** Smith, Kimberly [[mailto:kimberly\\_smith@fws.gov](mailto:kimberly_smith@fws.gov)]  
**Sent:** Wednesday, December 09, 2015 4:16 PM  
**To:** Valerie Clarkston  
**Subject:** Mountain Valley Pipeline - updated shapefile and official species list request

Valerie,

Can you please send me the most recent shapefiles of the pipeline route and attendant facilities? I would also like a copy of an updated official species list from IPaC for that most recent route. We also need the shapefiles for any alternatives being considered and the associated official species list.

Thanks,

Kim

--

Kimberly Smith  
Fish and Wildlife Biologist  
U.S. Fish & Wildlife Service  
6669 Short Lane  
Gloucester, VA 23061  
[Kimberly\\_Smith@fws.gov](mailto:Kimberly_Smith@fws.gov)  
804-824-2410  
<http://www.fws.gov/northeast/virginiafield/>

**Valerie Clarkston**

---

**Subject:** FW: Mountain Valley Pipeline - updated shapefile and official species list request

**From:** Smith, Kimberly [[mailto:kimberly\\_smith@fws.gov](mailto:kimberly_smith@fws.gov)]

**Sent:** Tuesday, December 29, 2015 2:23 PM

**To:** Valerie Clarkston

**Subject:** Re: Mountain Valley Pipeline - updated shapefile and official species list request

Valerie,

Who conducted the Roanoke logperch habitat assessments and mussel surveys for this project?

Kim



**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR1-30**



Mountain Valley Pipeline Project

Docket No. CP16-10-000

## **Winter Construction Plan**

October 2015  
Revised January 2016

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## 1.0 Introduction

Based on the Project construction schedule, MVP anticipates that standard construction and restoration will continue into and through the 2016 – 2019 winter seasons. All winter work will be conducted in accordance with the Federal Energy Regulatory Commission’s (FERC’s) Plan and Procedures, as well as the Project *National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit (WV and VA)*. MVP has developed this Winter Construction Plan (WCP) to outline the special procedures and best management practices (BMPs) that will be implemented during the winter season construction period for installation of the Project facilities. These special procedures and BMPs should be considered additions to the other plans as described above, procedures, and BMPs MVP has specified for use on the Project and will be used in conjunction with those plans, procedures, and BMPs, as applicable. Final restoration and reseedling will occur the following spring.

This WCP will be considered to be in effect when any of the following conditions occur:

- The ground is frozen and plating of topsoil occurs;
- Equipment slippage occurs from operating on frozen ground or vehicles risk sliding outside established right-of-way clearing limits;
- Road crossings cannot be adequately compacted;
- Backfill material freezes to the extent that adequate compaction becomes difficult; and/or
- Topsoil stockpiles are frozen and cannot be uniformly redistributed across disturbed areas or separated from the sub-grade material.

Final restoration and reseedling will occur the following spring.

## 2.0 Stabilization/Winterization

- The trench will be backfilled to the extent possible using subsoil.
- Slope stabilization and stability of cuts and fills will be restored to the extent possible, and water bars will be installed crossing the right-of-way to divert surface run-off away from the construction area.
- Equipment mats will be removed from stream areas where destabilization of installed matting could potentially occur due to any unexpected increase in stream water flow caused by increased snow run-off or other natural factors.
- Breaks will be cut into spoil piles and through the berm across the ditch line to allow proper drainage across the right-of-way.
- Wetland areas where mats are removed will be restored to the extent possible.
- Disturbed soils adjacent to streams and wetlands will be mulched, where needed.
- Water bars, berms and erosion/sediment control measures will be installed to minimize erosion along the right-of-way and disposition of sediments beyond the boundaries of the right-of-way.
- In areas where final restoration has not been achieved, the right-of-way will be mulched and left in a roughened condition to reduce potential of erosion during times of snow thaw and/or significant rain accumulation.

### 3.0 Erosion and Sediment Control Measures

- Temporary water bars will be constructed on slopes greater than 5 percent where final clean-up and permanent erosion and sediment control devices have not been installed.
- Mulching will be applied to all slopes (actively cultivated cropland exempt) concurrent with or immediately after seeding, where necessary to stabilize the soil surface and to reduce wind and water erosion. Mulch will be uniformly dispersed over the area to cover 100 percent of the ground surface at a rate of 2 tons per acre of straw or its accepted equivalent, unless the local soil conservation authority, landowner, or land managing agency approval make formal request of any alternative action to be taken by MVP in writing.
- Temporary mulch will be applied to the right-of-way at a rate of 3 tons per acre on slopes greater than 5 percent and within 100 feet of waterbodies and wetlands where final restoration has not been established to the satisfaction of the Environmental Inspector.
- If right-of-way is snow covered, the snow will serve as suitable ground cover. If snow cover recedes, exposed right-of-way will be stabilized utilizing the measures detailed in this plan.
- The Environmental Inspector (EI) and/or Agricultural Inspector (AI) will suspend final clean-up activities and topsoil placement if topsoil cannot be evenly distributed. If the topsoil is frozen, spreading the topsoil and allowing it to thaw in the sun before spreading may occur. Frozen topsoil will not be returned to the right-of-way if it cannot be graded evenly.
- If topsoil placement is suspended due to frozen conditions, normal temporary right-of-way stabilization procedures will be applied as ground conditions permit. The final clean-up schedule will vary, depending on ground conditions and time of construction. Where final clean-up and restoration have not been completed, the right-of-way will be left in a roughened condition to reduce potential for erosion during snowmelt. In upland areas, a slight crown may be left over the pipeline to account for settling as backfilled soils thaw.
- Topsoil piles will be left in a stabilized condition and replaced when weather conditions permit proper de-compaction of the areas.
- Temporary seeding will be applied as necessary to areas where topsoil has not been restored.
- Sediment barriers (i.e., silt fence, straw bales, earthen berms) will be installed and maintained throughout the right-of-way at designated water bodies, wetlands, and paved road crossings. These structures will be inspected per the permit conditions and adequately maintained during the winter construction season to ensure there are zero control failures. Erosion and sedimentation control measures will be installed and repaired as determined by the on-site environmental inspector. Equipment will be utilized as needed to assist with installations in frozen conditions.

### 4.0 Access Road Usage

- Access roads will be graded where needed and approved by the assigned EI. All access roads approved for this project will remain in use during winter construction. All roads will be monitored and maintained in accordance with applicable permit and landowner requirements.
- Snow removal by equipment will not be performed beyond the road surface to prevent mixing soil with snow.

## 5.0 Right-of-Way Snow Removal

If a snow event is followed immediately by a period of melting and runoff, the typical erosion and sedimentation control BMPs specified in MVP's Environmental Construction Plans (ECPs) for stormwater management will apply, and no special measures will be necessary. If a significant (greater than 6 inches) snowfall event occurs and is followed by an extended period of freeze, the following procedures will be implemented:

- All snow removed from the right-of-way will be in compliance with the footprint laid out for the MVP Project. No equipment will be permitted beyond the limits of disturbance for the Project.
- MVP's contractor will work with the MVP's Lead EI to designate stockpile areas. Breaks in windrowed snow will be placed at drainage crossings and as requested by the affected landowner.
- Snow will be removed from topsoil or spoil storage areas prior to using.
- The use of snow removal equipment will be restricted to use within the limits of disturbance and approved access roads.
- Snow will only be removed from active work areas at the direction of the EI.
- All snow and ice will be removed from pipe joints prior to being mobilized to position for alignment and welding. Plowing equipment used for snow removal operations will be equipped with 6-inch shoes to ensure blades do not remove topsoil or vegetation.
- Snow removal equipment will consist mainly of plowing equipment, such as bulldozers, loaders, utility trucks, dump trucks, or any construction vehicle that can be equipped with a plow and 6-inch shoes, and may include but is not limited to other equipment, such as snow blowers and hand shovels.
- Rather than blade as low as possible, snow removal operators will blade no lower than a height sufficient for construction vehicles to safely navigate the right-of-way.
- Snow removal operators will adjust blade height in areas of slope changes to ensure that contact with the ground is minimized to the greatest extent practical.
- Pickup trucks with front mounted blades will plow all access roads. Intersections, driveways and other private roads will not be blocked by plowed or stockpiled snow. Removed snow will not mix with sidecast stored soils. Currently, no ATWS has been identified for snow storage, and will be determined on an as needed basis.

## 6.0 Soil Handling

- Frozen topsoil stripping activities will be limited to the equipment capable of accurately stripping variable depths of topsoil; rippers mounted on a machine may be necessary to achieve depth penetration. If segregation of subsoil and topsoil cannot be accomplished without mixing, the topsoil salvage operation will cease until soil conditions improve and segregation requirements can be met.
- MVP will minimize the amount of open trench to reduce the amount of snow that will have to be removed.

- MVP will install highly visible construction fence around any open trenches in areas where the pipeline intersects known paths used for snowmobiling, hiking or other such activities.
- The trench may be crowned to allow for more compaction and settling issues to occur in freezing and thawing conditions.

## **7.0 Inspection and Maintenance**

- MVP will monitor and maintain erosion and sedimentation controls as specified in the FERC Plan. Erosion and sedimentation controls will be monitored daily in active construction areas and weekly in areas with no construction or equipment operation during the winter period.
- When snow melts or the ground thaws, the frequency of inspections will increase as determined necessary by the environmental inspector to an extent necessary to confirm the integrity and effectiveness of all erosion and sediment control devices.
- Contractor and MVP will continuously evaluate the condition of construction areas in an effort to determine if a need exists for additional temporary erosion and sediment control measures, and, as conditions allow, where these corrective measures should be taken.
- Contractor shall have the proper equipment available at all times to allow access to the right-of-way under soft soil conditions.

## **8.0 Spring and Summer Restoration**

- MVP and its contractor will identify any storm or winter damage that may have occurred on the right-of-way.
- Contractor and MVP will evaluate the condition of the right-of-way and will determine if a need exists for additional temporary erosion and sediment control measures.
- Trench compaction will be facilitated by back dragging, walking in backfill material with heavy equipment, and obtaining optimum moisture for the backfill material.
- Contractor will continue final restoration, which may require disking or tilling of the right-of-way to create a seed bed for germination.
- Restoration of topsoil will occur, where practicable, after both the stockpiled topsoil and exposed subsoil have thawed, and the ground has dried following the spring melt.

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR1-32**



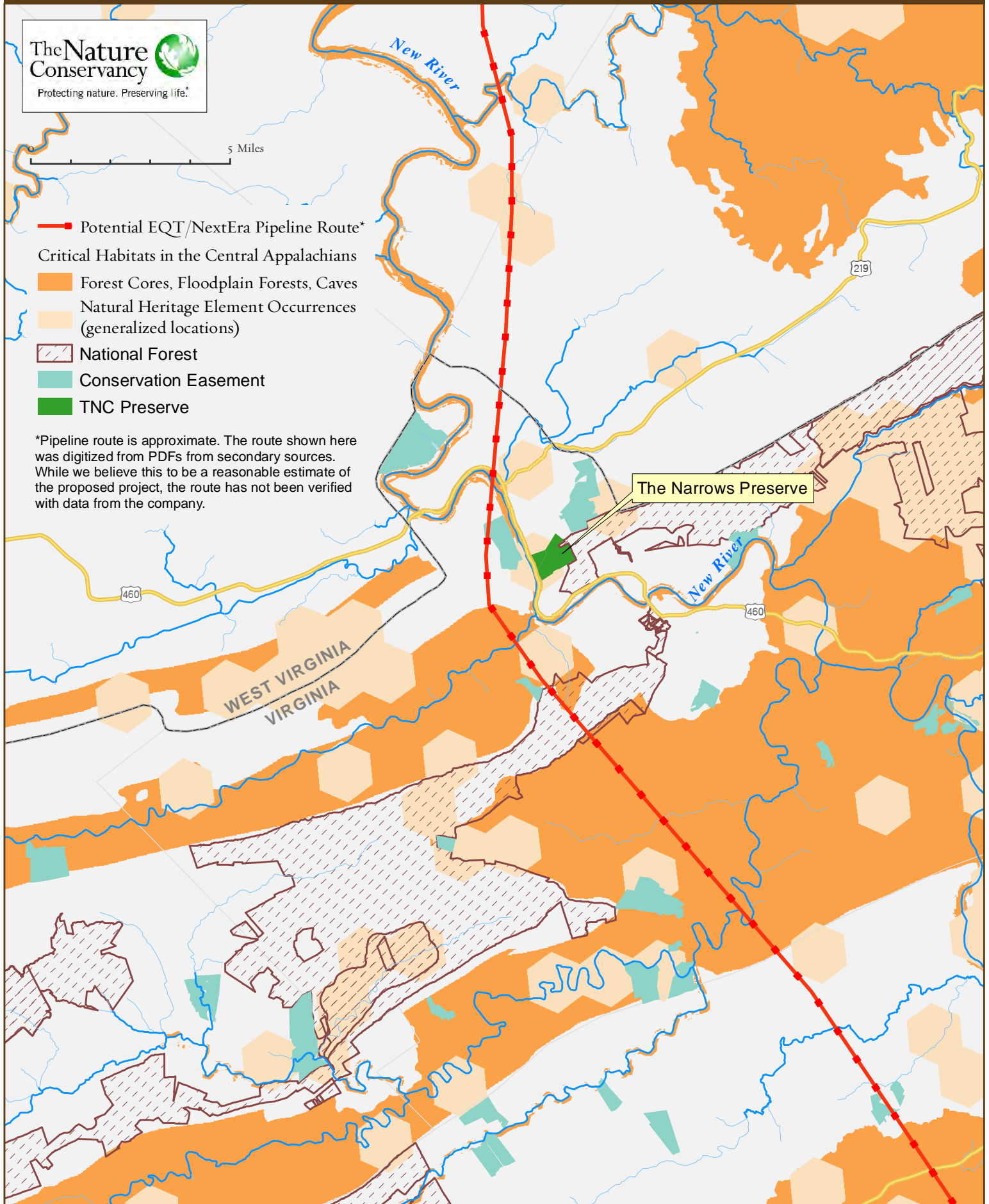
# The Narrows Preserve and Vicinity, Potential EQT/NextEra Pipeline Route and Identified Critical Habitats



5 Miles

- Potential EQT/NextEra Pipeline Route\*
- Critical Habitats in the Central Appalachians
  - Forest Cores, Floodplain Forests, Caves
  - Natural Heritage Element Occurrences (generalized locations)
  - National Forest
  - Conservation Easement
  - TNC Preserve

\*Pipeline route is approximate. The route shown here was digitized from PDFs from secondary sources. While we believe this to be a reasonable estimate of the proposed project, the route has not been verified with data from the company.



**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR2-11**

Revised 01/15/16

**Table 5.3 – Proposed target analytes for water resource baseline sampling.**

Note that public water supply owner / operator will be consulted to identify additions or deletions to this target analyte list.

Target Analyte	Notes / Rationale for Testing
pH	Field-measured indicator parameter characterizing the relative acid-base nature of water and a major indicator of overall water quality.
Specific conductivity (mS/cm)	Field-measured indicator parameter characterizing the dissolved ion content of water and a major indicator of overall water quality.
Temperature (°C)	Field-measured indicator parameter that is a general water quality descriptor.
Turbidity (turb. units)	Field-measured indicator parameter characterizing the suspended solids content of water.
Total and Fecal coliform bacteria (MPN/100 ml)	Measures bacteria content of water. Indicator of surface water and / or septic field impact to the water well. 5-day holding time.
Total dissolved solids (TDS) (mg/L)	Measures amount of charged ions that are dissolved in water. Indicative of dissolved mineral content of the water.
Total suspended solids (TSS) (mg/L)	Measures amount of solid material suspended in water. Similar to turbidity field indicator, but provides a quantitative assessment of suspended solids mass.
Hardness (mg/L)	Major water quality indicator. Hardness is commonly used to measure dissolved calcium and magnesium. “Hard” water is high in dissolved minerals. Hardness, TDS and Specific conductivity are evaluated in common to characterize the relative mineralization of groundwater. Report in CaCO <sub>3</sub> equivalent (mg/L).
Alkalinity (mg/L)	Measures the ability of water to neutralize acid (buffering capacity) and is part of an overall water quality indicator. Report in CaCO <sub>3</sub> equivalent (mg/L)
Sulfate (mg/L)	Common major anion (negatively-charged compound) in groundwater and at high concentrations may lead to scaling of plumbing and impart poor taste to potable water. This is also used to evaluate charge balance (balanced anions and cations) of the overall water quality data set for each well.
Chloride (mg/L)	Common major anion (negatively charged) that is an indicator of overall salt content of water. This is also used to evaluate charge balance (balanced anions and cations) of the overall water quality data set for each well.

**Table 5.3 – Proposed target analytes for water resource baseline sampling.**

Note that public water supply owner / operator will be consulted to identify additions or deletions to this target analyte list.

<b>Target Analyte</b>	<b>Notes / Rationale for Testing</b>
Nitrate (total) (mg/L)	Common major anion (negatively charged compound) that is typically used as an indicator of surface water or septic influence on groundwater. Nitrate and bacteria analyses are evaluated in tandem to identify potential impacts to groundwater sources. This is also used to evaluate charge balance (balanced anions and cations) of the overall water quality data set for each well.
Bicarbonate (mg/L)	Common major anion (negatively charged compound) used to evaluate charge balance (balanced anions and cations) of the overall water quality data set for each well. Evaluating bicarbonate content along with alkalinity assists in understanding overall water quality.
Calcium and Magnesium (mg/L)	Common major cation (positively charged element) that will assist in characterizing overall water quality and Hardness, and will be used to evaluate charge balance (balanced anions and cations) of the overall water quality data set for each well.
Sodium and Potassium (mg/L)	Common major cation (positively charged element) that will assist in characterizing overall water quality and to evaluate charge balance (balanced anions and cations) of the overall water quality data set for each well. High levels of sodium may also have health effects for persons with high blood pressure.
Iron and Manganese (mg/L)	Common major cation (positively charged element) that will assist in characterizing overall water quality and to evaluate charge balance (balanced anions and cations) of the overall water quality data set for each well. These major elements, when dissolved in water at a high enough concentration, can have aesthetic concerns for staining home fixtures or affecting laundry.

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR2-26**

Revised 1/15/16

**Table 5.2 Public water supplies located in HUC-10 watershed crossed by proposed Filing Alignment (Revised December 30, 2015 per FERC Data Request)**

Note: specific locations of water well, spring or surface intake to be determined from Supplier

Public Supply Name	PWS ID#	Locality	State	Date Contact Made by MVP	Person Contacted	Plan for Follow-up
West Union Munciple Water Plant	WV3300901	West Union	WVa	08/26/15	Tina Walling, Joe Cross	Met with Dwayne Reynolds on September 2, 2015. Follow up 1st quarter 2016.
Lumberport Water	WV3301714	Lumberport	WVa	08/26/15	Bill Keener	Met with Bill Keener on September 2, 2015. Need to send map of alignment 1st quarter 2016.
Pine Grove	WV3305205	Pine Grove	WVa	09/22/15	Zack Bassett	Set up meeting for 1st quarter 2016.
West Union Munciple Water Plant	WV3300901	West Union	WVa	08/26/15	Tina Walling, Joe Cross	Met with Dwayne Reynolds on September 2, 2015. Follow up 1st quarter 2016.
Jane Lew Public Service District	WV3302103	Jane Lew	WVa	08/26/15	Nancy Gee	None ( Jane Lew purchases water from WVA Water)
West Virginia American Water - Weston WTP	WV3302104	Weston	WVa	08/31/15	Brett Morgan	Send alignment map, follow up 1st quarter with WVAW Consultant.
Glenville Water Plant	WV3301104	Glenville	WVa	08/31/15	Freman Nicholson	None requested, purchase water from FCI Gilmer (PSD)
Burnsville Public Utility	WV3300408	Burnsville	WVa	08/31/15	Donnie Ratliff	Send alignment map, follow up 1st quarter.
West Virginia American Water- Gassaway	WV3300406	Gassaway	WVa	08/31/15	Brett Morgan	Send alignment map, follow up 1st quarter 2016 with WVAW Consultant
Flatwoods Canoe Run PSD	WV3300402	Sutton	WVa	09/14/15	Larry Gibson	Follow up 1st quarter 2016
Sugar Creek PSD	WV3300404	Frametown	WVa	09/14/15	Jim Williams	Set up meeting 1st quarter 2016
West Virginia American Water - Webster Springs	WV3305104	Webster Springs	WVa	08/31/15	Brett Morgan	Send alignment map, follow up 1st quarter with WVAW Consultant.
Nettie-Leivasy PSD	WV3303403	Nettie	WVa	09/22/15	Norma Cogar	Send alignment, schedule 1st quarter meeting.
Summersville Municipal Water	WV3303404	Summersville	WVa	09/04/15	Mr. Steve Acree	Scheduling a meeting with PSD and MVP for mid-2016
Wilderness PSD	WV3303405	Mt. Nebo	WVa	09/04/15	Mr. Scott Rader	Scheduling a meeting with PSD and MVP for mid-2016
Greenbrier County PSD #2	WV3301302	Quinwood	WVa	09/04/15	Mr. Kevin Williams	None requested
Rainelle Water Department	WV3301309	Rainelle	WVa	09/04/15	Mr. Ed Midkiff	None requested
Rupert Water Department	WV3301311	Rupert	WVa	09/11/15	Personnel on Sick leave	Call back early 2016
Town of Meadow Bridge Water Dept.	Town Clerk	Meadow Bridge	WVa	09/11/15	Timmy Killen	None requested
City of White Sulphur Springs Water Plant	WV3301314	White Sulphur Springs	WVa	09/11/15	Water Plan Operations	None requested
City of Lewisburg Water Plant	WV3301307	Lewisburg	WVa	09/11/15	John Manchester	Call back early 2016
Ronceverte Water Department	WV3301310	Ronceverte	WVa	09/11/15	Town Clerk	n/a - Purchases water from City of Lewisburg
Big Bend PSD	WV3304507	Talcott	WVa	8/25/2015 (meeting)	Ed Halloran	Follow-up with PSD in early 2016 to confirm sampling plan
Red Sulphur Public Service District	WV3303206	Peterstown	WVa	8/25/2015 (meeting)	Porter Robertson	Follow-up with PSD in early 2016 to confirm sampling plan
Town of Union	WV3303207	Union	WVa	08/28/15	Caroline Sparks	None requested
Gap Mills Public Service District	WV3303204	Gap Mills	WVa	08/28/15	Robin Miller	None requested
Green Valley/Glenwood PSD - Bulltail Water Plant	WV3302813	Bluefield	WVa	09/11/15	Marty Mariotti	None requested
West Virginia American Water- Bluefield	WV3302835	Bluefield	WVa	08/31/15	Brett Morgan	Send alignment map, follow up 1st quarter with WVAW Consultant
Giles County PSA	1071455	Pearisburg	Va	09/11/15	Kevin Belcher	None requested
NRV Regional Water Authority	1121057	Radford	Va	09/11/15	Caleb Taylor	None requested
Western Virginia Water Authority (WVWA)	2770900	Roanoke	Va	08/27/15	Gary Robertson	None requested
City of Salem	2775300	Salem	Va	09/11/15	Larado Robinson	None requested
Town of Boones Mill	5067043	Boones Mill	Va	10/13/2015 (meeting)	Matt Lawless	Follow-up with Town in early 2016 to confirm sampling plan
Town of Rocky Mount	5067840	Rocky Mount	Va	12/2/2015 (meeting)	Bob Dietrich	Follow-up with Town in early 2016 to confirm sampling plan
Franklin County	5067137	Rocky Mount	Va	09/14/15	Don Smith	n/a - Served by Western Virginia Regional Water Authority
Town of Ferrum	5067120	Ferrum	Va	09/14/15	James Keith	None requested
Town of Gretna	5143210	Gretna	Va	09/14/15	David Lilly	None requested
Town of Chatham	5143114	Chatham	Va	09/14/15	Bob Hanson	None requested

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR2-35**

Table 2.2-10, Revised  
Proposed Hydrostatic Test Water Use Summary

Anticipated Year of Construction	Construction Spread	Segment Name	Beginning MP	Ending MP	Length of Section	Required Water (gal)	Maximum Anticipated Withdrawal Rate (gpm)	Percentage of Daily Average Flow	Proposed Water Source				Proposed Test Water Discharge Location						Proposed Withdrawal/Discharge Month			
									MP	Proposed Water Source		Anticipated Flow (Sep - Dec)	MP	Volume	Explanation	Sub-Basin	Watershed	Nearest Stream		Nearest Perennial Stream	Anticipated Flow (Sep - Dec)	
										Sub-Basin	Watershed											
2017	1	01A	0.0	12.2	12.2 mi	4,367,359 gal			25.9	Salem Fork Creek	West Fork	Tennile Creek	2,547 gpm	25.9	4,904,330 gal	Discharge Test Section 1 in upland area near Salem Fork Creek @ 26.0	West Fork	Tennile Creek	Salem Fork (NHD-005) @ 26.0	Salem Fork (NHD-005) @ 26.0	2,547 gpm	Oct-Nov 2017
		01B	12.2	25.9	13.7 mi	4,904,330 gal	255 gpm	10.00%		Section 1A + Salem Fork Creek	West Fork	Tennile Creek										
2017	2	02A	25.9	41.3	15.4 mi	5,512,896 gal	255 gpm	10.00%	25.9	Section 2B + Salem Fork Creek	West Fork	Tennile Creek	2,547 gpm	25.9	5,512,896 gal	Discharge Test Section 1 in upland area near Salem Fork Creek @ 26.0	West Fork	Tennile Creek	Salem Fork (NHD-005) @ 26.0	Salem Fork (NHD-005) @ 26.0	2,547 gpm	Oct-Nov 2017
		02B	41.3	48.0	6.7 mi	2,398,468 gal				Salem Fork Creek	West Fork	Tennile Creek										
2017	3	03A	48.0	65.5	17.5 mi	6,284,655 gal	1,500 gpm	2.04%	74.9	Little Kanawha River	Little Kanawha	Upper Little Kanawha	73,491 gpm	65.5	1,933,094 gal	Discharge difference between Test Sections 3A and 3B in upland area @ 65.5	Little Kanawha	Upper Little Kanawha River	Clover Fork (NHD-027) @ 65.6	Clover Fork (NHD-027) @ 65.6	No public data available	Oct-Nov 2017
		03B	65.5	77.6	12.1 mi	4,331,561 gal				Reuse from Test Section 3A	Little Kanawha	Upper Little Kanawha										
2017	4	04A	77.6	87.4	9.8 mi	3,508,207 gal	1,500 gpm	0.30%	87.4	Reuse from Test Section 4B	Elk	Middle Elk River	234,947 gpm	87.4	6,193,059 gal	Discharge Test Section 4 in upland area near Elk River @ 87.4	Elk	Middle Elk River	Elk River (S-E68) @ 87.4	Elk River (S-E68) @ 87.4	234,947 gpm	Oct-Nov 2017
		04B	87.4	104.7	17.3 mi	6,193,059 gal	1,500 gpm	0.64%		Elk River	Elk	Middle Elk River										
2017	5	05A	104.7	120.1	15.4 mi	5,512,896 gal	1,500 gpm	0.30%	118.6	Gauley River	Gauley	Outlet Gauley River	504,900 gpm	120.1	5,512,896 gal	Discharge Test Section 5 in upland area near Gauley River @ 120.1	Gauley	Outlet Gauley River	Little Laurel Creek (S-R8) @ 120.3	Little Laurel Creek (S-R8) @ 120.3	No public data available	Oct-Nov 2017
		05B	120.1	127.8	7.7 mi	2,756,448 gal				Reuse from Test Section 5A	Gauley	Outlet Gauley River										
2018	6	06A	127.8	143.7	15.9 mi	5,691,886 gal	1,500 gpm	1.11%	143.7	Meadow River	Gauley	Meadow River	135,201 gpm	143.7	5,691,886 gal	Discharge Test Section 6 in upland area near Meadow River @ 143.7	Gauley	Meadow River	Meadow River (S-128) @ 143.7	Meadow River (S-128) @ 143.7	135,201 gpm	Oct-Nov 2018
		06B	143.7	154.5	10.8 mi	3,866,187 gal				Reuse from Test Section 6A	Gauley	Meadow River										
2018	7	07A	154.5	170.6	16.1 mi	5,763,483 gal	1,500 gpm	0.28%	170.6	Greenbrier River	Greenbrier	Wolf Creek-Greenbrier River	533,062 gpm	170.6	5,763,483 gal	Discharge Test Section 7 in upland area near Greenbrier River @ 170.6	Greenbrier	Wolf Creek-Greenbrier River	Greenbrier River (S-18) @ 170.6	Greenbrier River (S-18) @ 170.6	533,062 gpm	Oct-Nov 2018
		07B	170.6	181.8	11.2 mi	4,009,379 gal				Reuse from Test Section 7A	Greenbrier	Wolf Creek-Greenbrier River										
2018	8	08A	181.8	191.0	9.2 mi	3,293,419 gal	1,500 gpm	5.89%	181.9	Reuse from Test Section 8B	Middle New	Indian Creek	25,469 gpm	181.8	4,904,330 gal	Discharge Test Section 8 in upland area near Indian Creek @ 181.9	Middle New	Indian Creek	Indian Creek (S-D31) @ 181.89	Indian Creek (S-D31) @ 181.89	25,469 gpm	Oct-Nov 2018
		08B	191.0	204.7	13.7 mi	4,904,330 gal				Indian Creek	Middle New	Indian Creek										
2018	9	09A	204.7	218.1	13.4 mi	4,796,936 gal	1,500 gpm	2.07%	233.8	Roanoke River	Upper Roanoke	Mason Creek-Roanoke River	72,593 gpm	234.0	5,691,886 gal	Discharge Test Section 9 in upland area near Roanoke River @ 234.0	Upper Roanoke	Mason Creek-Roanoke River	UNT/Roanoke River (S-11) @ 234.0	Roanoke River (NHD-124) @ 233.8	72,593 gpm	Oct-Nov 2018
		09B	218.1	234.0	15.9 mi	5,691,886 gal	1,500 gpm	2.07%		Section 9A + Roanoke River	Upper Roanoke	Mason Creek-Roanoke River										
2018	10	10A	234.0	247.1	13.1 mi	4,689,542 gal	1,500 gpm	3.18%	262.8	Blackwater River	Banister	Upper Blackwater River	47,124 gpm	262.7	4,689,542 gal	Discharge Test Section 10 in upland area near Blackwater River @ 262.7	Banister	Upper Blackwater River	Blackwater River (NHD-162) @ 262.8	Blackwater River (NHD-162) @ 262.8	47,124 gpm	Oct-Nov 2018
		10B	247.1	256.9	9.8 mi	3,508,207 gal				Reuse from Test Section 10A	Banister	Upper Blackwater River										
2018	11	11A	262.7	267.3	4.6 mi	1,646,709 gal	1,500 gpm	3.18%	262.8	Section 11B + Blackwater River	Banister	Upper Blackwater River	47,124 gpm	262.7	1,646,709 gal	Discharge Test Sections 11A and 11B in upland area near Blackwater River @ 262.7	Banister	Upper Blackwater River	Blackwater River (NHD-162) @ 262.8	Blackwater River (NHD-162) @ 262.8	47,124 gpm	Oct-Nov 2018
		11B	267.3	270.0	2.7 mi	966,547 gal				Blackwater River	Banister	Upper Blackwater River										
2018	11C	11C	270.0	286.2	16.2 mi	5,799,281 gal	1,500 gpm	1.06%	286.3	Section 11D + Pigg River	Banister	Lower Pigg River	141,709 gpm	286.2	5,799,281 gal	Discharge Test Sections 11C, 11D, and 11E in upland area near Pigg River @ 286.2	Banister	Lower Pigg River	Pigg River (S-E11) @ 286.3	Pigg River (S-E11) @ 286.3	141,709 gpm	Oct-Nov 2018
		11D	286.2	295.1	8.9 mi	3,186,025 gal				Section 11E + Pigg River	Banister	Lower Pigg River										
		11E	295.1	301.0	5.87 mi	2,101,344 gal				Pigg River	Banister	Lower Pigg River										
Proposed Water Usage for 2017 (only highlighted quantities from 2017)						28,387,836 gal																
Proposed Water Usage for 2018 (only highlighted quantities from 2018)						34,187,117 gal																
Actual Water Required (all highlighted quantities)						62,574,953 gal																
Gross Water Required (add all required water)						107,741,326 gal																

\*Daily average flow for streams obtained by calculating the average daily output of the above streams for the months of September through December over their entire recording history as made available by USGS.



**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR2-46a**

**Table 2-B-1, Revised January 2016  
Wetlands Crossed by the MVP Project a/**

STATE	COUNTY	Wetland ID b/	Milepost	Wetland Type c/	Length of Crossing (Feet) d/	Construction Impacts (acres) e/	Operational Impacts (acres) e/	Crossing Method
West Virginia	Wetzel	W-A1	0.7	PEM		<0.01	<0.01	Open-Cut
West Virginia	Wetzel	W-A2	0.7	PEM	49	0.07	0.05	Open-Cut
West Virginia	Wetzel	W-A4	1.5	PEM	11	0.02	0.01	Open-Cut
West Virginia	Wetzel	NWI-152	2.0	R5UBH		0.03		Open-Cut
West Virginia	Wetzel	W-A36	5.3	PEM		<0.01		Open-Cut
West Virginia	Wetzel	W-A27	5.6	PEM/PFO		<0.01		Open-Cut
West Virginia	Wetzel	W-A27	5.6	PEM/PFO	55	0.10	0.07	Open-Cut
West Virginia	Wetzel	W-A35	6.5	PEM	2	0.01	<0.01	Open-Cut
West Virginia	Wetzel	W-A28	6.6	PEM		0.26		Open-Cut
West Virginia	Wetzel	W-A29	6.6	NR		0.01		Open-Cut
West Virginia	Wetzel	W-A30	6.6	PEM		0.15		Open-Cut
West Virginia	Wetzel	W-A31	6.6	PEM		0.03		Open-Cut
West Virginia	Wetzel	W-A34	6.6	PEM	64	0.08	0.06	Open-Cut
West Virginia	Wetzel	W-A32	6.7	PEM		<0.01		Open-Cut
West Virginia	Wetzel	W-A32	6.7	PEM		0.07		Open-Cut
West Virginia	Wetzel	W-A33	7.2	PEM		0.03		Open-Cut
West Virginia	Wetzel	W-A26	7.7	PEM		0.21		Open-Cut
West Virginia	Wetzel	W-A26	7.7	PEM		0.22	0.14	Open-Cut
West Virginia	Wetzel	W-J33	8.8	PEM		0.02	<0.01	Open-Cut
West Virginia	Harrison	W-A6	11.4	PEM		<0.01		Open-Cut
West Virginia	Harrison	W-B55	12.2	PEM	11	0.02	0.01	Open-Cut
West Virginia	Harrison	W-J32	15.7	PEM		0.04	0.02	Open-Cut
West Virginia	Harrison	W-F58	17.8	PEM		<0.01		Open-Cut
West Virginia	Harrison	W-A10	17.9	PEM	7	0.03	0.02	Open-Cut
West Virginia	Harrison	W-F67A	17.9	PEM		<0.01	<0.01	Open-Cut
West Virginia	Harrison	W-B1	18.7	PEM	8	0.01	0.01	Open-Cut
West Virginia	Harrison	NWI-154	18.8	PEM1E		0.08		Open-Cut
West Virginia	Harrison	W-A39	18.8	PEM		0.03		Open-Cut
West Virginia	Harrison	W-A40	18.8	PEM		0.09		Open-Cut
West Virginia	Harrison	W-A40	18.8	PEM	78	0.22	0.07	Open-Cut
West Virginia	Harrison	W-A37	18.9	PEM		<0.01		Open-Cut
West Virginia	Harrison	W-A11	21.7	PEM		0.01	<0.01	Open-Cut
West Virginia	Harrison	W-F62	22.4	PEM		0.11	0.07	Open-Cut
West Virginia	Harrison	W-F63	22.4	NR		0.02	0.01	Open-Cut
West Virginia	Harrison	W-F61	22.6	PEM		<0.01		Open-Cut
West Virginia	Harrison	W-F59	22.7	PEM		<0.01		Open-Cut
West Virginia	Harrison	W-F60	22.7	PEM		<0.01		Open-Cut
West Virginia	Harrison	W-F4	23.1	PEM		0.03	0.02	Open-Cut
West Virginia	Harrison	W-F67B	23.1	PEM		<0.01		Open-Cut
West Virginia	Harrison	W-B56	25.1	PEM		0.09		Open-Cut
West Virginia	Harrison	W-F52	30.9	PEM		0.06		Open-Cut
West Virginia	Harrison	W-F53	30.9	PEM		0.04	<0.01	Open-Cut
West Virginia	Harrison	W-F54	30.9	PEM		0.01	0.01	Open-Cut
West Virginia	Harrison	W-F55	30.9	PEM		0.01		Open-Cut
West Virginia	Harrison	W-F55	30.9	PEM	31	0.05	0.03	Open-Cut
West Virginia	Harrison	W-K43	31.4	PEM	126	0.21	0.15	Open-Cut
West Virginia	Harrison	W-K44	31.4	PEM	30	0.07	0.05	Open-Cut
West Virginia	Doddridge	W-K52	31.9	PEM		0.01	0.01	Open-Cut
West Virginia	Doddridge	W-K45	32.6	PEM	16	0.04	0.02	Open-Cut
West Virginia	Harrison	W-K48	32.8	PEM		0.01	<0.01	Open-Cut
West Virginia	Harrison	W-K49	32.8	PEM	9	0.01	0.01	Open-Cut
West Virginia	Harrison	W-K51	32.9	PEM	49	0.03	0.03	Open-Cut
West Virginia	Doddridge	W-K40	34.4	PEM	20	0.01	0.01	Open-Cut
West Virginia	Doddridge	W-K41	34.4	PEM	16	0.02	0.02	Open-Cut
West Virginia	Doddridge	W-A23	35.0	PEM		0.18		Open-Cut
West Virginia	Doddridge	W-A23	35.0	PEM	104	0.37	0.12	Open-Cut
West Virginia	Harrison	W-A22	37.6	PEM		0.02		Open-Cut

STATE	COUNTY	Wetland ID b/	Milepost	Wetland Type c/	Length of Crossing (Feet) d/	Construction Impacts (acres) e/	Operational Impacts (acres) e/	Crossing Method
West Virginia	Harrison	W-A24	37.9	PEM		0.01		Open-Cut
West Virginia	Lewis	W-J40	38.2	PEM		0.15		Open-Cut
West Virginia	Lewis	W-J40	38.2	PEM	152	0.29	0.18	Open-Cut
West Virginia	Lewis	W-I26	41.4	PEM		<0.01		Open-Cut
West Virginia	Lewis	W-I28	41.9	PEM		<0.01		Open-Cut
West Virginia	Lewis	W-I27	42.0	PEM		0.04		Open-Cut
West Virginia	Lewis	W-J17	43.1	PEM		<0.01		Open-Cut
West Virginia	Lewis	W-J17	43.1	PEM		<0.01	<0.01	Open-Cut
West Virginia	Lewis	W-J18	43.1	PEM		0.02	0.01	Open-Cut
West Virginia	Lewis	W-J19	43.1	PEM		0.01	0.01	Open-Cut
West Virginia	Lewis	W-J20	43.2	PEM		0.01	0.01	Open-Cut
West Virginia	Lewis	W-J21	43.3	PEM		0.01	<0.01	Open-Cut
West Virginia	Lewis	W-J23	43.3	PEM	9	0.01	0.01	Open-Cut
West Virginia	Lewis	W-B57	43.4	PEM		0.01		Open-Cut
West Virginia	Lewis	W-B57	43.4	PEM		0.02		Open-Cut
West Virginia	Lewis	W-J14	43.4	PEM		0.03	0.02	Open-Cut
West Virginia	Lewis	W-J16	43.4	PEM		0.01	<0.01	Open-Cut
West Virginia	Lewis	W-K33-PEM	44.8	PEM		0.15		Open-Cut
West Virginia	Lewis	W-K33-PEM	44.8	PEM	37	0.91	0.04	Open-Cut
West Virginia	Lewis	W-K33-PSS	44.8	PSS		<0.01		Open-Cut
West Virginia	Lewis	W-K34	44.9	PSS	20	0.03	0.02	Open-Cut
West Virginia	Lewis	W-K39	45.0	PEM		<0.01	<0.01	Open-Cut
West Virginia	Lewis	W-K29	45.9	PEM		0.02		Open-Cut
West Virginia	Lewis	W-K30	45.9	PEM		0.01		Open-Cut
West Virginia	Lewis	W-K31	45.9	PEM		<0.01		Open-Cut
West Virginia	Lewis	W-K31	45.9	PEM	77	0.11	0.08	Open-Cut
West Virginia	Lewis	W-B46	46.0	PEM		<0.01		Open-Cut
West Virginia	Lewis	W-B46	46.0	PEM		0.01		Open-Cut
West Virginia	Lewis	W-B46	46.0	PEM	67	0.12	0.08	Open-Cut
West Virginia	Lewis	W-B47	46.0	PEM		0.06		Open-Cut
West Virginia	Lewis	W-B47	46.0	PEM	83	0.15	0.10	Open-Cut
West Virginia	Lewis	W-B48	46.0	PEM		0.01		Open-Cut
West Virginia	Lewis	W-B49	46.0	PEM		<0.01		Open-Cut
West Virginia	Lewis	W-B51	46.1	PEM	4	0.01	<0.01	Open-Cut
West Virginia	Lewis	W-B52	46.1	PEM		0.01		Open-Cut
West Virginia	Lewis	W-B54	46.4	PEM	11	0.01	0.01	Open-Cut
West Virginia	Lewis	W-H112	47.0	PEM	86	0.02	0.02	Open-Cut
West Virginia	Lewis	W-H111	47.1	PEM	91	<0.01	0.18	Open-Cut
West Virginia	Lewis	W-H110	47.3	PEM		0.26		Open-Cut
West Virginia	Lewis	W-H109	48.0	PEM		<0.01	<0.01	Open-Cut
West Virginia	Lewis	W-I22	48.0	PSS		<0.01	<0.01	Open-Cut
West Virginia	Lewis	W-I22	48.0	PSS		0.01		Open-Cut
West Virginia	Lewis	W-I22	48.1	PSS	26	0.04	0.03	Open-Cut
West Virginia	Lewis	W-L42	51.7	PEM		<0.01		Open-Cut
West Virginia	Lewis	W-K28	51.8	PEM		<0.01		Open-Cut
West Virginia	Lewis	W-K28	51.8	PEM		0.02		Open-Cut
West Virginia	Lewis	W-L41	52.1	PEM		0.02		Open-Cut
West Virginia	Lewis	W-K27	52.8	PEM		0.03		Open-Cut
West Virginia	Lewis	W-L39	54.1	PEM		0.01		Open-Cut
West Virginia	Lewis	W-I15	55.3	PEM		0.01	0.01	Open-Cut
West Virginia	Lewis	W-I15	55.3	PEM	33	0.05	0.04	Open-Cut
West Virginia	Lewis	W-I16	55.6	PEM	41	0.03	0.02	Open-Cut
West Virginia	Lewis	W-I21	55.6	PEM		0.06	0.03	Open-Cut
West Virginia	Lewis	W-I17	55.8	PEM		<0.01	<0.01	Open-Cut
West Virginia	Lewis	W-I20	55.8	PEM		0.01	<0.01	Open-Cut
West Virginia	Lewis	W-H103	58.6	PEM	7	0.01	0.01	Open-Cut
West Virginia	Lewis	W-H105	58.7	PEM		0.01		Open-Cut
West Virginia	Lewis	W-H106	58.7	PEM		0.07		Open-Cut
West Virginia	Lewis	W-H107	58.7	PEM		0.03	0.01	Open-Cut

STATE	COUNTY	Wetland ID b/	Milepost	Wetland Type c/	Length of Crossing (Feet) d/	Construction Impacts (acres) e/	Operational Impacts (acres) e/	Crossing Method
West Virginia	Lewis	W-L37	59.0	PEM		<0.01		Open-Cut
West Virginia	Lewis	W-L37	59.0	PEM		0.01	<0.01	Open-Cut
West Virginia	Lewis	W-H98	59.3	PEM		0.04	0.03	Open-Cut
West Virginia	Lewis	W-H97	59.8	PEM		<0.01		Open-Cut
West Virginia	Lewis	W-H108	60.0	PEM	12	0.03	0.02	Open-Cut
West Virginia	Lewis	W-L36	60.1	PEM		<0.01		Open-Cut
West Virginia	Lewis	W-L36	60.1	PEM		0.04		Open-Cut
West Virginia	Lewis	W-H95	60.4	PEM	53	0.09	0.06	Open-Cut
West Virginia	Lewis	W-H96	60.4	PEM		0.01	<0.01	Open-Cut
West Virginia	Braxton	W-L33	68.5	PEM		0.02		Open-Cut
West Virginia	Braxton	W-J10	72.3	PEM		0.01	<0.01	Open-Cut
West Virginia	Braxton	W-J9	72.3	PEM		<0.01		Open-Cut
West Virginia	Braxton	W-J9	72.3	PEM		0.01		Open-Cut
West Virginia	Braxton	W-I12	72.5	PEM		<0.01		Open-Cut
West Virginia	Braxton	W-K25	72.8	PEM	6	0.05	0.03	Open-Cut
West Virginia	Braxton	W-K26	72.8	PEM		0.01		Open-Cut
West Virginia	Braxton	W-K24	73.6	PSS		0.01	<0.01	Open-Cut
West Virginia	Braxton	W-H90	74.2	PEM	30	0.04	0.03	Open-Cut
West Virginia	Braxton	W-H92	74.8	PEM		0.01		Open-Cut
West Virginia	Braxton	W-H92	74.8	PEM		0.01		Open-Cut
West Virginia	Braxton	W-H93	74.8	PEM		<0.01		Open-Cut
West Virginia	Braxton	W-H93	74.8	PEM		0.01		Open-Cut
West Virginia	Braxton	W-H94	75.0	PEM		<0.01		Open-Cut
West Virginia	Braxton	W-L32	75.1	PEM		<0.01		Open-Cut
West Virginia	Braxton	W-H89	77.0	PEM		0.01	<0.01	Open-Cut
West Virginia	Braxton	W-AA3	77.5	PEM		0.01	<0.01	Open-Cut
West Virginia	Braxton	W-AA4	77.5	PEM		0.01		Open-Cut
West Virginia	Braxton	W-I11	78.9	PEM		0.01	0.01	Open-Cut
West Virginia	Webster	W-R2	82.4	PEM		0.06		Open-Cut
West Virginia	Webster	W-R3	82.4	PEM		0.02		Open-Cut
West Virginia	Webster	W-F45	82.6	PEM		<0.01		Open-Cut
West Virginia	Webster	W-F46	82.6	PEM		<0.01	<0.01	Open-Cut
West Virginia	Webster	W-R4	82.6	PEM		0.04		Open-Cut
West Virginia	Webster	W-B44	85.5	PEM		0.01	<0.01	Open-Cut
West Virginia	Webster	W-B42	86.5	PEM		0.02	0.01	Open-Cut
West Virginia	Webster	W-B43	86.5	PEM		<0.01		Open-Cut
West Virginia	Webster	W-H75	88.1	PEM	5	0.01	0.01	Open-Cut
West Virginia	Webster	W-H79	88.5	PEM	9	0.01	0.01	Open-Cut
West Virginia	Webster	W-T2	88.5	PEM		<0.01		Open-Cut
West Virginia	Webster	W-H81	88.7	PEM		0.03	0.01	Open-Cut
West Virginia	Webster	W-H82	88.8	PEM		0.01	0.01	Open-Cut
West Virginia	Webster	W-H86	89.3	PEM		<0.01	<0.01	Open-Cut
West Virginia	Webster	W-H83	89.4	PEM		0.02		Open-Cut
West Virginia	Webster	W-H85	89.7	PEM		0.01	<0.01	Open-Cut
West Virginia	Webster	W-T4	90.1	PEM		0.07		Open-Cut
West Virginia	Webster	W-T3	90.2	PEM		<0.01		Open-Cut
West Virginia	Webster	W-T5	90.2	PEM		0.02		Open-Cut
West Virginia	Webster	W-T6	90.7	PEM		0.05		Open-Cut
West Virginia	Webster	W-T7	90.7	PEM		0.02		Open-Cut
West Virginia	Webster	W-A20-PEM	91.6	PEM		0.01		Open-Cut
West Virginia	Webster	W-A20-PFO	91.7	PFO	46	0.07	0.05	Open-Cut
West Virginia	Webster	W-H68	91.9	PEM		<0.01		Open-Cut
West Virginia	Webster	W-H69	91.9	PEM		0.01		Open-Cut
West Virginia	Webster	W-H70	92.5	PEM		0.01		Open-Cut
West Virginia	Webster	W-H71	92.5	PEM		0.03		Open-Cut
West Virginia	Webster	W-H72	92.7	PEM		0.01		Open-Cut
West Virginia	Webster	W-H73	92.7	PEM		0.01		Open-Cut
West Virginia	Webster	W-H74	92.7	PEM		0.01		Open-Cut
West Virginia	Webster	W-H66	93.1	PFO		0.01	<0.01	Open-Cut

STATE	COUNTY	Wetland ID b/	Milepost	Wetland Type c/	Length of Crossing (Feet) d/	Construction Impacts (acres) e/	Operational Impacts (acres) e/	Crossing Method
West Virginia	Webster	W-H66	93.1	PFO	187	0.25	0.18	Open-Cut
West Virginia	Webster	W-H67	93.1	PFO		<0.01	<0.01	Open-Cut
West Virginia	Webster	W-H67	93.1	PFO	66	0.09	0.07	Open-Cut
West Virginia	Webster	W-H64-PEM1	93.2	PEM		0.03	0.01	Open-Cut
West Virginia	Webster	W-H64-PEM2	93.2	PEM	30	0.03	0.02	Open-Cut
West Virginia	Webster	W-H64-PSS	93.2	PSS	22	0.04	0.03	Open-Cut
West Virginia	Webster	W-H56	93.4	PEM		0.02	0.01	Open-Cut
West Virginia	Webster	W-O14	93.9	PEM		<0.01		Open-Cut
West Virginia	Webster	W-O15	93.9	PEM		0.02	0.01	Open-Cut
West Virginia	Webster	W-O13	94.1	PEM		0.07	0.04	Open-Cut
West Virginia	Webster	W-O9	94.5	PEM		0.02	<0.01	Open-Cut
West Virginia	Webster	W-O6	94.6	PEM		0.01		Open-Cut
West Virginia	Webster	W-O7	94.6	PEM		0.01		Open-Cut
West Virginia	Webster	W-O8	94.6	PEM		0.01		Open-Cut
West Virginia	Webster	W-H58	95.1	PEM		0.03	0.01	Open-Cut
West Virginia	Webster	W-H59-PEM	95.3	PEM		0.01		Open-Cut
West Virginia	Webster	W-O1	95.4	PEM		0.01	<0.01	Open-Cut
West Virginia	Webster	W-O2	95.4	PEM		<0.01		Open-Cut
West Virginia	Webster	W-H60	95.5	PEM	65	0.09	0.07	Open-Cut
West Virginia	Webster	W-H61	95.6	PEM	45	0.01	0.01	Open-Cut
West Virginia	Webster	W-H62	95.6	PEM		0.03	<0.01	Open-Cut
West Virginia	Webster	W-B39	96.6	PEM	44	0.09	0.06	Open-Cut
West Virginia	Webster	W-B31	97.7	PEM	14	0.03	0.02	Open-Cut
West Virginia	Webster	W-B38	97.7	NR		0.05		Open-Cut
West Virginia	Webster	W-B35	97.8	PSS	6	0.01	0.01	Open-Cut
West Virginia	Webster	W-A18	98.8	PEM		0.20		Open-Cut
West Virginia	Webster	W-E25	101.8	PEM		0.05	0.04	Open-Cut
West Virginia	Webster	W-E27	101.9	PEM		0.05	0.05	Open-Cut
West Virginia	Webster	W-E28	102.4	PSS		0.02	0.01	Open-Cut
West Virginia	Webster	W-E29	102.4	PEM		<0.01	<0.01	Open-Cut
West Virginia	Webster	W-E30	102.4	PEM		<0.01		Open-Cut
West Virginia	Webster	W-E31	102.5	PEM		0.03	0.02	Open-Cut
West Virginia	Webster	W-F18	103.2	PEM		<0.01		Open-Cut
West Virginia	Webster	W-F19	103.2	PEM		0.02		Open-Cut
West Virginia	Webster	W-F20	103.2	PEM		0.02		Open-Cut
West Virginia	Webster	W-F21	103.2	PEM		0.01		Open-Cut
West Virginia	Webster	W-F22	103.2	PEM		<0.01		Open-Cut
West Virginia	Webster	W-F23	103.3	PEM		<0.01		Open-Cut
West Virginia	Webster	W-F24	103.3	PEM		<0.01		Open-Cut
West Virginia	Webster	W-F25	103.3	PEM		<0.01		Open-Cut
West Virginia	Webster	W-F26	103.7	PEM		<0.01	<0.01	Open-Cut
West Virginia	Webster	W-F28	104.1	PEM		<0.01	<0.01	Open-Cut
West Virginia	Webster	W-F29	104.1	PEM		0.01	<0.01	Open-Cut
West Virginia	Webster	W-F40	104.2	PEM		0.02		Open-Cut
West Virginia	Webster	W-F36	104.5	PEM		0.01		Open-Cut
West Virginia	Webster	W-F37	104.5	PEM		<0.01		Open-Cut
West Virginia	Webster	W-F38	104.5	PSS		0.01		Open-Cut
West Virginia	Webster	W-F32	104.6	PEM		0.01		Open-Cut
West Virginia	Webster	W-F33	104.6	PEM		0.02		Open-Cut
West Virginia	Webster	W-F31	104.7	PEM		0.01		Open-Cut
West Virginia	Webster	W-F41	104.7	PEM		0.01		Open-Cut
West Virginia	Webster	W-F42	104.7	PEM		0.02		Open-Cut
West Virginia	Webster	W-B30	106.2	PEM	18	0.05	0.03	Open-Cut
West Virginia	Webster	W-B28	106.8	PEM	56	0.10	0.06	Open-Cut
West Virginia	Webster	W-E21	109.2	PEM	22	0.04	0.03	Open-Cut
West Virginia	Webster	W-E18	109.5	PEM		0.02	0.01	Open-Cut
West Virginia	Webster	W-E18	109.5	PSS	44	0.05	0.04	Open-Cut
West Virginia	Nicholas	W-E16	109.7	PEM	13	0.01	0.01	Open-Cut
West Virginia	Nicholas	W-E13	109.8	PFO		<0.01		Open-Cut

STATE	COUNTY	Wetland ID b/	Milepost	Wetland Type c/	Length of Crossing (Feet) d/	Construction Impacts (acres) e/	Operational Impacts (acres) e/	Crossing Method
West Virginia	Nicholas	W-F13	110.9	PEM		0.04	0.02	Open-Cut
West Virginia	Nicholas	W-F12	111.0	PEM	57	0.11	0.07	Open-Cut
West Virginia	Nicholas	W-F15	111.0	PEM		<0.01		Open-Cut
West Virginia	Nicholas	W-F11	111.1	PEM	91	0.15	0.10	Open-Cut
West Virginia	Nicholas	W-K20	111.1	PEM		0.01	<0.01	Open-Cut
West Virginia	Nicholas	W-K23	111.1	PEM	32	0.05	0.03	Open-Cut
West Virginia	Nicholas	W-C22	112.4	PEM		0.01	<0.01	Open-Cut
West Virginia	Nicholas	W-E35	112.6	PEM		<0.01		Open-Cut
West Virginia	Nicholas	W-E36	112.6	PEM		<0.01		Open-Cut
West Virginia	Nicholas	W-E37	112.6	PEM		<0.01		Open-Cut
West Virginia	Nicholas	W-E37	112.6	PEM		0.01		Open-Cut
West Virginia	Nicholas	W-E37	112.6	PEM		0.03		Open-Cut
West Virginia	Nicholas	W-E32	112.7	PEM		<0.01		Open-Cut
West Virginia	Nicholas	W-E32	112.7	PEM		0.04		Open-Cut
West Virginia	Nicholas	W-E33	112.7	PEM		<0.01		Open-Cut
West Virginia	Nicholas	W-E34	112.7	PEM		0.01		Open-Cut
West Virginia	Nicholas	W-C20	112.8	PEM		0.09		Open-Cut
West Virginia	Nicholas	W-B27	113.0	PEM		0.05	0.04	Open-Cut
West Virginia	Nicholas	W-FF6-PEM	113.2	PEM	105	0.18	0.12	Open-Cut
West Virginia	Nicholas	W-FF6-PSS	113.2	PSS	55	0.10	0.06	Open-Cut
West Virginia	Nicholas	W-FF2	113.6	PEM		0.03		Open-Cut
West Virginia	Nicholas	W-FF3	113.9	PEM	13	0.04	0.02	Open-Cut
West Virginia	Nicholas	W-FF4	114.2	PEM		<0.01	<0.01	Open-Cut
West Virginia	Nicholas	W-A17	114.3	PEM	55	0.08	0.05	Open-Cut
West Virginia	Nicholas	W-A15	114.6	PSS	67	0.09	0.06	Open-Cut
West Virginia	Nicholas	W-A14	114.8	PFO	56	0.10	0.07	Open-Cut
West Virginia	Nicholas	W-H52	115.5	PEM	33	0.06	0.04	Open-Cut
West Virginia	Nicholas	W-H50	115.7	PEM		0.01		Open-Cut
West Virginia	Nicholas	W-N25	116.3	PEM		0.01	<0.01	Open-Cut
West Virginia	Nicholas	W-N24	116.6	PEM		<0.01		Open-Cut
West Virginia	Nicholas	W-N22	116.7	PEM		<0.01		Open-Cut
West Virginia	Nicholas	W-I7	117.0	PFO	15	0.04	0.02	Open-Cut
West Virginia	Nicholas	W-K13	118.5	PEM		0.69		Open-Cut
West Virginia	Nicholas	W-K16	118.5	PEM		0.50		Open-Cut
West Virginia	Nicholas	W-J8	119.4	PFO	56	0.05	0.04	Open-Cut
West Virginia	Nicholas	W-R5	120.4	PEM		<0.01	<0.01	Open-Cut
West Virginia	Nicholas	W-R6	120.5	PEM		<0.01		Open-Cut
West Virginia	Nicholas	W-R6	120.5	PEM		<0.01		Open-Cut
West Virginia	Nicholas	W-R7	120.5	PEM		<0.01		Open-Cut
West Virginia	Nicholas	W-R8	120.5	PEM		0.01	<0.01	Open-Cut
West Virginia	Nicholas	W-X1	120.5	PEM		<0.01		Open-Cut
West Virginia	Nicholas	W-X5	120.5	PFO		<0.01		Open-Cut
West Virginia	Nicholas	W-X6	120.5	PFO		<0.01		Open-Cut
West Virginia	Nicholas	W-X7	120.5	PEM		<0.01		Open-Cut
West Virginia	Nicholas	W-X2	120.6	PEM		0.02		Open-Cut
West Virginia	Nicholas	W-X3	120.6	PEM		0.01		Open-Cut
West Virginia	Nicholas	W-X4	120.9	PEM		0.01		Open-Cut
West Virginia	Nicholas	W-U6	121.1	PSS		0.01		Open-Cut
West Virginia	Nicholas	W-X9	121.1	PSS		0.03	<0.01	Open-Cut
West Virginia	Nicholas	W-U3	121.7	PEM		0.01		Open-Cut
West Virginia	Nicholas	W-J7	122.0	PFO	39	0.07	0.05	Open-Cut
West Virginia	Nicholas	W-W3	122.5	PEM		<0.01		Open-Cut
West Virginia	Nicholas	W-W4	122.5	PEM		0.01		Open-Cut
West Virginia	Nicholas	W-W4	122.5	PEM		0.02		Open-Cut
West Virginia	Nicholas	W-W5	122.5	PEM		0.01		Open-Cut
West Virginia	Nicholas	W-W7	122.5	PEM		0.02		Open-Cut
West Virginia	Nicholas	W-N18	122.8	PEM		0.01	0.01	Open-Cut
West Virginia	Nicholas	W-W1	122.8	PEM		0.01		Open-Cut
West Virginia	Nicholas	W-L30	124.1	PEM		0.01	<0.01	Open-Cut

STATE	COUNTY	Wetland ID b/	Milepost	Wetland Type c/	Length of Crossing (Feet) d/	Construction Impacts (acres) e/	Operational Impacts (acres) e/	Crossing Method
West Virginia	Nicholas	W-L31	124.3	PEM		<0.01		Open-Cut
West Virginia	Nicholas	W-L28	124.4	PEM		0.01	<0.01	Open-Cut
West Virginia	Nicholas	W-L27	124.5	PEM		<0.01		Open-Cut
West Virginia	Nicholas	W-M31	126.2	PEM		<0.01		Open-Cut
West Virginia	Nicholas	W-I11	126.5	PEM	24	0.06	0.04	Open-Cut
West Virginia	Nicholas	W-U7	126.6	PEM		0.07		Open-Cut
West Virginia	Nicholas	W-I5	126.8	PEM	14	0.01	0.01	Open-Cut
West Virginia	Nicholas	W-X10	127.2	PEM/PFO		<0.01		Open-Cut
West Virginia	Nicholas	W-N16	128.5	NR	37	0.03	0.03	Open-Cut
West Virginia	Nicholas	W-H46	130.1	PEM		0.01		Open-Cut
West Virginia	Nicholas	W-H48	130.1	PEM		0.01		Open-Cut
West Virginia	Nicholas	W-H49	130.1	PEM		<0.01		Open-Cut
West Virginia	Nicholas	W-H38	130.9	PEM		<0.01		Open-Cut
West Virginia	Nicholas	W-H41	130.9	PEM		0.02	0.01	Open-Cut
West Virginia	Nicholas	W-H34	131.2	PEM	36	0.05	0.04	Open-Cut
West Virginia	Nicholas	W-H35	131.2	PEM	28	0.02	0.02	Open-Cut
West Virginia	Nicholas	W-H31	131.8	PEM	24	0.01	0.01	Open-Cut
West Virginia	Nicholas	W-V4	132.0	PSS		<0.01		Open-Cut
West Virginia	Greenbrier	W-M15	135.9	PEM		<0.01	<0.01	Open-Cut
West Virginia	Greenbrier	W-M16	135.9	PEM		<0.01	<0.01	Open-Cut
West Virginia	Greenbrier	W-M17	135.9	PEM		<0.01	<0.01	Open-Cut
West Virginia	Greenbrier	W-M18	136.4	PEM	35	0.04	0.04	Open-Cut
West Virginia	Greenbrier	W-M20	136.5	PEM		<0.01	<0.01	Open-Cut
West Virginia	Greenbrier	W-M22	136.5	PSS		<0.01	<0.01	Open-Cut
West Virginia	Greenbrier	W-M23	136.5	PEM	54	0.06	0.05	Open-Cut
West Virginia	Greenbrier	W-J6b	137.4	PSS/PFO	28	0.07	0.05	Open-Cut
West Virginia	Greenbrier	NWI-151	138.5	PUBHx		0.07		Open-Cut
West Virginia	Greenbrier	W-J9	138.9	PEM		0.03		Open-Cut
West Virginia	Greenbrier	W-J5	139.7	PSS		0.01	<0.01	Open-Cut
West Virginia	Greenbrier	W-M4	142.8	PEM		<0.01		Open-Cut
West Virginia	Greenbrier	W-V6	143.0	PEM		0.13		Open-Cut
West Virginia	Greenbrier	W-M5	143.3	PEM		0.01		Open-Cut
West Virginia	Greenbrier	W-M6	143.3	PEM		0.02		Open-Cut
West Virginia	Greenbrier	W-I3	143.7	PEM	5	0.04	0.03	Open-Cut
West Virginia	Greenbrier	W-W14	143.7	PEM		0.05		Open-Cut
West Virginia	Greenbrier	W-W15	143.7	PEM		<0.01		Open-Cut
West Virginia	Greenbrier	W-L16	143.8	PEM	8	0.02	0.01	Open-Cut
West Virginia	Greenbrier	W-EE9	143.9	PEM		<0.01		Open-Cut
West Virginia	Greenbrier	W-L20	145.8	PEM		0.02		Open-Cut
West Virginia	Greenbrier	W-L21	145.8	PEM		0.03		Open-Cut
West Virginia	Greenbrier	W-L12	146.7	PEM		0.01	<0.01	Open-Cut
West Virginia	Greenbrier	W-L13	146.7	PEM	6	0.03	0.02	Open-Cut
West Virginia	Greenbrier	W-L19	146.7	PEM		<0.01		Open-Cut
West Virginia	Greenbrier	W-L19	146.7	PEM	61	0.11	0.07	Open-Cut
West Virginia	Greenbrier	W-L11	147.0	PEM		0.02	0.01	Open-Cut
West Virginia	Greenbrier	W-L2	147.9	PEM		<0.01		Open-Cut
West Virginia	Greenbrier	W-L3	147.9	PEM		<0.01		Open-Cut
West Virginia	Greenbrier	W-L3	147.9	PEM		0.01		Open-Cut
West Virginia	Greenbrier	W-L4	147.9	PEM		0.07	0.02	Open-Cut
West Virginia	Greenbrier	W-L8	147.9	PEM		<0.01		Open-Cut
West Virginia	Greenbrier	W-L2	148.0	PEM	32	0.03	0.03	Open-Cut
West Virginia	Greenbrier	W-L5	148.0	PEM		<0.01		Open-Cut
West Virginia	Greenbrier	W-L7	148.2	PEM		<0.01	<0.01	Open-Cut
West Virginia	Greenbrier	W-L6	148.3	PEM		0.04	0.02	Open-Cut
West Virginia	Greenbrier	W-L9	148.4	PEM		0.04	0.04	Open-Cut
West Virginia	Greenbrier	W-W10	150.2	PEM		0.05	0.04	Open-Cut
West Virginia	Greenbrier	W-W11	150.2	PEM		0.01	<0.01	Open-Cut
West Virginia	Greenbrier	W-W9	150.3	PEM		0.01		Open-Cut
West Virginia	Greenbrier	W-W9	150.3	PEM		0.01	0.01	Open-Cut

STATE	COUNTY	Wetland ID b/	Milepost	Wetland Type c/	Length of Crossing (Feet) d/	Construction Impacts (acres) e/	Operational Impacts (acres) e/	Crossing Method
West Virginia	Greenbrier	W-FF1	150.5	PEM	31	0.03	0.03	Open-Cut
West Virginia	Greenbrier	W-W13	150.6	PEM		<0.01		Open-Cut
West Virginia	Greenbrier	W-U8	152.6	PEM		<0.01		Open-Cut
West Virginia	Fayette	W-EE6	154.2	PEM		<0.01		Open-Cut
West Virginia	Greenbrier	NWI-150	154.5	PEM1Ad		1.96		Open-Cut
West Virginia	Greenbrier	W-K7	154.5	PEM	152	0.29	0.19	Open-Cut
West Virginia	Greenbrier	W-K9	154.6	PEM	475	0.78	0.53	Open-Cut
West Virginia	Greenbrier	W-K10	154.9	PEM		0.01	<0.01	Open-Cut
West Virginia	Greenbrier	W-K12	155.0	PEM		<0.01	<0.01	Open-Cut
West Virginia	Greenbrier	NWI-153	155.5	PEM1A		<0.01		Open-Cut
West Virginia	Greenbrier	NWI-149	156.0	PEM1Ad		<0.01		Open-Cut
West Virginia	Summers	W-EE4	158.5	PEM	20	0.05	0.04	Open-Cut
West Virginia	Summers	W-M2	159.0	PEM	22	0.04	0.02	Open-Cut
West Virginia	Summers	W-I10	161.4	PEM		0.07	0.06	Open-Cut
West Virginia	Summers	W-W16	161.9	PEM		<0.01		Open-Cut
West Virginia	Summers	W-N4	169.4	PFO	72	0.10	0.07	Open-Cut
West Virginia	Summers	W-N3	169.6	PEM	72	0.12	0.07	Open-Cut
West Virginia	Summers	NWI-134	170.5	PFO1A			0.32	Open-Cut
West Virginia	Summers	NWI-156	170.5	PFO1A		0.50		Open-Cut
West Virginia	Summers	NWI-157	170.5	PFO1A		0.04		Open-Cut
West Virginia	Summers	NWI-6	170.5	PFO1A	293			Open-Cut
West Virginia	Summers	W-K2-PEM	171.7	PEM	12	0.01	0.01	Open-Cut
West Virginia	Summers	W-G7	173.3	PEM	15	0.02	0.02	Open-Cut
West Virginia	Monroe	W-Q5	176.1	PEM		<0.01	<0.01	Open-Cut
West Virginia	Monroe	W-A13	181.5	PEM		0.04		Open-Cut
West Virginia	Monroe	W-A13	181.5	PEM	151	0.29	0.18	Open-Cut
West Virginia	Monroe	NWI-155	183.1	PUBHh		0.03		Open-Cut
West Virginia	Monroe	W-G6	189.1	PEM	18	0.03	0.02	Open-Cut
West Virginia	Monroe	W-G6	189.1	PEM	78	0.09	0.07	Open-Cut
West Virginia	Monroe	W-EE3	190.7	PEM		<0.01		Open-Cut
West Virginia	Monroe	W-E12	191.1	PEM		<0.01	<0.01	Open-Cut
West Virginia	Monroe	W-C13	193.6	PEM	136	0.22	0.15	Open-Cut
West Virginia	Monroe	W-C14	193.6	PEM		0.01	<0.01	Open-Cut
West Virginia	Monroe	W-C17	193.7	PEM		0.03	0.02	Open-Cut
Virginia	Giles	W-Z11	202.1	PEM	21	0.03	0.02	Open-Cut
Virginia	Giles	W-Z3	203.3	PSS/PFO	3	0.03	0.02	Open-Cut
Virginia	Giles	W-Z5	203.5	PEM		<0.01		Open-Cut
Virginia	Montgomery	NWI-131	225.6	PEM1C			0.04	Open-Cut
Virginia	Montgomery	NWI-145	225.6	PEM1C		0.13		Open-Cut
Virginia	Montgomery	NWI-4	225.6	PEM1C	39			Open-Cut
Virginia	Montgomery	W-C10	227.9	PEM		0.05	0.04	Open-Cut
Virginia	Montgomery	W-C11	227.9	PSS		0.01	<0.01	Open-Cut
Virginia	Montgomery	W-C12	227.9	PFO		0.04	0.02	Open-Cut
Virginia	Montgomery	W-C6	228.2	PEM	30	0.03	0.02	Open-Cut
Virginia	Montgomery	W-C5	228.3	PEM	26	0.02	0.02	Open-Cut
Virginia	Montgomery	NWI-139	232.6	PUBFx		0.24		Open-Cut
Virginia	Montgomery	NWI-129	233.8	R3UBH			0.10	Open-Cut
Virginia	Montgomery	NWI-141	233.8	R3USA		<0.01		Open-Cut
Virginia	Montgomery	NWI-143	233.8	R3UBH		0.15		Open-Cut
Virginia	Montgomery	NWI-3	233.8	R3UBH	87			Open-Cut
Virginia	Roanoke	NWI-138	241.4	PEM1B		<0.01		Open-Cut
Virginia	Roanoke	NWI-133	241.7	PSS1C			0.12	Open-Cut
Virginia	Roanoke	NWI-148	241.7	PSS1C		0.17		Open-Cut
Virginia	Roanoke	NWI-5	241.7	PSS1C	102			Open-Cut
Virginia	Roanoke	NWI-136	242.9	PSS/EM1C		0.06		Open-Cut
Virginia	Roanoke	W-Y2	243.3	PEM	22	0.03	0.02	Open-Cut
Virginia	Roanoke	W-Z8	243.3	PFO			<0.01	Open-Cut
Virginia	Roanoke	W-Z9	243.3	PFO			<0.01	Open-Cut
Virginia	Roanoke	NWI-135	243.7	PUBHh		0.01		Open-Cut



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Virginia	Roanoke	NWI-146	243.7	PFO/SS1A		0.06		Open-Cut
Virginia	Roanoke	W-B25-PEM	243.8	PEM	101	0.16	0.12	Open-Cut
Virginia	Roanoke	W-B24-PEM	243.9	PEM	60	0.09	0.07	Open-Cut
Virginia	Roanoke	W-B25-PSS2	243.9	PSS	223	0.38	0.25	Open-Cut
Virginia	Roanoke	W-B24-PSS	244.0	PSS	92	0.16	0.10	Open-Cut
Virginia	Franklin	W-G1	244.5	PEM	33	0.06	0.04	Open-Cut
Virginia	Franklin	W-D7	246.8	PEM		0.02	<0.01	Open-Cut
Virginia	Franklin	W-D5	247.2	PFO		0.02	0.01	Open-Cut
Virginia	Franklin	NWI-128	254.0	PSS1C			0.28	Open-Cut
Virginia	Franklin	NWI-142	254.0	PSS1C		0.56		Open-Cut
Virginia	Franklin	NWI-2	254.0	PSS1C	246			Open-Cut
Virginia	Franklin	W-E10	256.7	PEM		0.01		Open-Cut
Virginia	Franklin	W-E7	256.7	PEM	8	0.02	0.02	Open-Cut
Virginia	Franklin	W-E8	256.9	PEM	65	0.07	0.06	Open-Cut
Virginia	Franklin	NWI-1	260.1	PEM1A	103			Open-Cut
Virginia	Franklin	NWI-127	260.1	PEM1A			0.14	Open-Cut
Virginia	Franklin	NWI-140	260.1	PFO1A		0.01		Open-Cut
Virginia	Franklin	NWI-137	260.3	PEM1A		0.81		Open-Cut
Virginia	Franklin	NWI-132	260.6	PUBHx			0.02	Open-Cut
Virginia	Franklin	NWI-147	260.6	PUBHx		0.02		Open-Cut
Virginia	Franklin	NWI-130	264.6	PEM1/SS1C			0.03	Open-Cut
Virginia	Franklin	NWI-144	264.6	PEM1/SS1C		0.03		Open-Cut
Virginia	Franklin	W-A12-PFO	269.6	PFO		<0.01	<0.01	Open-Cut
Virginia	Franklin	W-DD1	269.6	PEM	24	0.05	0.03	Open-Cut
Virginia	Franklin	W-H17	274.6	PFO	80	0.15	0.10	Open-Cut
Virginia	Franklin	W-H16	275.0	PEM		0.03	0.02	Open-Cut
Virginia	Franklin	W-H15	275.1	PSS		0.01	<0.01	Open-Cut
Virginia	Franklin	W-H14	275.2	PEM		0.01	<0.01	Open-Cut
Virginia	Franklin	W-H11	275.7	PEM	40	0.05	0.04	Open-Cut
Virginia	Franklin	W-A8	275.8	PEM		0.02	0.01	Open-Cut
Virginia	Franklin	W-H9	277.1	PEM	4	0.01	0.01	Open-Cut
Virginia	Franklin	W-H6	278.3	PEM		0.01	<0.01	Open-Cut
Virginia	Pittsylvania	W-D3	282.0	PFO	2	0.04	0.02	Open-Cut
Virginia	Pittsylvania	W-B5	282.9	PEM		<0.01	<0.01	Open-Cut
Virginia	Pittsylvania	W-B4-PSS	283.1	PSS		<0.01	<0.01	Open-Cut
Virginia	Pittsylvania	W-A4	286.4	PEM		0.01	<0.01	Open-Cut
Virginia	Pittsylvania	W-C1	287.1	PEM		0.02	0.01	Open-Cut
Virginia	Pittsylvania	W-H5	287.7	PEM	121	0.21	0.14	Open-Cut
Virginia	Pittsylvania	W-B3	289.2	PEM		<0.01		Open-Cut
Virginia	Pittsylvania	W-CC2-PFO	290.7	PFO		<0.01		Open-Cut
Virginia	Pittsylvania	W-CC2-PEM	290.8	PEM		0.01	<0.01	Open-Cut
Virginia	Pittsylvania	W-Q2	293.7	PFO		0.16		Open-Cut
Virginia	Pittsylvania	W-Q2	293.7	PFO	260	0.61	0.30	Open-Cut
Virginia	Pittsylvania	W-Q1	293.8	PEM	4	0.01	0.01	Open-Cut
Virginia	Pittsylvania	W-G2	297.3	PEM	72	0.13	0.08	Open-Cut
Virginia	Pittsylvania	W-H26	298.0	PFO	18	0.02	0.01	Open-Cut
Virginia	Pittsylvania	W-H1	299.2	PEM		0.01	0.01	Open-Cut
Virginia	Pittsylvania	W-H2	299.3	PEM	560	0.80	0.57	Open-Cut
Virginia	Pittsylvania	W-H3	299.3	PEM	28	0.05	0.03	Open-Cut
Virginia	Pittsylvania	W-H19	300.6	PFO	28	0.04	0.04	Open-Cut
Virginia	Pittsylvania	W-H18-PEM	300.7	PEM		0.11	0.04	Open-Cut
Virginia	Pittsylvania	W-H18-PFO	300.7	PFO	134	0.17	0.12	Open-Cut

Notes:

a/ Based on NWI data and wetland delineations completed where access has been granted and surveyed as of July 31, 2015.

b/ Wetland IDs starting with NWI are from USFWS NWI 2009, Wetland IDs starting with W are field surveyed wetlands.

c/ Cowardin wetland classification

PEM - Palustrine Emergent

PSS - Palustrine Scrub/Shrub

PFO - Palustrine Forested

STATE	COUNTY	Wetland ID b/	Milepost	Wetland Type c/	Length of Crossing (Feet) d/	Construction Impacts (acres) e/	Operational Impacts (acres) e/	Crossing Method
d/ Length of crossing for linear crossings only. e/ Construction Impact acreage are inclusive of all Operational Impacts acreage.								

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR3-2**



# FRESHWATER MUSSEL GUIDELINES FOR VIRGINIA

Virginia Field Office  
U.S. Fish and Wildlife Service  
6669 Short Lane  
Gloucester, VA 23061  
804-693-6694

Virginia Dept. of Game and Inland Fisheries  
4010 West Broad Street  
P.O. Box 11104  
Richmond, VA 23230  
804-367-1000

Last Updated: 9-4-13

## DRAFT

### LIST OF ENCLOSURES

- 1 - Federal and State-Listed Species in Virginia
- 2 - Mussel Survey and Relocation Guidelines in Virginia
- 3 - Surveyor List for Atlantic Slope Mussels in Virginia
- 4 - Surveyor List for Upper Tennessee River Basin Mussels in Virginia
- 5 - Time of Year Restrictions (See Freshwater Mollusks)
- 6 - Map of Federally-Designated Critical Habitat for Mussels in Virginia

### INTRODUCTION

These guidelines are for project applicants and consultants planning certain activities that will impact rivers, streams, creeks, or other waterways in Virginia. The guidelines provide recommendations for conducting freshwater mussel surveys and relocations for small construction projects of short duration involving non-point pollution sources and affecting no more than 100 linear feet of waterway. Larger projects that impact waters containing State or federally listed mussels may require additional coordination or permits from the Virginia Department of Game and Inland Fisheries (VDGIF) and/or the U.S. Fish and Wildlife Service (FWS). Coordination with these agencies should always be initiated to ensure compliance with Federal and State laws.

FWS is responsible for the conservation and management of *federally* listed freshwater mussel species. VDGIF is responsible for the conservation and management of *all* freshwater mussel species throughout Virginia. If it is known that federally listed species or critical habitat (Enclosure 6) are not present within a two-mile radius of a given site, coordination with VDGIF, but not FWS, is still necessary.

### GENERAL LIFE HISTORY

Freshwater mussels are often prominent in benthic stream communities where, for the most part, they are sedentary filter-feeders consuming a major portion of the suspended particulate matter. Therefore, mussel beds act as biological filters by removing inorganic and organic material from

the water column while improving water quality downstream. Individuals are typically long-lived, with particular species living for more than 50 years, while some individuals may live for more than 130 years. Because these mussels are long-lived, sedentary filter-feeders, they are prominent indicators of water quality. Freshwater mussels also serve as an important dietary component to a variety of animals, including muskrats, otters, raccoons, and some fishes.

During spawning, male mussels release sperm into the water column that females take in through their gills. The resulting larvae (known as glochidia) may be released by the female into the water column or packaged to attract fish. These larvae must attach to a fish host to survive. While attached to the gills of the fish host, development of the glochidia begins. Once metamorphosis is complete, the juvenile mussel drops off the fish host and continues to develop on the stream bottom.

Freshwater mussels are generally divided into two reproductive categories known as short-term (tachytictic) or long-term brooders (bradytictic). Short-term brooders usually spawn and release glochidia during May through July in Virginia. Long-term brooders usually spawn from August through September and release glochidia the following April through June.

### **SURVEYS AND RELOCATIONS**

Enclosure 1 is a list of federally endangered, threatened, and candidate mussels and State endangered and threatened mussels. If a project occurs in an area that may contain suitable habitat for one of these species, FWS and/or VDGIF may recommend a survey. To determine which waterways may contain suitable habitat for State or federally-listed species, contact VDGIF for guidance (804-367-2211 or 2733). *Project applicants do not need to contact FWS if it is known that no federally-listed species or critical habitat are found within a two-mile radius of the project construction limits.* Applicants should contact FWS and VDGIF early in the planning process to determine whether federally or State-listed species or critical habitat may be impacted by the project. The effects of a project may include direct impacts from construction activities as well as downstream impacts from sedimentation and effluent discharges. If mussels were found during any previous survey/s, however old, coordination with VDGIF and FWS (where applicable) will be required. Surveys where mussels are not found (negative surveys) are typically valid for two years, after which another survey should be performed. Guidelines for freshwater mussel surveys and relocations are found in Enclosure 2. Surveyor lists are included in Enclosures 3 and 4. If listed mussels are found in or downstream of a project area, VDGIF and/or FWS are likely to recommend time of year or other restrictions to reduce impact to the mussels. Time of year restrictions are listed in Enclosure 5. If FWS determines that the project “may affect” a federally listed species or critical habitat, consultation with FWS will be required.

### **LAWS AND REGULATIONS PROTECTING MUSSELS**

**Federal Endangered Species Act (ESA)** (87 Stat. 884; 16 U.S.C. 1531 et seq.; 50 CFR Part 17) Section 7(a)(2) requires Federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any federally listed threatened or endangered species, or result in the destruction or adverse modification of critical habitat. The

regulations implementing this Act (50 CFR 402) require the Federal agency to review its actions at the earliest possible time to determine whether its actions may affect listed species or critical habitat. If a Federal agency determines that its action “may affect” a listed threatened or endangered species or critical habitat, the agency is required to consult with FWS regarding the degree of impact and measures available to avoid or minimize the adverse effects.

Section 9 of the ESA makes it illegal for any person subject to the jurisdiction of the United States to “take” any federally listed endangered or threatened species of fish or wildlife without a special exemption. “Person” is defined under the ESA to include individuals, corporations, partnerships, trusts, associations, or any other private entity; local, State, and Federal agencies; or any other entity subject to the jurisdiction of the United States. Under the ESA, “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt to engage in any such conduct. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering.

Section 10 establishes an incidental take permit provision for private entities that includes the development of habitat conservation plans. This provision authorizes FWS, under some circumstances, to permit the taking of federally listed fish and wildlife if such taking is "incidental to, and not the purpose of carrying out otherwise lawful activities." This process is also intended to be used to reduce conflicts between listed species and private development and to provide a framework that would encourage "creative partnerships" between the private sector and local, state, and Federal agencies in the interest of endangered and threatened species and habitat conservation. When approved by FWS, this regulatory procedure results in the issuance of a permit authorizing incidental take, provided such take is mitigated by appropriate conservation measures for habitat maintenance, enhancement, and protection, coincident with development.

**Virginia Endangered Species Act (29.1-563 - 29.1-570)** - This law provides that VDGIF is the state regulatory authority over federally or state listed endangered or threatened fish and wildlife in the Commonwealth, defining *fish or wildlife* as “. . . any member of the animal kingdom, vertebrate or invertebrate, except for the class *Insecta*, and includes any part, products, egg, or the dead body or parts thereof.” It prohibits the taking, transportation, processing, sale, or offer for sale within the Commonwealth of any fish or wildlife listed as a federally endangered or threatened species, except as permitted by the Board of Game and Inland Fisheries for zoological, educational, scientific, or captive propagation for preservation purposes. State-listed species are provided the same protection per VDGIF Regulation 4 VAC 15-20-130.

The law further authorizes the Board of the Virginia Department of Game and Inland Fisheries to adopt the Federal list of endangered and threatened species, to declare by regulation that species not listed by the Federal government are endangered or threatened in Virginia, and to prohibit by regulation the taking, transportation, processing, sale, or offer for sale of those species.

Implementing regulations pursuant to this authority (4 VAC 15-20-130 through 140) further define “take” and other terms similarly to the Federal ESA.

**Federal Endangered Species Act Cooperative Agreement** - Federally listed species are also protected under VDGIF jurisdiction via a cooperative agreement signed in 1976 with FWS pursuant to Section 6 of the ESA. This Cooperative Agreement recognizes VDGIF as the Virginia agency with regulatory and management authority in Virginia over federally listed or threatened animals, excluding insects, and provides for Federal/State cooperation regarding the protection and management of those species.

## Enclosure 1: Federal and State Listed Mussel Species in Virginia

U.S. Fish and Wildlife Service: Federally Endangered, Threatened, Proposed, and Candidate Species in Virginia

([http://www.fws.gov/northeast/virginiafield/pdf/endspecies/State\\_List/VaSpeciesList.pdf](http://www.fws.gov/northeast/virginiafield/pdf/endspecies/State_List/VaSpeciesList.pdf))

Virginia Department of Game and Inland Fisheries: Special Legal Status Faunal Species in Virginia

(<http://www.dgif.virginia.gov/wildlife/virginiatescspecies.pdf>)

## Enclosure 2: Mussel Survey and Relocation Guidelines in Virginia

There are four general assessment/survey types including:

- A. **Land-based review** - land-based site visit used to determine whether a water-based survey (site assessment, abbreviated, or full survey) is warranted. During a land-based review, the surveyor should look for obvious signs that would negate the need for additional, water-based surveys. For example, if it can be determined that the water body is non-perennial and/or contains no potential mussel habitat, it is unlikely that additional surveys would be needed or recommended by VDGIF or FWS. If it is determined that suitable habitat is present, the appropriate survey will be recommended. Photographs of the project site clearly showing instream habitat conditions, as well as a thorough site description, should be sent to VDGIF and FWS for review in lieu of the site assessment. If it is determined that suitable habitat is present, the appropriate survey will be recommended.
- B. **Site assessment** - 20 m upstream / 80 m downstream. A site assessment is recommended to determine if suitable habitat is present at a project location and may be recommended if the presence of a listed species is questionable. If suitable habitat is present, the appropriate survey will be recommended even in the absence of mussels, since the site assessment does not serve as a substitute for a mussel survey; however, the presence of freshwater mussels should be documented during the assessment.
- C. **Abbreviated survey** - 100 m upstream / 400 m downstream of project footprint.
- D. **Full survey** - 200 m upstream / 800 m downstream of project footprint.

The assessment/survey type is based on the scope of the project, potential impacts, and known species distributions. Survey lengths are measured from the project footprint. *Survey distances have primarily been developed for projects where physical alteration/disturbance of the stream is the primary impact (e.g., bridge repair/replacement, utility line crossings, etc.). Potential impacts from projects involving activities such as point and non-point source discharges, water intakes, and mining may require greater survey lengths and different methods.*

Project applicants should contract with a qualified mussel surveyor. Enclosures 3 and 4 provide a list of pre-approved mussel surveyors. If a pre-approved surveyor is not selected, please provide the proposed surveyor's qualifications and proposed survey design to FWS and VDGIF a



minimum of 30 days prior to survey initiation. Individuals who take federally listed threatened and endangered animals must obtain a permit from VDGIF, prior to surveying. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Contact information follows:

Ms. Shirl Dressler  
Virginia Department of Game and Inland Fisheries  
4010 W. Broad Street  
P.O. Box 11104  
Richmond, Virginia 23230-1104  
Phone: (804) 367-6913  
CollectionPermits@dgif.virginia.gov

A plan for mussel relocations, including initial surveys, must be presented to VDGIF and FWS (where applicable) for comment and approval prior to initiation of construction. Failure to provide a mussel relocation and/or survey plan may affect review and permitting of the project by VDGIF and FWS.

The recommended time of year to conduct mussel surveys and relocations is April 1 through October 31. Surveying during the cooler months is discouraged because mussels tend to be located deeper in the substrate and a greater percentage of the population is subsurface, therefore making them more difficult to find, particularly rare species. A more specific time frame may be recommended depending on the target species. A survey conducted outside this time frame requires VDGIF and Service (where applicable) approval.

### **Guidelines if federally-listed mussels are not present**

During the initial survey, mussel species within the direct project footprint or within imminent danger from project impacts may be relocated to suitable habitat unless otherwise directed by VDGIF. Suitable habitat typically includes an area upstream of project impacts and which also harbors freshwater mussels. If such an area cannot be found, the surveyor should determine the location of most suitable habitat. The direct project footprint shall be defined as the area of potentially disturbed substrate, any zone of heavy equipment operation, plus the distance downstream that may experience significant sedimentation from construction. If not determined prior to the relocation, the surveyor is responsible for determining the most suitable relocation area. All relocated mussels must be at least partially placed in the substrate, anterior end down. Project applicants may be required to monitor relocated mussels to determine relocation success/failure.

Standard mussel relocation protocols are outlined below. These protocols may vary based on factors such as the scope of the project and the results of the initial mussel survey. If the relocation protocols vary, VDGIF will clearly outline the appropriate protocols with the project applicant. It is the project applicant's responsibility to ensure that the proper relocation protocols are used and that the contracted mussel surveyor is aware of any modifications to the standard protocols.

The reach from which mussels are to be relocated will be at least 100 m long including the project footprint. The standard protocol is as follows:

- The 1<sup>st</sup> relocation survey must occur within 30-45 days of instream construction activities and at least 7 days prior to the 2<sup>nd</sup> relocation survey.
- The 2<sup>nd</sup> relocation survey must occur within 30 days of instream construction activities and at least 7 days after the 1<sup>st</sup> relocation survey.
- All relocation surveys must include at a minimum, two passes. The target relocation percentage of the initial number of mussels collected is 80%. If on the 2<sup>nd</sup> pass, more than 20% of the initial number of mussels is collected, continued passes must be conducted until no more than 20% of the initial number of mussels is collected on the final pass. The target relocation percentage may be adjusted higher or lower depending on the species and numbers collected during the initial survey.
- If a state-listed species is found, continued passes must be conducted until no listed species are found on the final pass. If repeated passes result in continual collection of state-listed species, modification of the survey techniques may be required.

If relocation surveys are not possible due to natural conditions such as high water, contact VDGIF to arrange contingency plans.

The location of all relocated mussels must be accurately documented (preferably with geographic coordinates) and reported to VDGIF. All state-listed mussel species must be tagged and measured for potential future monitoring.

Project applicants may be required to adhere to time of year restrictions for mussel relocations as directed by VDGIF. If this is the case, for the long-term brooders, relocations can occur from June 16 through August 14 and October 1 through October 31. For short-term brooders, relocations can occur from April 1 through May 14 and August 1 through October 31.

All mussel survey and relocation results, including tag and measurement data, must be submitted to VDGIF for review, prior to instream construction activities. Reviews will be expedited due to the potential short timeframe between surveys and/or relocations and the start of instream work. Reports must contain, at a minimum, number of species found, number of individuals per species and their sizes, and number of individuals tagged.

### **Guidelines if federally-listed mussel species are present**

Federally-listed mussels must *not* be relocated during the initial survey. If federally-listed mussels are found, they must remain exactly where found and all specimens should be photo documented, if possible. Coordination with FWS and VDGIF must occur to determine future actions.

If it is determined that a project may affect a federally-listed species, FWS will complete a consultation with the Federal action agency and prepare a biological opinion in accordance with the Federal Endangered Species Act. The relocation procedures for federally listed mussels will be specified in FWS's biological opinion and will be determined on a project-specific basis.

If relocation surveys are not possible due to conditions such as high water, contact FWS and VDGIF to arrange contingency plans. All listed mussels must be moved to suitable habitat upstream of any potential project impacts. Mussels may be relocated downstream if habitat upstream is determined unsuitable by VDGIF and FWS. If not determined prior to the relocation, the surveyor is responsible for determining the most suitable relocation area. All relocated mussels must be at least partially placed in the substrate, anterior end down. Project applicants may be required to monitor relocated mussels to determine relocation success/failure.

The location of all relocated federally-listed mussels must be accurately documented (preferably with geographic coordinates) and reported to FWS and VDGIF. All federally-listed mussel species also must be tagged and measured for potential future monitoring.

All mussel survey and relocation results must be submitted to FWS and VDGIF for review, prior to instream construction activities. Reviews will be expedited due to the potential short timeframe between surveys and/or relocations and the start of instream work. Reports must contain, at a minimum; number of species found, number of individuals per species and their sizes, number of individuals tagged, etc.

Project applicants may be required to adhere to time of year restrictions (Enclosure 5) for mussel relocations as recommended by FWS and VDGIF. Time of year restrictions will be specified in a letter or in FWS's biological opinion.

### **Enclosure 3: Surveyor List for Atlantic Slope Mussels in Virginia**

Approved Surveyors in Virginia for Atlantic Slope Freshwater Mussels

([http://www.fws.gov/northeast/virginiafield/pdf/endspecies/Surveyor\\_Lists/PDF%20Format/SURVEYOR%20LIST%20-%20Atlantic%20Slope%20Mussels.pdf](http://www.fws.gov/northeast/virginiafield/pdf/endspecies/Surveyor_Lists/PDF%20Format/SURVEYOR%20LIST%20-%20Atlantic%20Slope%20Mussels.pdf))

### **Enclosure 4: Surveyor List for Upper Tennessee River Basin Mussels in Virginia**

Approved Surveyors in Virginia for Tennessee River Drainage Freshwater Mussels

([http://www.fws.gov/northeast/virginiafield/pdf/endspecies/Surveyor\\_Lists/PDF%20Format/SURVEYOR%20LIST%20-%20TN%20Drainage%20Mussels.pdf](http://www.fws.gov/northeast/virginiafield/pdf/endspecies/Surveyor_Lists/PDF%20Format/SURVEYOR%20LIST%20-%20TN%20Drainage%20Mussels.pdf) )

### **Enclosure 5: Time of Year Restrictions**

Virginia Department of Game and Inland Fisheries Time of Year Restrictions (TOYR) Table

(<http://www.dgif.virginia.gov/environmental-programs/files/VDGIF-Time-of-Year-Restrictions-Table.pdf>)

### **Enclosure 6 - Federally-Designated Critical Habitat for Mussels in Virginia**

Map of Federally-Designated Critical Habitat in Virginia

([http://www.fws.gov/northeast/virginiafield/endspecies/Critical\\_Habitat.html](http://www.fws.gov/northeast/virginiafield/endspecies/Critical_Habitat.html))



Virginia Department of Game and Inland Fisheries

Special Legal Status Faunal Species in Virginia

<u>Common Name</u>	<u>Scientific Name</u>	<u>Federal</u> <sup>1</sup>	<u>State</u>	<u>WAP Tier</u>
<u>FRESHWATER FISHES</u>				
Atlantic sturgeon	<i>Acipenser oxyrinchus</i>	FE	SE	II
Blackbanded sunfish	<i>Enneacanthus chaetodon</i>		SE	I
Blackside dace	<i>Chrosomus (=Phoxinus) cumberlandensis</i>	FT	ST	III
Carolina darter	<i>Etheostoma collis</i>		ST	II
Duskytail darter	<i>Etheostoma percnurum</i>	FE	SE	I
Emerald shiner	<i>Notropis atherinoides</i>		ST	III
Golden darter	<i>Etheostoma denoncourti</i>	SOC	ST	
Greenfin darter	<i>Etheostoma chlorobranchium</i>		ST	II
Orangefin madtom	<i>Noturus gilberti</i>	SOC	ST	II
Paddlefish	<i>Polyodon spathula</i>		ST	II
Roanoke logperch	<i>Percina rex</i>	FE	SE	I
Sharphead darter	<i>Etheostoma acuticeps</i>		SE	I
Shortnose sturgeon	<i>Acipenser brevirostrum</i>	FE	SE	I
Sickle darter	<i>Percina williamsi</i>		ST	II
Slender chub	<i>Erimystax cahni</i>	FT	ST	I
Spotfin chub	<i>Erimonax monachus</i>	FT	ST	I
Steelcolor shiner	<i>Cyprinella whipplei</i>		ST	III
Tennessee dace	<i>Chrosomus (=Phoxinus) tennesseensis</i>		SE	I
Variagate darter	<i>Etheostoma variatum</i>		SE	II
Western sand darter	<i>Ammocrypta clara</i>		ST	II
Whitemouth shiner	<i>Notropis alborus</i>		ST	IV
Yellowfin madtom	<i>Noturus flavipinnis</i>	FT	ST	I
<u>AMPHIBIANS</u>				
<u>Frogs</u>				
Barking treefrog	<i>Hyla gratiosa</i>		ST	II
<u>Salamanders</u>				
Eastern tiger salamander	<i>Ambystoma tigrinum</i>		SE	II
Mabee's salamander	<i>Ambystoma mabeei</i>		ST	II
Shenandoah salamander	<i>Plethodon shenandoah</i>	FE	SE	I
<u>REPTILES</u>				
<u>Lizards</u>				
Eastern glass lizard	<i>Ophisaurus ventralis</i>		ST	II
<u>Snakes</u>				
Canebrake rattlesnake (Coastal Plain population of timber rattlesnake)	<i>Crotalus horridus</i>		SE	II
<u>Turtles</u>				
Bog (= Muhlenberg) turtle	<i>Glyptemys (=Clemmys) muhlenbergii</i>	FT(S/A)	SE	I
Eastern chicken turtle	<i>Deirochelys reticularia reticularia</i>		SE	I
Green sea turtle	<i>Chelonia mydas</i>	FT	ST	
Hawksbill sea turtle	<i>Eretmochelys imbricata</i>	FE	SE	

<sup>1</sup> FE=Federal Endangered; FT=Federal Threatened; S/A=Similarity of Appearance; FC=Federal Candidate; FP=Federal Proposed; SOC=Federal Species of Concern (not a legal status; list maintained by USFWS Virginia Field Office); SE=State Endangered; ST=State Threatened; WAP Tier = Virginia Wildlife Action Plan Tiered Species, from the Species of Greatest Conservation Need list that is defined in the plan: Tiers I-IV (not a legal status, Tier levels defined in the Virginia Wildlife Action Plan).



Virginia Department of Game and Inland Fisheries

Special Legal Status Faunal Species in Virginia

<u>Common Name</u>	<u>Scientific Name</u>	<u>Federal</u> <sup>1</sup>	<u>State</u>	<u>WAP Tier</u>
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	FE	SE	
Leatherback sea turtle	<i>Dermochelys coriacea</i>	FE	SE	
Loggerhead sea turtle	<i>Caretta caretta</i>	FT	ST	I
Wood turtle	<i>Glyptemys insculpta</i>		ST	I
<u>BIRDS</u>				
Bachman's sparrow	<i>Aimophila aestivalis</i>		ST	I
Bachman's warbler (=wood)	<i>Vermivora bachmanii</i>	FE	SE	
Bewick's wren	<i>Thryomanes bewickii</i>		SE	I
Black rail	<i>Laterallus jamaicensis</i>		SE	I
Gull-billed tern	<i>Sterna nilotica</i>		ST	I
Henslow's sparrow	<i>Ammodramus henslowii</i>		ST	I
Kirtland's warbler (=wood)	<i>Dendroica kirtlandii</i>	FE	SE	IV
Loggerhead shrike	<i>Lanius ludovicianus</i>		ST	I
Peregrine falcon	<i>Falco peregrinus</i>		ST	I
Piping plover	<i>Charadrius melodus</i>	FT	ST	I
Red-cockaded woodpecker	<i>Picoides borealis</i>	FE	SE	I
Red knot	<i>Calidris canutus</i>	FT		IV
Roseate tern	<i>Sterna dougallii dougallii</i>	FE	SE	IV
Upland sandpiper	<i>Bartramia longicauda</i>		ST	I
Wilson's plover	<i>Charadrius wilsonia</i>		SE	I
<u>MAMMALS</u>				
American water shrew	<i>Sorex palustris</i>		SE	II
Carolina northern flying squirrel	<i>Glaucomys sabrinus coloratus</i>	FE	SE	I
Delmarva Peninsula fox squirrel	<i>Sciurus niger cinereus</i>	FE	SE	II
Dismal Swamp southeastern shrew	<i>Sorex longirostris fisheri</i>		ST	IV
Eastern puma (=cougar)	<i>Puma (=Felis) concolor cougar</i>	FE	SE	
Gray bat	<i>Myotis grisescens</i>	FE	SE	II
Gray wolf	<i>Canis lupus</i>	FE	SE	
Indiana bat	<i>Myotis sodalis</i>	FE	SE	I
Northern long-eared bat	<i>Myotis septentrionalis</i>	FT		
Rafinesque's eastern big-eared bat	<i>Corynorhinus rafinesquii macrotis</i>		SE	I
Rock vole	<i>Microtus chrotorrhinus</i>		SE	II
Snowshoe hare	<i>Lepus americanus</i>		SE	I
Virginia big-eared bat	<i>Corynorhinus (=Plecotus) townsendii virginianus</i>	FE	SE	II
Virginia northern flying squirrel	<i>Glaucomys sabrinus fuscus</i>	FE	SE	I
<u>MOLLUSKS</u>				
<u>Freshwater Mussels</u>				
Appalachian monkeyface (pearlymussel)	<i>Quadrula sparsa</i>	FE	SE	I
Atlantic pigtoe	<i>Fusconaia masoni</i>	SOC	ST	II
Birdwing pearlymussel	<i>Lemiox rimosus</i>	FE	SE	I
Black sandshell	<i>Ligumia recta</i>		ST	III
Brook floater	<i>Alasmidonta varicosa</i>		SE	II
Cracking pearlymussel	<i>Hemistena lata</i>	FE	SE	I
Cumberland bean (pearlymussel)	<i>Villosa trabalis</i>	FE	SE	I
Cumberland monkeyface (pearlymussel)	<i>Quadrula intermedia</i>	FE	SE	I

<sup>1</sup> FE=Federal Endangered; FT=Federal Threatened; S/A=Similarity of Appearance; FC=Federal Candidate; FP=Federal Proposed; SOC=Federal Species of Concern (not a legal status; list maintained by USFWS Virginia Field Office); SE=State Endangered; ST=State Threatened; WAP Tier = Virginia Wildlife Action Plan Tiered Species, from the Species of Greatest Conservation Need list that is defined in the plan: Tiers I-IV (not a legal status, Tier levels defined in the Virginia Wildlife Action Plan).



Virginia Department of Game and Inland Fisheries

Special Legal Status Faunal Species in Virginia

<u>Common Name</u>	<u>Scientific Name</u>	<u>Federal<sup>1</sup></u>	<u>State</u>	<u>WAP Tier</u>
Cumberlandian combshell	<i>Epioblasma brevidens</i>	FE	SE	I
Deertoe	<i>Truncilla truncata</i>		SE	IV
Dromedary pearlymussel	<i>Dromus dromas</i>	FE	SE	I
Dwarf wedgemussel	<i>Alasmidonta heterodon</i>	FE	SE	II
Elephantear	<i>Elliptio crassidens</i>		SE	IV
Fanshell	<i>Cyprogenia stegaria</i>	FE	SE	I
Finerayed pigtoe	<i>Fusconaia cuneolus</i>	FE	SE	I
Fluted kidneyshell	<i>Ptychobranthus subtentum</i>	FE	SE	II
Fragile papershell	<i>Leptodea fragilis</i>		ST	IV
Green blossom (pearlymussel)	<i>Epioblasma torulosa gubernaculum</i>	FE	SE	I
Green floater	<i>Lasmigona subviridis</i>		ST	II
James spiny mussel	<i>Pleurobema collina</i>	FE	SE	I
Littlewing pearlymussel	<i>Pegias fabula</i>	FE	SE	I
Ohio pigtoe	<i>Pleurobema cordatum</i>		SE	III
Oyster mussel	<i>Epioblasma capsaeformis</i>	FE	SE	I
Pimpleback	<i>Quadrula pustulosa pustulosa</i>		ST	IV
Pink mucket (pearlymussel)	<i>Lampsilis abrupta</i>	FE	SE	I
Pistolgrip	<i>Tritogonia verrucosa</i>		ST	IV
Purple bean	<i>Villosa perpurpurea</i>	FE	SE	I
Purple lilliput	<i>Toxolasma lividus</i>	SOC	SE	II
Pyramid pigtoe	<i>Pleurobema rubrum</i>	SOC	SE	II
Rayed bean	<i>Villosa fabalis</i>	FE	SE	II
Rough pigtoe	<i>Pleurobema plenum</i>	FE	SE	I
Rough rabbitsfoot	<i>Quadrula cylindrica strigillata</i>	FE	SE	I
Sheepnose	<i>Plethobasus cyphus</i>	FE	SE	II
Shiny pigtoe	<i>Fusconaia cor</i>	FE	SE	I
Slabside pearlymussel	<i>Lexingtonia dolabelliformis</i>	FE	SE	II
Slippershell mussel	<i>Alasmidonta viridis</i>		SE	II
Snuffbox	<i>Epioblasma triquetra</i>	FE	SE	II
Spectaclecase	<i>Cumberlandia monodonta</i>	FE	SE	II
Tan riffleshell	<i>Epioblasma florentina walkeri (=E. walkeri)</i>	FE	SE	I
Tennessee heelsplitter	<i>Lasmigona holstonia</i>		SE	II

Freshwater & Land Snails

Appalachian springsnail	<i>Fontigens bottimeri</i>	SOC	SE	II
Brown supercoil	<i>Paravitrea septadens</i>	SOC	ST	I
Rubble coil	<i>Helicodiscus lirellus</i>	SOC	SE	I
Shaggy coil	<i>Helicodiscus diadema</i>	SOC	SE	I
Spider elimia	<i>Elimia arachnoidea</i>		SE	II
Spiny riversnail	<i>Io fluvialis</i>	SOC	ST	III
Spirit supercoil	<i>Paravitrea hera</i>	SOC	SE	I
Springsnail (no common name)	<i>Fontigens morrisoni</i>	SOC	SE	I
Thankless ghostsnail	<i>Holsingeria unthinksensis</i>	SOC	SE	I
Virginia fringed mountain snail	<i>Polygyriscus virginianus</i>	FE	SE	I

FRESHWATER CRUSTACEANS

Big Sandy crayfish	<i>Cambarus veteranus</i>	SOC	SE	II
Lee County Cave isopod	<i>Lirceus usdagalun</i>	FE	SE	I
Madison Cave amphipod	<i>Stygobromus stegerorum</i>	SOC	ST	I
Madison Cave isopod	<i>Antrilana lira</i>	FT	ST	II

<sup>1</sup> FE=Federal Endangered; FT=Federal Threatened; S/A=Similarity of Appearance; FC=Federal Candidate; FP=Federal Proposed; SOC=Federal Species of Concern (not a legal status; list maintained by USFWS Virginia Field Office); SE=State Endangered; ST=State Threatened; WAP Tier = Virginia Wildlife Action Plan Tiered Species, from the Species of Greatest Conservation Need list that is defined in the plan: Tiers I-IV (not a legal status, Tier levels defined in the Virginia Wildlife Action Plan).



Virginia Department of Game and Inland Fisheries

Special Legal Status Faunal Species in Virginia

<u>Common Name</u>	<u>Scientific Name</u>	<u>Federal</u> <sup>1</sup>	<u>State</u>	<u>WAP Tier</u>
<u>MILLIPEDES</u>				
Ellett Valley pseudotremia	<i>Pseudotremia cavernarum</i>	SOC	ST	II
Laurel Creek xystodesmid	<i>Sigmoria whiteheadi</i>	SOC	ST	I
<u>ARACHNIDS</u>				
Spruce-fir moss spider	<i>Microhexura montivaga</i>	FE	SE	
<u>INSECTS</u> <sup>2</sup>				
American burying beetle	<i>Nicrophorus americanus</i>	FE		I
Appalachian grizzled skipper	<i>Pyrgus wyandot</i> (= <i>Pyrgus centaureae wyandot</i> )	SOC	ST	I
Buffalo Mountain mealybug	<i>Puto kosztarabi</i>	SOC	SE	I
Holsinger's cave beetle	<i>Pseudanophthalmus holsingeri</i>	SOC	SE	I
Mitchell's satyr butterfly	<i>Neonympha mitchellii</i>	FE	SE	I
Northeastern beach tiger beetle	<i>Cicindela dorsalis dorsalis</i>	FT	ST	II
Virginia Piedmont water boatman	<i>Sigara depressa</i>	SOC	SE	I
<u>MARINE MAMMALS</u>				
Blue whale	<i>Balaenoptera musculus</i>	FE	SE	
Finback whale	<i>Balaenoptera physalus</i>	FE	SE	
Humpback whale	<i>Megaptera novaeangliae</i>	FE	SE	
North Atlantic Right whale	<i>Eubalaena glacialis</i>	FE	SE	
Sei whale	<i>Balaenoptera borealis</i>	FE	SE	
Sperm whale	<i>Physeter catodon</i> (= <i>macrocephalus</i> )	FE	SE	
West Indian manatee	<i>Trichechus manatus</i>	FE	SE	

<sup>2</sup> all insects listed as federal or state endangered or threatened are protected by regulations that fall under the Virginia Department of Agriculture and Consumer Services' jurisdiction

For further information or details regarding this list or any species listed herein, please contact:

Bureau of Wildlife Resources, Statewide Resources  
 Virginia Department of Game and Inland Fisheries  
Physical Address: 7870 Villa Park Dr, Suite 400  
Mailing Address: P. O. Box 90778  
 Henrico, VA 23228  
 (804) 367-6913

<sup>1</sup> FE=Federal Endangered; FT=Federal Threatened; S/A=Similarity of Appearance; FC=Federal Candidate; FP=Federal Proposed; SOC=Federal Species of Concern (not a legal status; list maintained by USFWS Virginia Field Office); SE=State Endangered; ST=State Threatened; WAP Tier = Virginia Wildlife Action Plan Tiered Species, from the Species of Greatest Conservation Need list that is defined in the plan: Tiers I-IV (not a legal status, Tier levels defined in the Virginia Wildlife Action Plan).



## Federally Endangered, Threatened, Proposed, and Candidate Species in Virginia

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>STATUS</u>
<u>AMPHIBIANS</u>		
<i>Plethodon shenandoah</i>	Shenandoah salamander	LE
<u>BIRDS</u>		
<i>Calidris canutus rufa</i>	Rufa red knot	PT (CH)
<i>Charadrius melodus</i>	Piping plover	LT
<i>Picoides borealis</i>	Red-cockaded woodpecker	LE
<i>Sterna dougallii dougallii</i>	Roseate tern	LE
<u>CRUSTACEANS</u>		
<i>Antrolana lira</i>	Madison cave isopod	LT
<i>Lirceus usdagalun</i>	Lee County cave isopod	LE
<u>FISHES</u>		
<i>Acipenser brevirostrum</i> <sup>1</sup>	Shortnose sturgeon	LE
<i>Acipenser oxyrinchus oxyrinchus</i> <sup>1, 2</sup>	Atlantic sturgeon	LE
<i>Erimonax monachus</i>	Spotfin chub	LT (CH)
<i>Erimystax cahni</i>	Slender chub	LT (CH)
<i>Etheostoma percnurum</i>	Duskytail darter	LE
<i>Noturus flavipinnis</i>	Yellowfin madtom	LT (CH)
<i>Percina rex</i>	Roanoke logperch	LE
<i>Phoxinus cumberlandensis</i>	Blackside dace	LT
<u>INSECTS</u>		
<i>Cicindela dorsalis dorsalis</i>	Northeastern beach tiger beetle	LT
<i>Neonympha mitchelli mitchelli</i>	Mitchell's satyr	LE
<i>Nicrophorus americanus</i>	American burying beetle	LE-EX
<u>MAMMALS</u>		
<i>Corynorhinus townsendii virginianus</i>	Virginia big-eared bat	LE
<i>Felis concolor cougar</i>	Eastern cougar	LE-EX
<i>Glaucomys sabrinus coloratus</i>	Carolina northern flying squirrel	LE
<i>Myotis grisescens</i>	Gray bat	LE
<i>Myotis septentrionalis</i>	Northern long-eared bat	PE
<i>Myotis sodalis</i>	Indiana bat	LE
<i>Sciurus niger cinereus</i>	Delmarva Peninsula fox squirrel	LE

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>STATUS</u>
<u>MUSSELS</u>		
<i>Alasmidonta heterodon</i>	Dwarf wedgemussel	LE
<i>Cumberlandia monodonta</i>	Spectaclecase	LE
<i>Cyprogenia stegaria</i>	Fanshell	LE
<i>Dromus dromas</i>	Dromedary pearlymussel	LE
<i>Epioblasma brevidens</i>	Cumberlandian combshell	LE (CH)
<i>Epioblasma capsaeformis</i>	Oyster mussel	LE (CH)
<i>Epioblasma torulosa gubernaculum</i>	Green-blossom pearlymussel	LE-EX
<i>Epioblasma florentina walkeri</i>	Tan riffleshell	LE
<i>Epioblasma triquetra</i>	Snuffbox	LE
<i>Fusconaia cor</i>	Shiny pigtoe	LE
<i>Fusconaia cuneolus</i>	Fine-rayed pigtoe	LE
<i>Hemistena lata</i>	Cracking pearlymussel	LE
<i>Lampsilis abrupta</i>	Pink mucket pearlymussel	LE-EX
<i>Lemiox rimosus (=Conradilla caelata)</i>	Birdwing pearlymussel	LE
<i>Lexingtonia dolabelloides</i>	Slabside pearlymussel	LE (CH)
<i>Pegias fabula</i>	Little-wing pearlymussel	LE
<i>Plethobasus cyphus</i>	Sheepnose	LE
<i>Pleurobema collina</i>	James spinymussel	LE
<i>Pleurobema plenum</i>	Rough pigtoe	LE
<i>Ptychobranhus subtentum</i>	Fluted kidneyshell	LE (CH)
<i>Quadrula cylindrica strigillata</i>	Rough rabbitsfoot	LE (CH)
<i>Quadrula intermedia</i>	Cumberland monkeyface pearlymussel	LE
<i>Quadrula sparsa</i>	Appalachian monkeyface pearlymussel	LE
<i>Villosa fabalis</i>	Rayed bean	LE-EX
<i>Villosa perpurpurea</i>	Purple bean	LE (CH)
<i>Villosa trabalis</i>	Cumberland bean pearlymussel	LE-EX
<u>REPTILES</u>		
<i>Caretta caretta</i> <sup>1</sup>	Loggerhead sea turtle	LT
<i>Chelonia mydas</i> <sup>1</sup>	Green sea turtle	LT
<i>Dermochelys coriacea</i> <sup>1</sup>	Leatherback sea turtle	LE
<i>Eretmochelys imbricata</i> <sup>1</sup>	Hawksbill sea turtle	LE
<i>Lepidochelys kempii</i> <sup>1</sup>	Kemp's ridley sea turtle	LE
<i>Clemmys muhlenbergii</i>	Bog turtle	LT-S/A
<u>SNAILS</u>		
<i>Polygyriscus virginianus</i>	Virginia fringed mountain snail	LE

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>STATUS</u>
<u>SPIDERS</u>		
<i>Microhexura montivaga</i>	Spruce-fir moss spider	LE
<u>LICHENS</u>		
<i>Gymnoderma lineare</i>	Rock gnome lichen	LE
<u>PLANTS</u>		
<i>Aeschynomene virginica</i>	Sensitive joint-vetch	LT
<i>Amaranthus pumilus</i>	Seabeach amaranth	LT
<i>Arabis serotina</i>	Shale barren rock cress	LE
<i>Betula uber</i>	Virginia round-leaf birch	LT
<i>Cardamine micranthera</i>	Small-anthered bittercress	LE
<i>Echinacea laevigata</i>	Smooth coneflower	LE
<i>Hedyotis purpurea var. montana</i>	Roan Mountain bluet	LE
<i>Helenium virginicum</i>	Virginia sneezeweed	LT
<i>Helianthus schweinitzii</i>	Schweinitz's sunflower	LE
<i>Helonias bullata</i>	Swamp pink	LT
<i>Iliamna corei</i>	Peter's Mountain mallow	LE
<i>Isotria medeoloides</i>	Small whorled pogonia	LT
<i>Platanthera integrilabia</i>	White fringeless orchid	C-EX
<i>Platanthera leucophaea</i>	Eastern prairie fringed orchid	LT
<i>Ptilimnium nodosum</i>	Harperella	LE
<i>Rhus michauxii</i>	Michaux's sumac	LE
<i>Schwalbea americana</i>	American chaffseed	LE-EX
<i>Scirpus ancistrochaetus</i>	Northeastern bulrush	LE
<i>Spiraea virginiana</i>	Virginia spiraea	LT

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KEY

LE	Listed endangered.
LT	Listed threatened.
PE	Proposed endangered.
PT	Proposed threatened.
EX	Believed to be extirpated in Virginia.
LT - S/A	Endangered due to similarity of appearance to another listed species.
C	Candidate (The Service has enough information to list the species as threatened or endangered, but this action is precluded by other listing activities).
(CH)	Critical habitat has been designated for this species in Virginia.
(PCH)	Critical habitat has been proposed with species listing.

<sup>1</sup>Sea turtles and sturgeons are primarily under the jurisdiction of the National Oceanic and Atmospheric Administration's Fisheries Service. The exception for sea turtles is when nesting they fall under the jurisdiction of the U.S. Fish and Wildlife Service.

<sup>2</sup>On February 6, 2012 the Chesapeake Bay distinct population segment of Atlantic sturgeon was federally listed as endangered.

Last Updated: October 28, 2013

Prepared by U.S. Fish and Wildlife Service, Virginia Field Office

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR3-5**

Revised Table 3.1-1

Representative List of Fish, Crayfish, and Freshwater Mussel Species with the Potential to Occur Along the Project Route

Common Name	Scientific Name	State(s)	Fishery Type(s) <sup>1</sup>
<b>Fish</b>			
Alewife	<i>Alosa pseudoharengus</i>	VA, WV	WW
American Eel	<i>Anguilla rostrata</i>	VA, WV	WW
Banded Darter	<i>Etheostoma zonale</i>	VA, WV	WW
Banded Killifish	<i>Fundulus diaphanus</i>	VA, WV	WW
Bigeye Chub	<i>Notropis amblops</i>	VA, WV	WW
Bighead Carp	<i>Hypophthalmichthys nobilis</i>	WV	WW
Black Bullhead	<i>Ameiurus melas</i>	VA, WV	WW
Black Crappie	<i>Pomoxis nigromaculatus</i>	VA, WV	WW
Black Redhorse	<i>Moxostoma duquesnei</i>	VA, WV	WW
Blacknose Dace	<i>Rhinichthys atratulus</i>	VA, WV	WW
Blackside Darter	<i>Percina maculata</i>	VA, WV	WW
Blue Catfish	<i>Ictalurus furcatus</i>	VA, WV	WW
Blue Sucker	<i>Cycleptus elongatus</i>	WV	WW
Bluebreast Darter	<i>Etheostoma camurum</i>	VA, WV	WW
Bluegill	<i>Lepomis macrochirus</i>	VA, WV	WW
Bluntnose Minnow	<i>Pimephales notatus</i>	VA, WV	WW
Bowfin	<i>Amia calva</i>	VA, WV	WW
Brindled Madtom	<i>Noturus miurus</i>	WV	WW
Brook Silverside	<i>Labidesthes sicculus</i>	VA, WV	WW
Brook Stickleback	<i>Culaea inconstans</i>	WV	CW, WW
Brook Trout	<i>Salvelinus fontinalis</i>	VA, WV	CW, TE
Brown Bullhead	<i>Ameiurus nebulosus</i>	VA, WV	WW
Brown Trout	<i>Salmo trutta</i>	VA, WV	CW, TE
Bullhead Minnow	<i>Pimephales vigilax</i>	VA, WV	WW
Candy Darter	<i>Etheostoma osburni</i>	VA, WV	WW
Central Mudminnow	<i>Umbra limi</i>	WV	WW
Central Stoneroller	<i>Campostoma anomalum</i>	VA, WV	WW
Chain Pickerel	<i>Esox niger</i>	VA, WV	WW
Channel Catfish	<i>Ictalurus punctatus</i>	VA, WV	WW
Channel Darter	<i>Percina copelandi</i>	VA, WV	WW
Channel Shiner	<i>Notropis wickliffi</i>	WV	WW
Common Carp	<i>Cyprinus carpio</i>	VA, WV	WW
Common Shiner	<i>Luxilus cornutus</i>	VA, WV	WW
Creek Chub	<i>Semotilus atromaculatus</i>	VA, WV	WW
Cutlips Minnow	<i>Exoglossum maxillingua</i>	VA, WV	WW
Cutthroat Trout	<i>Oncorhynchus clarki</i>	WV	CW
Dusky Darter	<i>Percina sciera</i>	VA, WV	WW
Eastern Sand Darter	<i>Ammocrypta pellucida</i>	WV	WW
Eastern Silvery Minnow	<i>Hybognathus regius</i>	VA, WV	WW
Emerald Shiner	<i>Notropis atherinoides</i>	VA, WV	WW, TE
Fantail Darter	<i>Etheostoma flabellare</i>	VA, WV	WW
Fathead Minnow	<i>Pimephales promelas</i>	VA, WV	WW
Flathead Catfish	<i>Pylodictis olivaris</i>	VA, WV	WW
Ghost Shiner	<i>Notropis buchanani</i>	WV	WW
Gizzard Shad	<i>Dorosoma cepedianum</i>	VA, WV	WW
Golden Redhorse	<i>Moxostoma erythrurum</i>	VA, WV	WW
Golden Shiner	<i>Notemigonus crysoleucas</i>	VA, WV	WW

Revised 1/15/16, Table 3.1-1

Representative List of Fish, Crayfish, and Freshwater Mussel Species with the Potential to Occur Along the Project Route

Common Name	Scientific Name	State(s)	Fishery Type(s) <sup>1</sup>
Goldfish	<i>Carassius auratus</i>	VA, WV	WW
Grass Carp	<i>Ctenopharynogodon idella</i>	VA, WV	WW
Green Sunfish	<i>Lepomis cyanellus</i>	VA, WV	WW
Greenside Darter	<i>Etheostoma blennioides</i>	VA, WV	WW
Hybrid Saugeye	<i>Sander canadense</i> x <i>S. vitreum</i>	VA, WV	WW
Hybrid Striped Bass	<i>Morone chrysops</i> x <i>M. saxatilis</i>	VA, WV	WW
Hybrid Tiger Musky	<i>Esox lucius</i> x <i>E. masquinony</i>	VA, WV	WW
Johnny Darter	<i>Etheostoma nigrum</i>	VA, WV	WW
Largemouth Bass	<i>Micropterus salmoides</i>	VA, WV	WW
Least Brook Lamprey	<i>Lampetra aepyptera</i>	VA, WV	WW
Logperch	<i>Percina caprodes</i>	VA, WV	WW
Longear Sunfish	<i>Lepomis megalotis</i>	VA, WV	WW
Longnose Dace	<i>Rhinichthys cataractae</i>	VA, WV	WW
Longnose Gar	<i>Lepisosteus osseus</i>	VA, WV	WW
Margined Madtom	<i>Noturus insignis</i>	VA, WV	WW
Mimic Shiner	<i>Notropis volucellus</i>	VA, WV	WW
Mooneye	<i>Hiodon tergisus</i>	WV	WW
Mottled Sculpin	<i>Cottus bairdi</i>	VA, WV	CW, WW
Muskellunge	<i>Esox masquinongy</i>	VA, WV	WW
Northern Hogsucker	<i>Hypentelium nigricians</i>	VA, WV	WW
Northern Pike	<i>Esox lucius</i>	VA, WV	WW
Northern Studfish	<i>Fundulus catenatus</i>	VA, WV	WW
Orangespotted Sunfish	<i>Lepomis humilis</i>	WV	WW
Paddlefish	<i>Polyodon spathula</i>	VA, WV	WW, TE
Pumpkinseed	<i>Lepomis gibbosus</i>	VA, WV	WW
Quillback	<i>Carpiodes cyprinus</i>	VA, WV	WW
Rainbow Darter	<i>Etheostoma caeruleum</i>	VA, WV	WW
Rainbow Trout	<i>Oncorhynchus mykiss</i>	VA, WV	CW
Redbreast Sunfish	<i>Lepomis auritus</i>	VA, WV	WW
Redear Sunfish	<i>Lepomis microlophus</i>	VA, WV	WW
Redfin Shiner	<i>Lythrurus umbratilis</i>	WV	WW
River Carpsucker	<i>Carpiodes carpio</i>	WV	WW
River Chub	<i>Nocomis micropogon</i>	VA, WV	WW
River Redhorse	<i>Moxostoma carinatum</i>	VA, WV	WW
River Shiner	<i>Notropis blennius</i>	WV	WW
Roanoke Logperch	<i>Percina rex</i>	VA	WW, TE
Rock Bass	<i>Ambloplites rupestris</i>	VA, WV	WW
Rosyface Shiner	<i>Notropis rubellus</i>	VA, WV	WW
Rosyside Dace	<i>Clinostomus funduloides</i>	VA, WV	CW, WW
Sand Shiner	<i>Notropis stramineus</i>	VA, WV	WW
Sauger	<i>Sander canadense</i>	VA, WV	WW
Sharpnose Darter	<i>Percina oxyrhynchus</i>	VA, WV	WW
Shorthead Redhorse	<i>Moxostoma macrolepidotum</i>	VA, WV	WW
Shovelnose Sturgeon	<i>Scaphirhynchus platyrhynchus</i>	WV	WW
Silver Chub	<i>Machyropsis storeriana</i>	WV	WW
Silver Redhorse	<i>Moxostoma anisurum</i>	VA, WV	WW
Silver Shiner	<i>Notropis photogenis</i>	VA, WV	WW
Silverjaw Minnow	<i>Notropis buccata</i>	VA, WV	WW

Revised Table 3.1-1

Representative List of Fish, Crayfish, and Freshwater Mussel Species with the Potential to Occur Along the Project Route

Common Name	Scientific Name	State(s)	Fishery Type(s) <sup>1</sup>
Skipjack Herring	<i>Alosa chrysochloris</i>	WV	WW
Slenderhead Darter	<i>Percina phoxocephala</i>	WV	WW
Smallmouth Bass	<i>Micropterus dolomieu</i>	VA, WV	WW
Smallmouth Buffalo	<i>Ictiobus bubalus</i>	VA, WV	WW
Southern Redbelly Dace	<i>Chrosomus erythrogaster</i>	WV	CW, WW
Speckled Chub	<i>Macrhybopsis aestivalis</i>	WV	WW
Spotfin Shiner	<i>Cyprinella spiloptera</i>	VA, WV	WW
Spottail Shiner	<i>Notropis hudsonius</i>	VA, WV	WW
Spotted Bass	<i>Micropterus punctulatus</i>	VA, WV	WW
Spotted Sucker	<i>Minytrema melanops</i>	WV	WW
Steelcolor Shiner	<i>Cyprinella whipplei</i>	VA, WV	WW, TE
Stonecat	<i>Noturus flavus</i>	VA, WV	WW
Streamline Chub	<i>Erimystax dissimilis</i>	VA, WV	WW
Striped Bass	<i>Morone saxatilis</i>	VA, WV	WW
Striped Shiner	<i>Luxilus chrysocephalus</i>	VA, WV	WW
Suckermouth Minnow	<i>Phenacobius mirabilis</i>	VA, WV	WW
Telescope Shiner	<i>Notropis telescopus</i>	VA, WV	WW
Threadfin Shad	<i>Dorosoma petenense</i>	VA, WV	WW
Tippecanoe Darter	<i>Etheostoma tippecanoe</i>	VA, WV	WW
Tonguetied Minnow	<i>Exoglossum laurae</i>	VA, WV	WW
Torrent Sucker	<i>Thoburnia rathoecum</i>	VA, WV	WW
Trout-Perch	<i>Percopsis omiscomaycus</i>	VA, WV	WW
Variagate Darter	<i>Etheostoma variatum</i>	VA, WV	WW, TE
Walleye	<i>Sander vitreum</i>	VA, WV	WW
Warmouth	<i>Lepomis gulosus</i>	VA, WV	WW
Western Mosquitofish	<i>Gambusia affinis</i>	WV	WW
White Bass	<i>Morone chrysops</i>	VA, WV	WW
White Catfish	<i>Ameiurus catus</i>	VA	WW
White Crappie	<i>Pomoxis annularis</i>	VA, WV	WW
White Perch	<i>Morone americana</i>	VA, WV	WW
White Shiner	<i>Luxilus albeolus</i>	VA, WV	WW
White Sucker	<i>Catostomus commersoni</i>	VA, WV	WW
Whitetail Shiner	<i>Cyprinella galactura</i>	VA, WV	WW
Yellow Bullhead	<i>Ameiurus natalis</i>	VA, WV	WW
Yellow Perch	<i>Perca flavescens</i>	VA, WV	WW
<b>Crayfish</b>			
Allegheny Crayfish	<i>Orconectes obscurus</i>	VA, WV	
Big Water Crayfish	<i>Cambarus robustus</i>	VA, WV	
Blue Crayfish	<i>Cambarus monongalensis</i>	VA, WV	
Common Crayfish	<i>Cambarus bartonii</i>	VA, WV	
Devil Crayfish	<i>Cambarus diogenes</i>	VA, WV	
Rock Crayfish	<i>Cambarus carinirostris</i>	VA, WV	
Teays River Crayfish	<i>Cambarus sciotensis</i>	VA, WV	
Upland burrowing Crayfish	<i>Cambarus dubius</i>	VA, WV	

Revised Table 3.1-1

Representative List of Fish, Crayfish, and Freshwater Mussel Species with the Potential to Occur Along the Project Route

Common Name	Scientific Name	State(s)	Fishery Type(s) <sup>1</sup>
<b>Mussels</b>			
Atlantic Pigtoe	<i>Fusconaia masoni</i>	VA	WW, TE
Clubshell	<i>Pleurobema clava</i>	WV	WW, TE
Dwarf Wedgemussel	<i>Alasmidonta heterodon</i>	VA	WW, TE
Elktoe	<i>Alasmidonta marginata</i>	VA, WV	WW
Fragile Papershell	<i>Leptodea fragilis</i>	VA, WV	WW, TE
Green Floater	<i>Lasmigona subviridis</i>	VA, WV	CW, WW, TE
James Spiny mussel	<i>Pleurobema collina</i>	VA, WV	CW, TE
Long-solid Mussel	<i>Fusconaia subrotunda</i>	VA, WV	WW
Monkeyface	<i>Quadrula metanevra</i>	WV	WW
Northern Riffleshell	<i>Epioblasma torulosa</i>	WV	WW, TE
Pistolgrip	<i>Tritogonia verrucosa</i>	VA, WV	WW, TE
Purple Wartyback	<i>Cyclonaias tuberculata</i>	VA, WV	WW
Rainbow Mussel	<i>Villosa iris</i>	VA, WV	WW
Rayed Bean	<i>Villosa fabalis</i>	WV	WW
Round Pigtoe	<i>Pleurobema sintoxia</i>	VA, WV	WW
Salamander Mussel	<i>Simpsonaias ambigua</i>	WV	WW
Snuffbox	<i>Epioblasma triquetra</i>	VA, WV	WW, TE
Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	VA, WV	WW
Yellow Lampmussel	<i>Lampsilis cariosa</i>	VA, WV	WW

<sup>1</sup>CW= Coldwater Fishery, WW= Warmwater Fishery, TE= federally or state (Virginia) threatened / endangered species

Sources:

Virginia Department of Game and Inland Fisheries, 2015. <http://www.vafwis.org/fwis/>

West Virginia Division of Natural Resources, Wildlife Resources Section, Wildlife Diversity Program, 2000. Fishes of West Virginia: A Field Checklist.

West Virginia Division of Natural Resources - Wildlife Resources Section, 2010. West Virginia Wildlife Conservation Action Plan.



**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR3-6**

Revised 1/15/16 Table 3.1-2

## Fisheries of Special Concern Crossed by the Project

Facility	Waterbody	MP	County	Fishery Type/Issue <u>a/</u>	Species b/	Crossing Method	Stream Width at Crossing (feet)	Restricted In-stream Construction Window <u>c/</u>
Pipeline	North Fork Fishing Creek	0.7	Wetzel, WV	WW, M		Open Cut-Dry Ditch	35	April 1 – June 30
Pipeline	Rockcamp Run	18.8	Harrison, WV	WW, M		Open Cut-Dry Ditch	31	April 1 – June 30
Access Road (MVP-HA-026)	Rockcamp Run	18.8	Harrison, WV	WW, M		Open Cut-Dry Ditch	48	April 1 – June 30
Pipeline	Salem Fork	26.0	Harrison, WV	WW, M		Open Cut-Dry Ditch	30	April 1 – June 30
Pipeline	Kincheloe Creek	38.1	Harrison, WV	WW, M		Open Cut-Dry Ditch	3	April 1 – June 30
Access Road (MVP-HA-051)	Kincheloe Creek	38.2	Harrison, WV	WW, M		Open Cut-Dry Ditch	3	April 1 – June 30
Access Road	Sand Fork	39.3	Lewis, WV	WW, M		Open Cut-Dry Ditch	20	April 1 – June 30
Pipeline	Right Fork Freemans Creek	42.7	Lewis, WV	WW, M		Open Cut-Dry Ditch	25	April 1 – June 30
Pipeline	Fink Creek	44.8	Lewis, WV	WW, M		Open Cut-Dry Ditch	15	April 1 – June 30
Access Road (MVP-LE-062)	Fink Creek	44.8	Lewis, WV	WW, M		Open Cut-Dry Ditch	10	April 1 – June 30
Pipeline	Leading Creek	48.0	Lewis, WV	WW, TE	Snuffbox	Open Cut-Dry Ditch	4	April 1 – June 30

**Table 3.1-2**

**Fisheries of Special Concern Crossed by the Project**

<b>Facility</b>	<b>Waterbody</b>	<b>MP</b>	<b>County</b>	<b>Fishery Type/Issue <u>a/</u></b>	<b>Species b/</b>	<b>Crossing Method</b>	<b>Stream Width at Crossing (feet)</b>	<b>Restricted In-stream Construction Window <u>c/</u></b>
Access Road (MVP-LE-068)	Leading Creek	48.0	Lewis, WV	WW, TE	Snuffbox	Open Cut-Dry Ditch	4	April 1 – June 30
Pipeline	Sand Fork	55.2	Lewis, WV	WW, M		Open Cut-Dry Ditch	20	April 1 – June 30
Access Road (MVP-LE-073.01)	Sand Fork	55.2	Lewis, WV	WW, M		Open Cut-Dry Ditch	20	April 1 – June 30
Pipeline	Knawl Creek	68.8	Braxton, WV	WW, M		Open Cut-Dry Ditch	20	April 1 – June 30
Pipeline	Little Kanawha River	74.9	Braxton, WV	WW, TE	Snuffbox	Open Cut-Dry Ditch	50	April 1 – June 30
Pipeline	Left Fork Holly River	81.7	Webster, WV	CW, B2		Open Cut-Dry Ditch	100	September 15 – March 31
Pipeline	Elk River	87.4	Webster, WV	CW, M, TE	Clubshell	Open Cut-Dry Ditch	150	September 15 – March 31
Pipeline	Laurel Creek	98.9	Webster, WV	CW, M		Open Cut-Dry Ditch	55	September 15 – March 31
Access Road (MVP-WB-129)	Laurel Creek	98.9	Webster, WV	CW, M		Open Cut-Dry Ditch	55	September 15 – March 31
Pipeline	Gauley River	118.6	Nicholas, WV	WW, M		Open Cut-Wet Ditch	100	April 1 – June 30
Pipeline	Hominy Creek	126.5	Nicholas, WV	CW, B2, M		Open Cut-Dry Ditch	55	September 15 – March 31
Access Road (MVP-NI-161)	Hominy Creek	126.8	Nicholas, WV	CW, B2, M		Open Cut-Dry Ditch	65	September 15 – March 31

**Table 3.1-2**

**Fisheries of Special Concern Crossed by the Project**

<b>Facility</b>	<b>Waterbody</b>	<b>MP</b>	<b>County</b>	<b>Fishery Type/Issue <u>a/</u></b>	<b>Species b/</b>	<b>Crossing Method</b>	<b>Stream Width at Crossing (feet)</b>	<b>Restricted In-stream Construction Window <u>c/</u></b>
Pipeline	Meadow Creek	140.1	Greenbrier, WV	WW, B2		Open Cut-Dry Ditch	30	April 1 – June 30
Pipeline	Meadow River	143.7	Greenbrier, WV	WW, M		Open Cut-Dry Ditch	50	April 1 – June 30
Pipeline	Greenbrier River	170.6	Summers, WV	WW, M		Open Cut-Wet Ditch	332	April 1 – June 30
Pipeline	Indian Creek	181.9	Monroe, WV	WW, M		Open Cut-Dry Ditch	100	April 1 – June 30
Pipeline	Kimbalton Branch	198.0	Giles, VA	CW, WT		Open Cut-Dry Ditch	15	October 1 – June 30
Access Road (MVP-GI-234)	Kimbalton Branch	198.0	Giles, VA	CW, WT		Open Cut-Dry Ditch	12	October 1 – June 30
Pipeline	Stony Creek	199.4	Giles, VA	CW, WT, ST, TE	Green floater, Candy darter, pistolgrip	Open Cut-Dry Ditch	40	August 15 – July 31
Pipeline	UNT/ Little Stony Creek	202.5	Giles, VA	CW, WT		Open Cut-Dry Ditch	25	October 1 – June 30
Pipeline	UNT/ Little Stony Creek	202.8	Giles, VA	CW, WT		Open Cut-Dry Ditch	4	October 1 – June 30
Pipeline	UNT/ Little Stony Creek	203.3	Giles, VA	CW, WT		Open Cut-Dry Ditch	12	October 1 – June 30
Pipeline	Little Stony Creek	203.3	Giles, VA	CW, WT, ST		Open Cut-Dry Ditch	25	October 1 – June 30
Pipeline	UNT/ Sinking Creek	207.9	Giles, VA	CW, WT		Open Cut-Dry Ditch	60	October 1 – June 30
Access Road (MVP-GI-245.01)	UNT/ Sinking Creek	208.3	Giles, VA	CW, WT		Open Cut-Dry Ditch	60	October 1 – June 30

**Table 3.1-2**

**Fisheries of Special Concern Crossed by the Project**

<b>Facility</b>	<b>Waterbody</b>	<b>MP</b>	<b>County</b>	<b>Fishery Type/Issue <u>a/</u></b>	<b>Species b/</b>	<b>Crossing Method</b>	<b>Stream Width at Crossing (feet)</b>	<b>Restricted In-stream Construction Window <u>c/</u></b>
Pipeline	UNT to Sinking Creek	208.9	Giles, VA	CW, WT		Open Cut-Dry Ditch	60	October 1 – June 30
Access Road (MVP-GI-245.03)	UNT/ Sinking Creek	209.0	Giles, VA	CW, WT		Open Cut-Dry Ditch	60	October 1 – June 30
Pipeline	UNT/ Sinking Creek	209.3	Giles, VA	CW, WT		Open Cut-Dry Ditch	60	October 1 – June 30
Pipeline	Sinking Creek	209.9	Giles, VA	CW, WT		Open Cut-Dry Ditch	73	October 1 – June 30
Pipeline	Greenbrier Branch	211.6	Giles, VA	CW, WT		Open Cut-Dry Ditch		October 1 – June 30
Access Road (MVP-CR-258.02)	Sinking Creek	216.4	Giles, VA	CW, WT		Open Cut-Dry Ditch	35	October 1 – June 30
Pipeline	Craig Creek	218.2	Montgomery, VA	CW, TE	James spiny mussel, Atlantic pigtoe	Open Cut-Dry Ditch	10	March 1 – July 31
Access Road (MVP-GI-258.04)	Craig Creek	218.3	Montgomery, VA	CW, TE	James spiny mussel, Atlantic pigtoe	Open Cut-Dry Ditch	15	March 1 – July 31
Pipeline	Craig Creek	218.5	Montgomery, VA	CW, TE	James spiny mussel, Atlantic pigtoe	Open Cut-Dry Ditch	6	March 1 – July 31
Pipeline	Craig Creek	218.6	Montgomery, VA	CW, TE	James spiny mussel, Atlantic pigtoe	Open Cut-Dry Ditch	18	March 1 – July 31
Pipeline	Mill Creek	223.9	Montgomery, VA	CW, WT	Yellow lamp mussel	Open Cut-Dry Ditch	25	August 15 – June 30

**Table 3.1-2**

**Fisheries of Special Concern Crossed by the Project**

<b>Facility</b>	<b>Waterbody</b>	<b>MP</b>	<b>County</b>	<b>Fishery Type/Issue <u>a/</u></b>	<b>Species b/</b>	<b>Crossing Method</b>	<b>Stream Width at Crossing (feet)</b>	<b>Restricted In-stream Construction Window <u>c/</u></b>
Pipeline	North Fork Roanoke River	225.7	Montgomery, VA	CW, TE, WT	Roanoke logperch	Open Cut-Dry Ditch	20	October 1 – June 30
Access Road (MVP-MN-268)	North Fork Roanoke River	225.7	Montgomery, VA	CW, TE, WT	Roanoke logperch	Open Cut-Dry Ditch	20	October 1 – June 30
Pipeline	Bradshaw Creek	229.2	Montgomery, VA	CW, WT		Open Cut-Dry Ditch	25	October 1 – June 30
Access Road (MVP-MN-276)	Bradshaw Creek	230.0	Montgomery, VA	CW, WT		Open Cut-Dry Ditch	25	October 1 – June 30
Pipeline	Roanoke River	233.8	Montgomery, VA	WW, TE	Roanoke logperch, Orangefin madtom	Open Cut-Dry Ditch	100	March 15 – July 15
Pipeline	Bottom Creek	238.8	Roanoke, VA	CW, WT		Open Cut-Dry Ditch	14	October 1 – June 30
Access Road (MVP-RO-281)	Bottom Creek	239.5	Roanoke, VA	CW, WT		Open Cut-Dry Ditch	10	October 1 – June 30
Access Road (MVP-RO-282)	Bottom Creek	239.6	Roanoke, VA	CW, WT		Open Cut-Dry Ditch	10	October 1 – June 30
Pipeline	Bottom Creek	240.4	Roanoke, VA	CW, WT		Open Cut-Dry Ditch	5	October 1 – June 30
Pipeline	Mill Creek	242.9	Roanoke, VA	CW, WT, TE,	Orangefin madtom	Open Cut-Dry Ditch	10	October 1 – June 30
Pipeline	Green Creek	244.8	Franklin, VA	CW, WT		Open Cut-Dry Ditch	10	October 1 – June 30

**Table 3.1-2**

**Fisheries of Special Concern Crossed by the Project**

<b>Facility</b>	<b>Waterbody</b>	<b>MP</b>	<b>County</b>	<b>Fishery Type/Issue <u>a/</u></b>	<b>Species b/</b>	<b>Crossing Method</b>	<b>Stream Width at Crossing (feet)</b>	<b>Restricted In-stream Construction Window <u>c/</u></b>
Access Road (MVP-FR-290)	Green Creek	244.8	Franklin, VA	CW, WT		Open Cut-Dry Ditch	10	October 1 – June 30
Pipeline	North Fork Blackwater River	247.3	Franklin, VA	CW, WT		Open Cut-Dry Ditch	18	October 1 – June 30
Pipeline	Pigg River	286.3	Franklin, VA	CW, TE	Roanoke logperch, Yellow lampmussel	Open Cut-Dry Ditch	100	March 1 – June 30; August 15 – September 30

Note: MP listed for access roads is nearest pipeline MP.

a/ M = Mussel Stream

B2 = Trout Waters (WV only)

CW = Coldwater Stream; in-stream construction restriction from Sept. 15 – March 31 in WV and March 1 – June 30 in VA

WW = Warmwater Stream; in-stream construction restriction from April 1 – June 30 in WV and April 15 – July 15 in VA

TE = Threatened and Endangered Species Stream

WT = Wild Trout Stream (VA only); in-stream construction restriction from October 1 – March 31

ST = Stocked Trout Stream (VA only); in-stream construction restriction from March 15 – May 15

b/ Atlantic pigtoe mussel; VDGIF in-stream construction restriction from May 15 – July 31

Green floater mussel; VDGIF in-stream construction restriction from April 15 – June 15 and August 15 – September 30

James spinymussel; VDGIF in-stream construction restriction from May 15 – July 31

Orangefin madtom; VDGIF in-stream construction restriction from March 15 – May 31

Roanoke logperch; VDGIF in-stream construction restriction from March 15 – June 30

Yellow lampmussel; VDGIF in-stream construction restriction from April 15 – June 15 and August 15 – September 30

c/ Restricted In-stream Construction Windows = Any span of time within time-of-year restrictions set forth by U.S. Army Corps of Engineer's 401 Water Quality Certification for streams crossed in WV and by VDGIF time-of-year restrictions for warmwater streams, coldwater streams, or streams containing rare, threatened, or endangered species in VA.

Sources:

VDGIF Wildlife Environmental Review Map Service. (*EnviroReview Listed SppObs*; accessed March 11, 2015).

VDGIF Wildlife Environmental Review Map Service. (*TroutWaters*; accessed March 10, 2015).

VDGIF Special Legal Status Faunal Species, 2015. <http://www.dgif.virginia.gov/wildlife/virginiatescspecies.pdf>

WVDNR 2014 West Virginia Mussel Survey Protocol

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR3-8**



Revised 1/15/16

Table 3.2-3 Non-Native/Invasive Plant Species with the Potential to Occur Along the Project Route		
Scientific Name	Common Name	Location of observation <sup>1</sup>
<b>Highly Invasive Plant Species <u>a/</u></b>		
<i>Acer platanoides</i> *	Norway maple	Unknown
<i>Ailanthus altissima</i> *	tree-of-heaven	Giles; Montgomery; Roanoke; Franklin
<i>Alliaria petiolata</i> *	garlic mustard	Unknown
<i>Ampelopsis brevipedunculata</i>	porcelain-berry	N/A
<i>Arthraxon hispidus</i>	small carpgrass	N/A
<i>Berberis thunbergii</i> *	Japanese barberry	Roanoke
<i>Bromus tectorum</i> *	cheatgrass	Unknown
<i>Celastrus orbiculata</i> *	Asian bittersweet	Giles; Montgomery
<i>Centaurea stoebe</i> ssp. <i>micranthos</i> *	spotted knapweed	Montgomery
<i>Cirsium arvense</i> *	Canada thistle	Giles; Montgomery; Roanoke; Franklin; Pittsylvania
<i>Coronilla varia</i> *	purple crown-vetch	Montgomery; Roanoke; Franklin
<i>Dioscorea oppositifolia</i>	Chinese yam	N/A
<i>Dioscorea polystachya</i>	cinnamon vine	N/A
<i>Elaeagnus umbellata</i> var. <i>parvifolia</i> *	autumn olive	Giles; Montgomery; Roanoke; Franklin
<i>Euonymus alata</i>	winged spindletree	N/A
<i>Euonymus fortunei</i>	winter creeper	N/A
<i>Ficaria verna</i>	lesser celandine	N/A
<i>Hydrilla verticillata</i>	hydrilla	N/A
<i>Iris pseudocorus</i> *	yellow flag	Unknown
<i>Lespedeza cuneate</i> *	Chinese bushclover	Unknown
<i>Ligustrum sinense</i> *	Chinese privet	Unknown
<i>Ligustrum vulgare</i> *	European privet	Roanoke
<i>Lonicera japonica</i> *	Japanese honeysuckle	Webster; Giles; Montgomery; Roanoke; Franklin; Pittsylvania
<i>Lonicera maackii</i> *	Amur honeysuckle	Unknown
<i>Lonicera morrowii</i> *	Morrow's honeysuckle	Unknown
<i>Lonicera tatarica</i> *	Tatarian honeysuckle	Unknown
<i>Lythrum salicaria</i>	purple loosestrife	N/A
<i>Microstegium vimineum</i> *	Japanese stiltgrass	Giles; Montgomery; Franklin
<i>Murdannia keisak</i>	marsh dewflower	N/A
<i>Myriophyllum aquaticum</i>	parrot feather	N/A
<i>Myriophyllum spicatum</i>	Eurasian water-milfoil	N/A
<i>Persicaria perfoliata</i> *	mile-a-minute weed	Unknown
<i>Phalaris arundinacea</i> *	reed canarygrass	Giles
<i>Phellodendron japonicum</i>	cork tree	N/A

**Table 3.2-3  
Non-Native/Invasive Plant Species with the Potential to Occur Along the Project Route**

<b>Scientific Name</b>	<b>Common Name</b>	<b>Location of observation<sup>1</sup></b>
<i>Phragmites australis</i> *	common reed	Unknown
<i>Polygonum cuspidatum</i> *	Japanese knotweed	Roanoke; Franklin
<i>Polygonum perfoliatum</i> *	Asiatic tearthumb	Unknown
<i>Pueraria montana var. lobata</i> *	kudzu	Roanoke; Franklin
<i>Pyrus calleryana</i>	Bradford pear	N/A
<i>Rosa multiflora</i> *	multiflora rose	Webster; Greenbrier; Summers; Monroe; Giles; Montgomery; Roanoke; Franklin
<i>Rubus phoenicolasius</i>	wine raspberry, wineberry	N/A
<i>Schedonorus phoenix</i> *	tall fescue	Unknown
<i>Schedonorus pratensis</i> *	meadow fescue	Unknown
<i>Sorghum halepense</i> *	Johnson grass	Montgomery
<i>Urtica dioica</i>	European stinging nettle	N/A
<i>Vinca minor</i>	lesser periwinkle	N/A
<b>Moderately Invasive Plant Species <u>b/</u></b>		
<i>Aegopodium podagraria</i>	Bishop's goutweed	N/A
<i>Akebia quinata</i>	fiveleaf akebia	N/A
<i>Ampelopsis brevipedunculata</i>	Amur peppervine	N/A
<i>Arctium minus</i>	lesser burdock	N/A
<i>Agrostis capillaris</i>	colonial bent-grass	N/A
<i>Albizia julibrissin</i> *	mimosa, silktree	Roanoke; Franklin
<i>Barbarea vulgaris</i>	garden yellow-rocket	N/A
<i>Bromus commutatus</i>	meadow brome	N/A
<i>Bromus inermis ssp. inermis var. inermis</i> *	smooth brome	MP 216
<i>Bromus japonicus</i>	Japanese brome	N/A
<i>Bromus secalinus</i>	rye brome	N/A
<i>Bromus sterilis</i>	poverty brome	N/A
<i>Carduus nutans ssp. marcollepis</i>	nodding plumeless-thistle	N/A
<i>Centaurea nigrescens</i>	Wocheiner knapweed	N/A
<i>Chelidonium majus var. majus</i>	celandine	N/A
<i>Cirsium vulgare</i>	bull thistle	N/A
<i>Conium maculatum</i> *	poison-hemlock	Montgomery
<i>Cynoglossum officinale</i>	gypsy-flower	N/A
<i>Daucus carota</i> *	Queen Anne's-lace, wild carrot	MP 217, 221, 222, 225, 226, 227, 229, 234
<i>Dipsacus fullonum</i> *	Fuller's teasel, wild teasel	MP 224
<i>Dipsacus laciniatus</i> *	lacinate wild teasel	Unknown
<i>Duchesnea indica</i>	Indian-strawberry	N/A

**Table 3.2-3  
Non-Native/Invasive Plant Species with the Potential to Occur Along the Project Route**

<b>Scientific Name</b>	<b>Common Name</b>	<b>Location of observation<sup>1</sup></b>
<i>Echium vulgare*</i>	Viper's bugloss, bluethistle, bluedevil	Montgomery
<i>Elaeagnus angustifolia*</i>	Russian olive	Unknown
<i>Frangula alnus</i>	glossy false buckthorn	N/A
<i>Glechoma hederacea*</i>	ground-ivy, gill-over-the-ground	Unknown
<i>Hedera helix</i>	English ivy	N/A
<i>Hesperis matronalis</i>	mother-of-the-evening	N/A
<i>Hieracium caespitosum</i>	meadow hawkweed	N/A
<i>Holcus lanatus*</i>	common velvetgrass	Unknown
<i>Humulus japonicas*</i>	Japanese hops	Unknown
<i>Hypericum perforatum*</i>	common St. John's-Wort	Unknown
<i>Hypochaeris radicata</i>	hairy cat's-ear	N/A
<i>Lespedeza bicolor</i>	Japanese bushclover, shrubby bushclover	N/A
<i>Leucanthemum vulgare*</i>	oxeye daisy	Unknown
<i>Ligustrum obtusifolium ssp. obtusifolium</i>	border privet	N/A
<i>Linaria vulgaris</i>	butter-and-eggs	N/A
<i>Lolium perenne ssp. multiflorum*</i>	perennial ryegrass	Unknown
<i>Lonicera bella</i>	Bell's honeysuckle	N/A
<i>Lonicera standishii</i>	Standish's honeysuckle	N/A
<i>Lysimachia nummularia*</i>	creeping Jenny, moneywort	Unknown
<i>Melilotus officinalis*</i>	sweetclover	Unknown
<i>Miscanthus sinensis*</i>	Chinese silvergrass	Unknown
<i>Najas minor</i>	brittle naiad, brittle waternymph	N/A
<i>Ornithogalum nutans</i>	Drooping Star of Bethlehem	N/A
<i>Ornithogalum umbellatum</i>	Star of Bethlehem	N/A
<i>Pastinaca sativa*</i>	parsnip	Unknown
<i>Paulownia tomentosa*</i>	princess-tree, royal paulownia	Unknown
<i>Perilla frutescens*</i>	beefsteak plant	Montgomery; Pittsylvania
<i>Persicaria longiseta</i>	long-bristled smartweed	N/A
<i>Phyllostachys aurea</i>	golden bamboo	N/A
<i>Poa compressa*</i>	Canada bluegrass, flat-stemmed bluegrass	Unknown
<i>Poa pratensis ssp. pratensis*</i>	Kentucky bluegrass	Montgomery; Roanoke; Franklin
<i>Poa trivialis*</i>	rough bluegrass	Unknown
<i>Polygonum caespitosum var. longisetum*</i>	oriental lady's thumb	Unknown
<i>Potamogeton crispus</i>	curly pondweed	N/A
<i>Pyrus calleryana</i>	Callery pear	N/A
<i>Ranunculus ficaria var. bulbifera</i>	lesser celandine	N/A
<i>Rhamnus cathartica</i>	common buckthorn	N/A

**Table 3.2-3  
Non-Native/Invasive Plant Species with the Potential to Occur Along the Project Route**

<b>Scientific Name</b>	<b>Common Name</b>	<b>Location of observation<sup>1</sup></b>
<i>Rhodotypos scandens</i>	jetbead	N/A
<i>Rorippa nasturtium-aquaticum*</i>	watercress	Unknown
<i>Rumex acetosella*</i>	common sheep sorrel	Unknown
<i>Sedum sarmentosum*</i>	stonecrop	Unknown
<i>Spiraea japonica var. fortune*</i>	Japanese spiraea	Unknown
<i>Stellaria media</i>	common chickweed	N/A
<i>Stellaria media ssp. media</i>	common chickweed	N/A
<i>Stellaria media ssp. pallida</i>	common chickweed	N/A
<i>Ulmus pumila</i>	Siberian elm	N/A
<i>Verbascum thapsus*</i>	great mullein	Unknown
<i>Veronica hederifolia</i>	ivy-leaved speedwell	N/A
<i>Viburnum dilatatum</i>	Linden arrow-wood	N/A
<i>Wisteria sinensis</i>	Chinese Wisteria	N/A
<b>Low Risk Invasive Plant Species <u>c/</u></b>		
<i>Achillea millefolium var. occidentalis*</i>	western yarrow	Unknown
<i>Acinos arvensis</i>	mother-of-thyme, basil-thyme	N/A
<i>Agrostemma githago</i>	corn cockle	N/A
<i>Agrostis canina*</i>	velvet bent grass	Unknown
<i>Agrostis gigantean</i>	giant bentgrass	N/A
<i>Agrostis stolonifera</i>	creeping bentgrass	N/A
<i>Ajuga reptans</i>	blue bugle	N/A
<i>Allium vineale ssp. vineale</i>	wild garlic, crow garlic	N/A
<i>Anthoxanthum odoratum ssp. odoratum</i>	sweet vernal grass	N/A
<i>Arrhenatherum elatius</i>	tall oatgrass	N/A
<i>Arrhenatherum elatius var. elatius</i>	tall oatgrass	N/A
<i>Artemisia annua</i>	annual wormwood	N/A
<i>Artemisia vulgaris var. vulgaris*</i>	common mugwort	Unknown
<i>Arundo donax</i>	giant reed	N/A
<i>Berberis vulgaris</i>	European barberry	N/A
<i>Broussonetia papyrifera</i>	paper-mulberry	N/A
<i>Cardamine impatiens*</i>	bittercress	Unknown
<i>Carduus crispus</i>	curled thistle	N/A
<i>Centaurea cyanus</i>	garden coneflower	N/A
<i>Centaurea jacea</i>	Brown knapweed	N/A
<i>Centaurea nigra</i>	black knapweed, Spanish-Buttos	N/A
<i>Centaurea solstitialis</i>	yellow starthistle	N/A
<i>Cerastium fontanum ssp. Vulgare</i>	common mouse-ear chickweed	N/A
<i>Cerastium glomeratum</i>	sticky mouse-ear chickweed	N/A

**Table 3.2-3  
Non-Native/Invasive Plant Species with the Potential to Occur Along the Project Route**

<b>Scientific Name</b>	<b>Common Name</b>	<b>Location of observation<sup>1</sup></b>
<i>Chenopodium album</i> var. <i>album</i>	lamb's quarters	N/A
<i>Chenopodium ambrosioides</i> var. <i>ambrosioides</i>	Mexican tea	N/A
<i>Cichorium intybus</i> *	chicory, blue sailors	MP 217, 222, 223, 225
<i>Commelina communis</i> *	Asiatic dayflower	Montgomery
<i>Commelina communis</i> var, <i>communis</i>	Asiatic dayflower	N/A
<i>Convolvulus arvensis</i> *	field bindweed	Unknown
<i>Cosmos bipinnatus</i>	common cosmos	N/A
<i>Cruciata pedemontana</i> *	Piedmont bedstraw	Unknown
<i>Cynodon dactylon</i>	Bermuda grass	N/A
<i>Dactylis glomerata</i> ssp. <i>glomerata</i> *	orchard grass	MP 217, 221, 224, 227, 229
<i>Datura stramonium</i> *	Jimson weed	MP 217. 224
<i>Dianthus armeria</i> *	Deptford-pink	Montgomery; Franklin
<i>Egeria densa</i>	Brazilian water-weed	N/A
<i>Elaeagnus pungens</i>	thorny olive	N/A
<i>Eleusine indica</i>	goose grass, yard grass	N/A
<i>Elymus repens</i>	creeping wild rye	N/A
<i>Epilobium hirsutum</i>	hairy willow-herb	N/A
<i>Eragrostis ciliaris</i>	stinkgrass	N/A
<i>Eragrostis curvula</i>	weeping lovegrass	N/A
<i>Euphorbia esula</i> var, <i>esula</i> *	leafy spurge	Unknown
<i>Euphorbia lathyris</i>	caper spurge, mole plant, wolf's-milk	N/A
<i>Foeniculum vulgare</i>	sweet fennel	N/A
<i>Galium mollugo</i>	false baby's-breath	N/A
<i>Hemerocallis fulva</i> *	common day lily	Unknown
<i>Hemerocallis lilioasphodelus</i>	yellow day lilly	N/A
<i>Hibiscus syriacus</i>	Rose-of-Sharon, shrubby althea	N/A
<i>Hieracium floribundum</i>	smooth hawkweed	N/A
<i>Hieracium aurantiacum</i>	devil's paintbrush	N/A
<i>Hieracium pilosella</i> var. <i>pilosella</i>	mouse-ear hawkweed	N/A
<i>Hieracium piloselloides</i>	tall hawkweed	N/A
<i>Ipomoea coccinea</i>	red morning-glory	N/A
<i>Ipomoea hederacea</i>	ivy-leaved morning-glory	N/A
<i>Kummerowia stipulacea</i>	Korean bushclover	N/A
<i>Kummerowia striata</i>	Japanese clover	N/A
<i>Lactuca saligna</i>	willow lettuce	N/A
<i>Lamium amplexicaule</i>	henbit	N/A
<i>Lamium purpureum</i> var, <i>purpureum</i>	purple dead-nettle	N/A

**Table 3.2-3  
Non-Native/Invasive Plant Species with the Potential to Occur Along the Project Route**

<b>Scientific Name</b>	<b>Common Name</b>	<b>Location of observation<sup>1</sup></b>
<i>Lapsana communis</i>	nipplewort	N/A
<i>Leonurus cardiac ssp. Cardiac*</i>	motherwort	Montgomery
<i>Lepidium campestre</i>	cream-anther field pepperwort	N/A
<i>Lepidium densiflorum var. densiflorum</i>	dense peppergrass	N/A
<i>Lepidium perfoliatum</i>	clasping pepperwort	N/A
<i>Lepidium ruderales</i>	stinging pepperweed	N/A
<i>Lonicera fragrantissima</i>	sweet breath of spring, winter honeysuckle	N/A
<i>Lotus corniculatus*</i>	garden bird's-foot-trefoil	Unknown
<i>Malva moschata</i>	musk mallow	N/A
<i>Malva neglecta*</i>	common mallow	Unknown
<i>Malva sylvestris</i>	high mallow	N/A
<i>Malva verticillata</i>	whorled mallow, curled mallow	N/A
<i>Marrubium vulgare</i>	white horehound	N/A
<i>Medicago lupulina*</i>	black medic	Unknown
<i>Melia azedarach</i>	Chinaberry	N/A
<i>Mentha verticillata</i>	whorled mint	N/A
<i>Mentha gracilis</i>	small-leaved mint	N/A
<i>Mentha piperita*</i>	peppermint	Unknown
<i>Mentha rotundifolia</i>	roundleaf mint	N/A
<i>Mentha aquatic</i>	water mint	N/A
<i>Mentha spicata*</i>	spearmint	Unknown
<i>Microthlaspi perfoliatum</i>	perfoliate pennycress	N/A
<i>Miscanthus sinensis</i>	Chinese silver grass	N/A
<i>Morus alba*</i>	white mulberry	Unknown
<i>Murdannia keisak</i>	aneilema	N/A
<i>Muscari botryoides</i>	grape hyacinth	N/A
<i>Myosoton aquaticum</i>	giant chickweed	N/A
<i>Nepeta cataria*</i>	catnip	Unknown
<i>Papaver dubium</i>	scarlet poppy	N/A
<i>Pennisetum glaucum</i>	pearl-millet	N/A
<i>Phalaris canariensis</i>	canary grass	N/A
<i>Phleum pretense*</i>	timothy	MP 217, 221, 225, 226, 227
<i>Phyllostachys nigra</i>	black bamboo	N/A
<i>Picea abies</i>	Norway spruce	N/A
<i>Poa annua*</i>	annual bluegrass	Unknown
<i>Polygonum aviculare</i>	yard knotweed	N/A
<i>Polygonum convolvulus var. convolvulus</i>	black bindweed	N/A

**Table 3.2-3  
Non-Native/Invasive Plant Species with the Potential to Occur Along the Project Route**

<b>Scientific Name</b>	<b>Common Name</b>	<b>Location of observation<sup>1</sup></b>
<i>Polygonum orientale</i>	prince's feather	N/A
<i>Polygonum persicaria</i>	spotted lady's-thumb	N/A
<i>Populus alba</i>	white poplar	N/A
<i>Potentilla recta</i>	Sulphur cinquefoil	N/A
<i>Prunella vulgaris</i>	common self-heal	N/A
<i>Prunus avium</i>	sweet cherry	N/A
<i>Prunus mahaleb</i>	perfumed cherry	N/A
<i>Ranunculus acris var. acris</i>	tall buttercup, meadow buttercup	N/A
<i>Ranunculus arvensis</i>	corn crowfoot	N/A
<i>Ranunculus bulbosus</i>	bulbous buttercup	N/A
<i>Ranunculus flammula var. filiformis</i>	greater creeping spearwort	N/A
<i>Ranunculus repens</i>	creeping buttercup	N/A
<i>Ranunculus sardous</i>	hairy buttercup	N/A
<i>Raphanus raphanistrum</i>	wild radish	N/A
<i>Rhodotypos scandens</i>	jetbead, white kerria	N/A
<i>Rorippa sylvestris</i>	creeping yellowcress	N/A
<i>Rosa canina</i>	dog rose	N/A
<i>Rosa eglantheria</i>	sweetbrier	N/A
<i>Rubus illecebrosus</i>	strawberry-raspberry	N/A
<i>Rumex crispus ssp. crispus*</i>	curly dock	Unknown
<i>Salix alba</i>	white willow	N/A
<i>Saponaria officinalis*</i>	bouncing-bet	Unknown
<i>Senecio vulgaris</i>	common groundsel	N/A
<i>Senna obtusifolia</i>	coffeeweed	N/A
<i>Setaria faberi</i>	giant foxtail-grass	N/A
<i>Setaria italic</i>	foxtail millet	N/A
<i>Setaria verticillata</i>	bristly foxtail	N/A
<i>Setaria viridis var. viridis</i>	green foxtail	N/A
<i>Silene latifolia ssp. Alba</i>	white campion	N/A
<i>Sisymbrium altissimum</i>	tall hedge-mustard	N/A
<i>Sisymbrium officinale</i>	hedge mustard	N/A
<i>Solanum dulcamara var. dulcamara</i>	bittersweet	N/A
<i>Sonchus arvensis ssp. Uliginosus</i>	field sowthistle	N/A
<i>Sonchus asper ssp. Asper</i>	spiny sow thistle	N/A
<i>Sonchus oleraceus</i>	common sowthistle	N/A
<i>Stellaria graminea</i>	lesser stitchwort	N/A
<i>Torilis arvensis ssp. Arvensis</i>	hedge parsley	N/A
<i>Tragopogon dubius</i>	meadow goat's-beard	N/A
<i>Trapa natans</i>	water chestnut	N/A

**Table 3.2-3  
Non-Native/Invasive Plant Species with the Potential to Occur Along the Project Route**

<b>Scientific Name</b>	<b>Common Name</b>	<b>Location of observation<sup>1</sup></b>
<i>Trifolium arvense</i>	rabbit-foot clover	N/A
<i>Trifolium aureum</i> *	yellow hop clover	Unknown
<i>Trifolium campestre</i>	low hop clover	N/A
<i>Trifolium dubium</i>	small hop clover	N/A
<i>Trifolium hybridum</i>	alsike clover	N/A
<i>Trifolium incarnatum</i>	crimson clover	N/A
<i>Trifolium pretense</i> *	red clover	MP 217, 221, 222, 223, 229, 234
<i>Trifolium repens</i> *	white clover	MP 222; Giles; Montgomery; Roanoke; Franklin; Pittsylvania
<i>Trifolium resupinatum</i> *	reversed clover	Unknown
<i>Tussilago farfara</i> *	colt's-foot	Unknown
<i>Typha glauca</i> *	cattail	Unknown
<i>Veronica arvensis</i>	corn speedwell	N/A
<i>Veronica beccabunga</i>	European brooklime	N/A
<i>Veronica chamaedrys</i>	germander speedwell, bird's-eye speedwell	N/A
<i>Veronica filiformis</i>	filiform speedwell	N/A
<i>Veronica longifolia</i>	long-leaved speedwell	N/A
<i>Veronica officinalis</i> var. <i>officinalis</i>	common speedwell, gypsyweed	N/A
<i>Veronica persica</i> var. <i>persica</i>	bird's-eye speedwell	N/A
<i>Veronica polita</i>	field speedwell	N/A
<i>Veronica serpyllifolia</i> ssp. <i>serpyllifolia</i>	thyme-leaved speedwell	N/A
<i>Virburnum opulus</i> var. <i>opulus</i>	guelder-rose	N/A
<i>Vicia cracca</i> ssp. <i>cracca</i>	vetch	N/A
<i>Vicia grandiflora</i> *	large-flowered vetch	Unknown
<i>Vicia hirsute</i>	vetch	N/A
<i>Vicia sativa</i> ssp. <i>nigra</i>	common vetch	N/A
<i>Vicia sativa</i> ssp. <i>sativa</i>	spring vetch	N/A
<i>Vicia sepium</i> var. <i>sepium</i>	bush vetch	N/A
<i>Vicia tetrasperma</i>	four-seeded vetch	N/A
<i>Vicia villosa</i> ssp. <i>varia</i>	hairy-fruit vetch	N/A
<i>Vicia villosa</i> ssp. <i>villosa</i>	hairy vetch	N/A
<i>Vinca major</i>	greater periwinkle	N/A
<i>Wisteria floribunda</i>	Japanese wisteria	N/A
<i>Xanthium spinosum</i>	spiny cocklebur	N/A



**Table 3.2-3  
Non-Native/Invasive Plant Species with the Potential to Occur Along the Project Route**

Scientific Name	Common Name	Location of observation <sup>1</sup>
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<sup>1</sup> The list of locations for each species may not be exhaustive; locations are provided only for observations that included spatial information. When available, the milepost (MP) is provided. The range for the MP's in each county intersected by the Project Route is listed below:

West Virginia: Wetzel – MP 0.0 – 9.6; Harrison – MP 9.6-31.6, 32.7-33.7, 37.5-38.1; Doddridge – MP 31.6-32.7, 33.7-37.5; Lewis - MP 38.1-65.6; Braxton – MP 65.6-80.3; Webster – MP 80.3-109.5, 109.8-110.6; Nicholas – MP 109.5-109.8, 110.6-135.0; Greenbrier – MP 135.0-153.8, 154.3-156.7; Fayette – MP 153.8-154.3; Summers – MP 156.7-173.4; Monroe – MP 173.4-195.4

Virginia: Giles – MP 195.4-215.4; Craig – MP 215.4-217.1; Montgomery – MP 217.1-236.1; Roanoke – MP 236.1-244.4; Franklin – MP 244.4-281.0; Pittsylvania – MP 281.0-300.97

a/ Highly invasive species exhibit the most invasive tendencies in natural areas and native plant habitats. They pose a significant threat to native species, natural communities or the economy by disrupting ecosystem processes and causing major alterations in plant community composition and structure. They establish readily in natural systems and spread rapidly.

b/ Moderately invasive species may have minor influence on ecosystem processes, alter plant community composition, and affect community structure in at least one layer. They may become dominant in the understory layer without threatening all species found in the community. These species usually require a minor disturbance to become established.

c/ Occasionally invasive species generally do not affect ecosystem processes but may alter plant community composition by outcompeting one or more native plant species. They often establish in severely disturbed areas. The disturbance may be natural or human origin, such as icestorm damage, windthrow, or road construction. These species spread slowly or not at all from disturbed sites.

\* Species observed within the project area

Sources:

Virginia Department of Conservation and Recreation, Division of Natural Heritage, 2015.

[http://www.dcr.virginia.gov/natural\\_heritage/invspdflist.shtml](http://www.dcr.virginia.gov/natural_heritage/invspdflist.shtml)

West Virginia Division of Natural Resources, Natural Heritage Program, 2009.

<http://www.wvdnr.gov/wildlife/invasivewv.shtm>

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
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**ATTACHMENTS**

**Attachment RR3-10**

**Table 3.2-2** (Revised January 2016)

**Sensitive or Rare Plant Communities Potentially Affected by the Project**

Conservation Unit	Species/Community	County	MP <u>a/</u>	Consulting Agency	Pipeline Crossing (feet) <u>a/</u>	Area Affected (Acres) <u>a/</u>		Survey Status	Proposed Avoidance or Minimization	Acceptance of Proposed Avoidance or Minimization
						Cons. <u>b/</u>	Oper. <u>c/</u>			
Portions in Jefferson National Forest and NCNR Easement	purple fringeless orchid	Giles, VA	203.2	VDCR-DNH	1,218	4.6	1.4	Not Completed; scheduled for summer 2016	Historical record; population not considered extirpated but current status unknown. If found, avoidance and minimization measures will be developed in coordination with JNF and NCNR.	Pending
General Occurrence	snowy campion	Giles, VA	212.0	VDCR-DNH	N/A	N/A	N/A	N/A	The proposed Project route and facilities no longer cross this general occurrence area; No impacts are anticipated to this species	N/A
Upper Mill Creek Conservation Site	smooth coneflower	Montgomery, VA	223.3	VDCR-DNH	N/A	N/A	N/A	N/A	The proposed Project route and facilities no longer cross this Conservation Unit; No impacts are anticipated	N/A
	Appalachian Sugar Maple Chinquapin Oak Dry Calcareous Forest									
	Limestone/Dolomite Barren (Ridge and Valley Hillslope Type)									

Table 3.2-2

Sensitive or Rare Plant Communities Potentially Affected by the Project

Conservation Unit	Species/Community	County	MP <u>a/</u>	Consulting Agency	Pipeline Crossing (feet) <u>a/</u>	Area Affected (Acres) <u>a/</u>		Survey Status	Proposed Avoidance or Minimization	Acceptance of Proposed Avoidance or Minimization
						Cons. <u>b/</u>	Oper. <u>c/</u>			
Mill Creek Springs Natural Area Preserve	smooth coneflower	Montgomery, VA	223.4	VDCR-DNH	415	1.29	0.59	Complete	Surveys were negative for smooth coneflower; do not anticipate impacts to this species. The pipeline is proposed to cross this area adjacent to existing transmission line ROW to minimize visual impacts	Pending
Elliston Glades Conservation Site	Addison's leatherflower	Montgomery, VA	233.6	VDCR-DNH	N/A	N/A	N/A	N/A	Proposed route and workspace do not overlap with this Conservation Site; No impacts anticipated	N/A
	Canby's mountain-lover									
	smooth coneflower									
	Chestnut lip fern									
	Ridge and Valley Dolomite Woodland									
Pedlar Hills Natural Area Preserve	smooth coneflower	Montgomery, VA	233.6	VDCR-DNH	N/A	N/A	N/A	N/A	Proposed route and workspace do not overlap with this natural area; No impacts anticipated	N/A
	Cooper's milkvetch									
	Addison's leatherflower									
Grassy Hill Conservation Site	smooth coneflower	Franklin, VA	N/A	VDCR-DNH	N/A	N/A	N/A	N/A	Proposed route and workspace do not overlap with this Conservation Site; No impacts anticipated	N/A
	Piedmont fameflower									
	Central Appalachian Basic Ash – Hickory Woodland									

Table 3.2-2

Sensitive or Rare Plant Communities Potentially Affected by the Project

Conservation Unit	Species/Community	County	MP <u>a/</u>	Consulting Agency	Pipeline Crossing (feet) <u>a/</u>	Area Affected (Acres) <u>a/</u>		Survey Status	Proposed Avoidance or Minimization	Acceptance of Proposed Avoidance or Minimization
						Cons. <u>b/</u>	Oper. <u>c/</u>			
	Central Appalachian Acidic Oak – Hickory Forest									
	Central Appalachian Xeric Chestnut Oak – Virginia Pine Woodland									
Jacks Creek Conservation Site	Piedmont fameflower	Franklin, VA	N/A	VDCR-DNH	N/A	N/A	N/A	N/A	Proposed route and workspace do not overlap with this Conservation Site; No impacts anticipated	N/A
	weak bluegrass									
	prairie dropseed									
	Southern Piedmont Ultramafic Barren									

a/ N/A indicates the feature is not crossed by the pipeline

b/ Based on a 125-foot-wide construction right-of-way

c/ Based on a 50-foot-wide permanent operational right-of-way

Source:

VDCR-DNH, 2014. Digital Natural Heritage Conservation Sites Data

**Mountain Valley Pipeline, LLC  
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**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR3-11**

**Impacts to Interior Forest Tracts Crossed by the Mountain Valley Pipeline Project**

Revised 1/15/16

Interior Forest Tract ID <sup>1</sup>	Milepost <sup>2</sup>		Length Crossed (feet)	Pre-Construction Interior Forest Tract Totals		State	County	Impacts		Percent Change in Interior Forest Tract Totals <sup>3</sup>		Fragments Remaining <sup>4</sup>
	Enter	Exit		Edge (feet)	Area (acres)			Construction (acres)	Operation (acres)	Edge	Area	
WV Core-01	0.07	20.56	108,158.69	12,351,569.54	234,041.71	WV	Harrison	153.19	59.09	+ 7.90%	- 0.14%	30
							Wetzel	180.94	63.88			
WV Core-02	20.94	21.57	3,291.02	11,949.37	109.43	WV	Harrison	10.42	3.78	+ 254.72%	- 9.52%	4
WV Core-03	21.75	22.21	2,407.68	18,770.02	121.57	WV	Harrison	5.36	2.20	+ 81.15%	- 4.41%	2
WV Core-04	22.55	22.61	326.30	7,300.26	25.4	WV	Harrison	2.07	0.77	+ 141.59%	- 8.15%	4
WV Core-06	23.18	25.86	14,162.02	96,148.92	880.44	WV	Harrison	41.85	13.20	+ 106.76%	- 4.75%	7
WV Core-07	26.10	28.08	10,477.63	143,852.14	1,740.79	WV	Harrison	27.78	10.44	+ 53.07%	- 1.60%	5
WV Core-09	29.09	60.15	163,998.91	17,058,261.50	275,202.78	WV	Doddridge	43.78	19.13	+ 6.15%	- 0.13%	56
							Harrison	61.49	17.68			
							Lewis	252.81	93.73			
WV Core-10	45.0	45.39	2,110.94	30,511.72	138.17	WV	Lewis	3.96	1.65	+ 37.59%	- 2.87%	3
WV Core-11	46.4	46.61	1,120.94	6,886.60	33.33	WV	Lewis	2.18	1.62	+ 203.01%	- 11.40%	4
WV Core-12	60.54	143.28	436,859.28	53,412,204.14	2,018,585.08	WV	Braxton	213.44	73.97	+ 6.27%	- 0.06%	169
							Greenbrier	89.01	27.95			
							Lewis	95.31	29.75			
							Nicholas	282.12	92.15			
							Webster	494.45	183.41			

**Impacts to Interior Forest Tracts Crossed by the Mountain Valley Pipeline Project**

Interior Forest Tract ID <sup>1</sup>	Milepost <sup>2</sup>		Length Crossed (feet)	Pre-Construction Interior Forest Tract Totals		State	County	Impacts		Percent Change in Interior Forest Tract Totals <sup>3</sup>		Fragments Remaining <sup>4</sup>
	Enter	Exit		Edge (feet)	Area (acres)			Construction (acres)	Operation (acres)	Edge	Area	
WV Core-25	113.97	114.08	578.69	16,755.12	74.71	WV	Nicholas	1.43	0.66	+ 28.29%	- 1.91%	2
WV Core-27	143.65	143.65	3.17	6,199.27	38.53	WV	Greenbrier	0.74	0.02	+ 15.76%	- 1.92%	1
WV Core-28	143.92	155.86	63,065.90	5,335,280.18	146,423.63	WV	Fayette	29.59	9.20	+ 6.18%	- 0.08%	18
							Greenbrier	93.6	36.66			
WV Core-30	156.12	156.25	703.82	8,918.55	47.77	WV	Greenbrier	3.16	0.81	+ 83.75%	- 6.62%	3
WV Core-31	156.50	169.52	68,754.05	3,654,803.51	71,619.50	WV	Greenbrier	4.59	1.64	+ 14.58%	- 0.23%	11
							Summers	162.82	57.68			
WV Core-32	171.40	171.47	359.57	22,271.47	295.31	WV	Summers	0.96	0.41	+ 12.60%	- 0.32%	2
WV Core-33	171.85	172.67	4,295.81	27,686.36	212.15	WV	Summers	7.90	2.95	+ 72.23%	- 3.72%	4
WV Core-34	174.00	175.98	10,450.70	320,398.71	6,353.45	WV	Monroe	22.90	9.00	+ 23.10%	- 0.36%	9
WV Core-35	176.56	181.07	23,784.82	1,305,461.84	19,758.88	WV	Monroe	69.60	25.73	+ 15.35%	- 0.35%	5
WV Core-36	181.95	188.70	35,675.90	218,631.46	2,050.87	WV	Monroe	52.60	20.24	+ 72.66%	- 2.56%	10
WV Core-37	183.53	184.30	4,052.93	19,622.79	211.53	WV	Monroe	10.52	3.98	+ 145.13%	- 4.97%	4
WV Core-38	189.60	190.30	3,698.64	54,686.10	337.02	WV	Monroe	5.25	2.22	+ 33.94%	- 1.56%	4
WV Core-39	191.16	193.50	12,390.05	51,447.21	936.24	WV	Monroe	35.64	14.18	+ 190.63%	- 3.81%	3
WV Core-41	194.65	195.45	4,219.25	1,661,154.69	53,026.37	WV	Monroe	11.22	4.39	- 11.85%	- 0.02%	3
WV Core-42	N/A	N/A	N/A	19,106.78	109.01	WV	Harrison	5.6	0.00	+ 15.38%	- 5.14%	1



**Impacts to Interior Forest Tracts Crossed by the Mountain Valley Pipeline Project**

Interior Forest Tract ID <sup>1</sup>	Milepost <sup>2</sup>		Length Crossed (feet)	Pre-Construction Interior Forest Tract Totals		State	County	Impacts		Percent Change in Interior Forest Tract Totals <sup>3</sup>		Fragments Remaining <sup>4</sup>
	Enter	Exit		Edge (feet)	Area (acres)			Construction (acres)	Operation (acres)	Edge	Area	
VA Core-01	195.45	198.45	15,805.68	610,326.41	36,720.72	VA	Giles	73.58	31.27	+ 13.95%	- 0.20%	35
VA Core-02	N/A	N/A	N/A	31,487.33	354.08	VA	Giles	0.03	0.01	- 0.11%	- 0.01%	1
VA Core-03	204.03	205.62	8,402.59	76,357.03	1,190.50	VA	Giles	4.70	1.78	+ 3.50%	- 0.39%	2
VA Core-04	213.28	218.05	25,148.11	179,480.97	6,812.01	VA	Craig	10.42	3.95	+ 15.17%	- 0.55%	15
							Giles	14.44	6.49			
							Montgomery	13.28	5.29			
VA Core-05	218.08	220.98	15,275.57	257,807.39	11,745.39	VA	Montgomery	42.74	17.31	+ 10.93%	- 0.36%	6
VA Core-06	224.09	224.97	4,646.93	92,888.72	2,319.47	VA	Montgomery	18.98	4.91	+ 20.63%	- 0.82%	14
VA Core-07	226.0	227.80	9,547.82	216,874.23	5,782.49	VA	Montgomery	14.71	6.09	+ 4.55%	- 0.25%	8
VA Core-08	226.82	227.24	2,227.10	328,845.20	7,226.71	VA	Montgomery	9.26	2.57	+ 2.90%	- 0.13%	4
VA Core-09	229.43	232.64	16,938.77	137,760.64	5,723.58	VA	Montgomery	62.30	26.58	+ 44.34%	- 1.09%	11
VA Core-10	234.14	234.96	4,352.83	48,412.42	505.91	VA	Montgomery	15.24	7.02	+ 28.06%	- 3.01%	7
VA Core-11	236.35	240.05	19,532.83	180,856.73	6,404.65	VA	Roanoke	64.63	21.89	+ 29.42%	- 1.01%	9
VA Core-12	240.09	241.33	6,530.30	594,507.27	18,600.36	VA	Roanoke	17.70	7.78	+ 2.69%	- 0.09%	5
VA Core-13	244.46	249.25	25,313.90	474,679.37	10,632.92	VA	Franklin	68.73	25.56	+ 11.16%	- 0.65%	10
VA Core-14	250.28	253.21	15,508.42	238,322.82	6,026.63	VA	Franklin	16.22	6.85	+ 4.10%	- 0.27%	2
VA Core-15	275.00	275.32	1,639.44	47,035.45	815.34	VA	Franklin	4.50	1.88	+ 5.91%	- 0.55%	3

**Impacts to Interior Forest Tracts Crossed by the Mountain Valley Pipeline Project**

Interior Forest Tract ID <sup>1</sup>	Milepost <sup>2</sup>		Length Crossed (feet)	Pre-Construction Interior Forest Tract Totals		State	County	Impacts		Percent Change in Interior Forest Tract Totals <sup>3</sup>		Fragments Remaining <sup>4</sup>
	Enter	Exit		Edge (feet)	Area (acres)			Construction (acres)	Operation (acres)	Edge	Area	
VA Core-16	275.71	277.94	11,771.23	207,821.83	3,971.99	VA	Franklin	24.70	11.02	+ 1.90%	- 0.62%	7
VA Core-17	285.45	286.73	6,778.99	199,561.10	2,795.37	VA	Pittsylvania	24.00	6.99	+ 10.06%	- 0.86%	11

1 Data for West Virginia was derived from the West Virginia state forest fragmentation data produced by the Natural Resource Analysis Center (NRAC) at West Virginia University in 2012. This dataset ranks stands of forested land in West Virginia and determines Core Forest Areas based on acres of continuous habitat. Forest rankings include patch, edge, perforated, small core (< 250 acres), medium core (250 – 500 acres), and large core (> 500 acres). Only small, medium, and large cores greater than 25 acres were used during this analysis. Impacts on interior forested area crossed by the Project in Virginia were determined using data developed for the VDCR's Virginia Natural Landscape Assessment (VaNLA) project. The VaNLA project is a landscape-scale geospatial analysis used to identify, prioritize, and link natural lands within Virginia. Large patches of natural land with a minimum of 100 acres of interior cover and associated habitat fragments providing connectivity between large patches are collectively referred to as Ecological Core Areas (ECA). Each ECA is ranked based on its ecological integrity, with scores classified into five categories: C1 – Outstanding; C2 – Very High; C3 – High; C4 – Moderate; and C5 – General. Only C1, C2, and C3 Ecological Core Areas that are greater than 25 acres were used in this analysis.

2 Distances between Enter/Exit Milepost does not reflect true length crossed by the pipeline in each forest interior tract because many tracts contain gaps and/or edge habitat that the pipeline also intersects. N/A indicates that linear distance cannot be provided as the pipeline does not cross this forest interior tract but a non-linear feature (e.g., temporary workspace, compressor station, laydown yard, etc.) does intersect the tract and associated loss to habitat is reflected under the Construction and/or Operation Impacts columns.

3 % Change in Edge = (gain or loss of edge following construction / original edge measurement) X 100; % Change in Area = (Construction Impacts / Pre-Construction Interior Tract Area) X 100

4 The number of forested fragments created following construction of the Project within a given forest interior tract.

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR3-12**

Table 3.3-1 Wildlife Species with the Potential to Occur Along the Project Route

Common Name	Scientific Name	Giles	Craig	Montgomery	Roanoke	Franklin	Virginia	Wetzel	Harrison	Doddridge	Lewis	Braxton	Webster	Nicholas	Fayette	Greenbrier	Summers	Monroe	Habitat Type
open, shallow water with an abundance of vegetation. Edges of ponds, lakes, and slow-moving streams.																			
found in moist, well-drained, and undisturbed deciduous upland forests with suitable breeding ponds																			
found in moist forests near floodplains and occasionally upland/mountainous forests																			
found in moist forests near ponds and streams, occasionally on dry hillsides near wetlands																			
found in open, upland fields, meadows, forests, rocky hillsides, agricultural areas and suburban areas																			
flood plains and river bottoms, as well as woodland borders																			
perennial streams																			
seeps, springs, and small streams																			
in and near small streams																			
crevices of cliffs and rock outcrops																			
along streams, near seeps areas, and on wet rock faces																			
small, swiftly moving streams with numerous waterfalls and boulders																			
in or near small streams with rocky bottoms, seepages, flood plains, and frequently found under rocks and logs in forests																			
in or near small streams with rocky bottoms, seepages, flood plains, and frequently found under rocks and logs in forests																			
along streams/ditches/vernal ponds/seeps and forested floodplain areas																			
along streams, in springs and seepages, caves, and may also be found in terrestrial habitats.																			
twilight zone of limestone and sandstone caves																			
caves, fens, cool springs, small streams																			
males found in forested habitats throughout the year. Females are more found near nesting sites such as pools of water and fens																			
open woodlands, occasionally in urban areas																			
open woodlands, occasionally in urban areas																			
found in all aquatic habitats including ponds, large lakes, streams, rivers, and backwaters																			
ponds, marshes, swamps, and the borders of lakes/streams/rivers																			
low-lying open fields, meadows, deciduous and mixed deciduous/coniferous forest areas, and wooded ravines																			
edges of vegetated ponds/lakes/rivers/streams, as well as marshy and swampy areas																			
moist, deciduous forests with an abundance of leaf litter																			
adults found in permanent pools and efts are found in forested habitats																			
mixed deciduous, mixed hardwood-conifer, and coniferous forests																			
moist, deciduous forests																			
densely forested areas, hillsides near dense forests, and open shale-covered embankments																			
near streams, valley floors, hillsides and ridges in deciduous or mixed deciduous/coniferous forest																			
mature mixed deciduous, mixed hardwood-conifer, and coniferous forests																			
swamps, wet meadows/fields, deciduous forest																			
swampy areas of broad valleys, grassy swales, moist woodlands, or around heavily vegetated ponds																			
under rocks, mosses, and leaves in springs and small streams																			

<p><b>Reptiles</b></p> <p>Northern copperhead (<i>Agkistrodon contortrix mokasen</i>)</p> <p>Eastern wormsake (<i>Carphophis amoenus amoenus</i>)</p> <p>Snapping turtle (<i>Chelydra serpentina</i>)</p> <p>Eastern painted turtle (<i>Chrysemys picta picta</i>)</p> <p>Northern black racer (<i>Coluber constrictor constrictor</i>)</p> <p>Timber rattlesnake (<i>Crotalus horridus</i>)</p> <p>Northern ring-necked snake (<i>Diadophis punctatus edwardsii</i>)</p> <p>Eastern hog-nosed snake (<i>Heterodon platirhinos</i>)</p> <p>Eastern milksnake (<i>Lampropeltis triangulum triangulum</i>)</p> <p>Northern watersnake (<i>Nerodia sipedon sipedon</i>)</p> <p>Northern rough greensnake (<i>Ophedrys aestivus</i>)</p> <p>Eastern ratsnake (<i>Pantherophis alleghaniensis</i>)</p> <p>Common five-lined skink (<i>Plestiodon fasciatus</i>)</p> <p>Queensnake (<i>Regina septemvittata</i>)</p> <p>Eastern fence lizard (<i>Sceloporus undulatus</i>)</p>																			
deciduous forests, open fields and clearings, rock outcrops and ledges, open habitat with rocks and vegetation																			
mixed deciduous/coniferous forests, rocky bluffs, fields, edges of streams/wetlands																			
all aquatic habitats																			
all aquatic habitats except swift-moving streams																			
open forest, rock crevices/outcrops, meadows/fields/farmland																			
young and mature upland forests with rock outcrops/rock crevices/rock ledges																			
moist deciduous forests, rocky areas, edges of streams, grassy fields																			
upland fields, open forests, woody hillsides, gravel roads																			
deciduous forests, edges of ROWs and roads, rocky areas, wetland fringes, suburban areas																			
aquatic habitats including ponds, lakes, streams, rivers, canals, marshes, and swamps																			
forested habitats with vines, bushes, shrubs and trees and near marsh and river edges																			
swamp borders, river flood plains, rocky hillsides, mountain ledges, and open fields as well as developed, urban areas																			
power line/pipeline/roadway ROWs, open areas with rocks and logs																			
high water quality streams, creeks, rivers, ponds, lakes																			
rocky areas including quarries/outcrops/slides, open forests																			











Table 3.3-1 Wildlife Species with the Potential to Occur Along the Project Route

Common Name	Scientific Name	Gillis	Craig	Montgomery	Roanoke	Franklin	Pittsylvania	Wetzel	Harrison	Doddridge	Lewis	Braxton	Webster	Nicolas	Fayette	Greenbrier	Summers	Monroe	Habitat Type
American black bear <sup>a/</sup>	<i>Ursus americanus</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	variety of habitats including deciduous/coniferous/and mixed forests, swamps, farmland, and suburban areas
Red fox <sup>a/</sup>	<i>Vulpes vulpes</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	open and overgrown farmland, brushy areas, and wooded areas

<sup>a/</sup> Considered game species in West Virginia or Virginia

Sources:

Virginia Department of Game and Inland Fisheries, 2015. <http://www.vafwis.org/fwis/>

West Virginia Division of Natural Resources, 2015. <http://www.wvdnr.gov/wildlife/animals.shtr>

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR3-14**

**Table 3.3-2** (Revised January 2016)

**Significant or Sensitive Wildlife Habitats Potentially Impacted by the Project**

County	MP	Name of Area	Land Ownership/ Management	Pipeline Crossing (feet) <u>a/</u>	Area Affected (Acres) <u>a/</u>		Habitat Types Affected	Comments/Mitigation Measures
					Const. <u>b/</u>	Oper. <u>c/</u>		
Braxton, WV	68.8	Burnsville Lake Wildlife Management Area	USACE/WVDNR	178	0.46	0.2	Riparian, Aquatic	Immediately replant riparian vegetation following construction; strict adherence to E&SCP and SPCC measures
Webster, WV	81.7	Elk River Wildlife Management Area	WVDNR	N/A	N/A	N/A	N/A	Not crossed by the pipeline; do not anticipate impacts
Greenbrier, WV	156.0	Meadow River Wildlife Management Area	WVDNR	N/A	0.3	0.0	Upland forest/ agricultural edge	Proposed pipe yard; No proposed timber removal; will use existing agricultural field for pipe storage
Monroe, WV	181.8	Greenville Glenray Cave	Private	N/A	N/A	N/A	Karst, Caves	Greenville Glenray Cave is a new cave reported to be approximately 1,030 feet east of the pipeline; area has not been field reviewed
Monroe, WV Giles, VA Montgomery, VA	195.3 195.8 217.2	Jefferson National Forest	USFS	17,952	80.9	38.1	Upland forest, riparian	At minimum, will revegetate temporary and permanent workspace with native seed mixes as recommended by WHC; MVP will coordinate with USFS to determine best management practices and avoidance/minimization measures
Giles, VA	198.0	Stony Creek Stream Conservation Unit	VDCR	35	0.06	0.04	Riparian	Project Route crosses Stony Creek at this location to avoid crossing the Kimbalton and Klotz Quarries. Will revegetate temporary and permanent workspace with native seed mixes as recommended by WHC
Giles, VA	199.5	Kimballton Quarry Conservation Site	VDCR	N/A	3.8	2.1	Karst, Caves	Two existing access roads proposed within Conservation Site
Giles, VA	203.3	NCNR Easement	NCNR	2,148	6.5	2.5	Upland forest, grassland	Will revegetate temporary and permanent workspace with native seed mixes as recommended by WHC
Giles, VA	208.0	Pig Hole Conservation Site	VDCR	N/A	N/A	N/A	Karst, Caves	Pipeline workspace within 800 ft of Pig Hole Conservation Site

**Table 3.3-2**

**Significant or Sensitive Wildlife Habitats Potentially Impacted by the Project**

County	MP	Name of Area	Land Ownership/ Management	Pipeline Crossing (feet) <u>a/</u>	Area Affected (Acres) <u>a/</u>		Habitat Types Affected	Comments/Mitigation Measures
					Const. <u>b/</u>	Oper. <u>c/</u>		
Giles, VA	208.1	Pig Hole Cave	Private	N/A	N/A	N/A	Karst, Caves	Closest cave entrance is approximately 1,891 feet from proposed construction workspace
Giles, VA	209.0	Tawney's Cave	Private	N/A	N/A	N/A	Karst, Caves	Pipeline is approximately 830 feet west-southwest of the nearest entrance, but temporary access road workspace is within 561 feet of the nearest entrance; the proposed alignment will have no impact on the geology, hydrology, or recreational value of Tawney's Cave.
Giles, VA	209.9	Clover Hollow Conservation Site	VDCR	N/A	N/A	N/A	Mixed upland forest and agricultural land	Access road workspace within 40 ft of Clover Hollow; no impacts anticipated
Giles, VA	210.2	Smokehole Cave	Virginia Outdoors Foundation	N/A	N/A	N/A	Karst, Caves	Cave entrance is approximately 1,992 feet from the closest construction workspace and 2,000 feet from the proposed pipeline
Giles, VA	210.4	Hog Hole No.2	Private	N/A	N/A	N/A	Karst, Caves	Cave entrance is approximately 170 feet south of the pipeline, but may be a duplicate historic report of another feature (Overlooked Cave); area has not been field reviewed
Giles, VA	210.5	Overlooked Cave	Private	N/A	N/A	N/A	Karst, Caves	Cave entrance is approximately 200 feet from proposed pipeline and 56 feet from the closest construction workspace
Giles, VA	213.5	Canoe Conservation Site	VDCR	3,734	11.3	4.6	Mixed upland forest and agricultural/pasture land	Will revegetate temporary and permanent workspace with native seed mixes as recommended by WHC
Giles, VA	213.7	Canoe Cave	Private	N/A	N/A	N/A	Karst, Caves	Cave entrance is approximately 145 feet from proposed pipeline and 106 feet from the closest construction workspace

**Table 3.3-2**

**Significant or Sensitive Wildlife Habitats Potentially Impacted by the Project**

County	MP	Name of Area	Land Ownership/ Management	Pipeline Crossing (feet) <u>a/</u>	Area Affected (Acres) <u>a/</u>		Habitat Types Affected	Comments/Mitigation Measures
					Const. <u>b/</u>	Oper. <u>c/</u>		
Giles, VA	215.3	Jones Cave	Private	N/A	N/A	N/A	Karst, Caves	Jones Cave is approximately 740 feet north of the pipeline; this area has not been field reviewed
Montgomery, VA	219.4	Slussers Chapel Conservation Site	VDCR	16,562	50.5	20.0	Mixed upland forest and agricultural/pasture land	Will revegetate temporary and permanent workspace with native seed mixes as recommended by WHC
Montgomery, VA	220.9	unnamed cave	Private	N/A	N/A	N/A	Karst, Caves	A new cave reported 150 feet southeast of the pipeline; this area has not been field reviewed
Montgomery, VA	223.0	MON-VOF-3333	Virginia Outdoors Foundation	1,910	5.6	2.2	Pasture land, upland forest	Co-located pipeline with existing utility corridor; will revegetate temporary and permanent workspace with native seed mixes as recommended by WHC
Montgomery, VA	223.4	North Fork Roanoke River Preserve/ Mill Creek Springs Natural Area Preserve	The Nature Conservancy/ VDCR	415	1.29	0.59	Upland forest	Avoid important karst/sinkhole features; will revegetate temporary and permanent workspace with native seed mixes as recommended by WHC
Montgomery, VA	224.0	Old Mill Conservation Site	VDCR	3,903	18.2	4.6	Upland forest and shrub/scrub	Co-located pipeline with existing utility right-of-way; will revegetate workspace using native seed mix recommended by WHC
Montgomery, VA	224.6	Hancock Blowhole No. 1 & 2	Private	N/A	N/A	N/A	Karst, Caves	Approximately 175 feet south of the project; area has yet to be field reviewed
Montgomery, VA	232.7	Elliston Glades Conservation Site	VDCR	N/A	N/A	N/A	Agricultural	Adjusted proposed pipe yard footprint outside of conservation site
Montgomery, VA	232.5	MON-VOF-1871	Virginia Outdoors Foundation	318	4.23	2.4	Agricultural, shrub/scrub, upland forest	Will revegetate temporary and permanent workspace with native seed mixes as recommended by WHC

Table 3.3-2

## Significant or Sensitive Wildlife Habitats Potentially Impacted by the Project

County	MP	Name of Area	Land Ownership/ Management	Pipeline Crossing (feet) <u>a/</u>	Area Affected (Acres) <u>a/</u>		Habitat Types Affected	Comments/Mitigation Measures
					Const. <u>b/</u>	Oper. <u>c/</u>		
Roanoke, VA	233.8	Roanoke River – North and South Forks Stream Conservation Unit	VDCR	17	0.04	0.02	Riparian, Aquatic	Immediately replant riparian vegetation following construction; strict adherence to E&SCP and SPCC measures
Roanoke, VA	237.2	ROA-VOF-2563	Virginia Outdoors Foundation	N/A	0.4	0.0	Upland forest	After construction, temporary access road will be removed, surface graded to original contours, and land restored to its original use unless requested otherwise by landowner
Roanoke, VA	237.5	The Nature Conservancy Easement	The Nature Conservancy	7,025	23.9	8.1	Upland forest, shrub/scrub	After construction, temporary access road will be removed, surface graded to original contours, and land restored to its original use unless requested otherwise by landowner; Will revegetate temporary and permanent pipeline workspace with native seed mixes as recommended by WHC
Roanoke, VA	241.1	Conservation Easement	Blue Ridge Land Conservancy	N/A	<0.01	0.0	Agricultural	Fraction of temporary workspace intersects easement property; will allow to revegetate naturally

a/ N/A indicates the feature is not crossed by the proposed pipeline

b/ Based on a 125-foot-wide construction right-of-way

c/ Based on a 50-foot-wide permanent operational right-of-way

## Sources:

VDCR-DNH Digital Natural Heritage Conservation Sites Data Subscription. (*ConservationLands*; accessed January 13, 2015).

WVDNR West Virginia Wildlife Management Areas. <http://www.wvdnr.gov/Hunting/WMAMap.shtm> (accessed March 16, 2015).

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR3-18**

Species Survey Timeline Table 1.1: WVUSFWS

Revised 1/15/16

Taxonomic Group	Species Scientific Name	Species Common Name	Date Study Plan Submitted	Date Study Plan Response Received	Date Report Submitted	Date Report Comments Received
Mammals	<i>Myotis sodalis</i>	Indiana bat	6/3/2015	6/4/2015	11/13/2015	12/30/2015
	<i>Myotis septentrionalis</i>	northern long-eared bat	6/3/2015	6/4/2015	11/13/2015	12/30/2015
	<i>Corynorhinus townsendii virginianus</i>	Virginia big-eared bat	6/3/2015	6/4/2015	11/13/2015	12/30/2015
Plants	<i>Scirpus ancistrochaetus</i>	northeaster bulrush	6/3/2015	6/29/2015	11/13/2015	12/30/2015
	<i>Trifolium stoloniferum</i>	running buffalo clover	6/3/2015	6/29/2015	11/13/2015	12/30/2015
	<i>Arabis serotina</i>	shale barren rock cress	6/3/2015	6/29/2015	11/13/2015	12/30/2015
	<i>Isotria medeoloides</i>	small whorled pogonia	6/3/2015	6/29/2015	11/13/2015	12/30/2015
	<i>Echinacea laevigata</i>	smooth coneflower	6/3/2015	6/29/2015	11/13/2015	12/30/2015
	<i>Spiraea virginiana</i>	Virginia spiraea	6/3/2015	6/29/2015	11/13/2015	12/30/2015
	<i>Clematis addisonii</i>	Addison's leatherflower	6/3/2015	6/29/2015	11/13/2015	12/30/2015
	<i>Paxistima canbyi</i>	Canby's mountain-lover	6/3/2015	6/29/2015	11/13/2015	12/30/2015
	<i>Calicanthus floridos</i>	sweet-shrub	6/3/2015	6/29/2015	11/13/2015	12/30/2015
	<i>Gaylussacia brachycera</i>	box huckleberry	6/3/2015	6/29/2015	11/13/2015	12/30/2015
	<i>Symphoricarpos albus</i>	common snowberry	6/3/2015	6/29/2015	11/13/2015	12/30/2015
	<i>Buckleya distichophylla</i>	piratebush	6/3/2015	6/29/2015	11/13/2015	12/30/2015
	Freshwater Invertebrates	<i>Pleurobema collina</i>	James spiny mussel	5/20/1015	7/13/2015	11/13/2015
Birds	<i>Haliaeetus leucocephalus</i>	bald eagle	10/13/2015	11/3/2015	1/6/2016	N/A
	<i>Trifolium stoloniferum</i>	running buffalo clover	6/3/2015	6/4/2015	11/13/2015	12/30/2015

\*N/A = Not Applicable, or Not Yet Received



Species Survey Timeline Table 1.2: VAUSFWS

Taxonomic Group	Species Scientific Name	Species Common Name	Date Study Plan Submitted	Date Study Plan Response Received	Date Report Submitted	Date Report Comments Received
Mammals	<i>Myotis sodalis</i>	Indiana bat	4/24/2015	5/8/2015	11/13/2015	N/A
	<i>Myotis septentrionalis</i>	northern long-eared bat	4/24/2015	5/8/2015	11/13/2015	N/A
	<i>Corynorhinus townsendii virginianus</i>	Virginia big-eared bat	4/24/2015	5/8/2015	11/13/2015	N/A
Plants	<i>Scirpus ancistrochaetus</i>	northeaster bulrush	6/3/2015	6/17/2015	11/13/2015	N/A
	<i>Trifolium stoloniferum</i>	running buffalo clover	6/3/2015	6/17/2015	11/13/2015	N/A
	<i>Arabis serotina</i>	shale barren rock cress	6/3/2015	6/17/2015	11/13/2015	N/A
	<i>Isotria medeoloides</i>	small whorled pogonia	6/3/2015	6/17/2015	11/13/2015	N/A
	<i>Echinacea laevigata</i>	smooth coneflower	6/3/2015	6/17/2015	11/13/2015	N/A
	<i>Spiraea virginiana</i>	Virginia spiraea	6/3/2015	6/17/2015	11/13/2015	N/A
	<i>Clematis addisonii</i>	Addison's leatherflower	6/3/2015	6/17/2015	11/13/2015	N/A
	<i>Paxistima canbyi</i>	Canby's mountain-lover	6/3/2015	6/17/2015	11/13/2015	N/A
	<i>Calicanthus floridos</i>	sweet-shrub	6/3/2015	6/17/2015	11/13/2015	N/A
	<i>Gaylussacia brachycera</i>	box huckleberry	6/3/2015	6/17/2015	11/13/2015	N/A
	<i>Symphoricarpos albus</i>	common snowberry	6/3/2015	6/17/2015	11/13/2015	N/A
<i>Buckleya distichophylla</i>	piratebush	6/3/2015	6/17/2015	11/13/2015	N/A	
Freshwater Invertebrates	<i>Pleurobema collina</i>	James spiny mussel	5/20/2015	N/A	11/13/2015	N/A
	<i>Fusonaia masoni</i>	Atlantic pigtoe	5/20/2015	N/A	11/13/2015	N/A
	<i>Lampsilis cariosa</i>	yellow lamp mussel	5/20/2015	N/A	11/13/2015	N/A
	<i>Lasmigona subviridis</i>	green floater	5/20/2015	N/A	11/13/2015	N/A

Taxonomic Group	Species Scientific Name	Species Common Name	Date Study Plan Submitted	Date Study Plan Response Received	Date Report Submitted	Date Report Comments Received
Freshwater Vertebrates	<i>Noturus gilberti</i>	orange-fin madtom	5/20/2015	N/A	11/13/2015	N/A
	<i>Percina rex</i>	Roanoke logperch	5/20/2015	N/A	11/13/2015	N/A
Reptiles	<i>Glyptemys muhlenbergii</i>	bog turtle	5/8/2015	N/A	N/A	N/A

\*N/A = Not Applicable, or Not Yet Received

Species Survey Timeline Table 1.3: WVDNR

Taxonomic Group	Species Scientific Name	Species Common Name	Date Study Plan Submitted	Date Study Plan Response Received	Date Report Submitted	Date Report Comments Received
Mammals	<i>Myotis sodalis</i>	Indiana bat	3/6/2015	4/13/2015	11/13/2015	N/A
	<i>Myotis septentrionalis</i>	northern long-eared bat	3/6/2015	4/13/2015	11/13/2015	N/A
	<i>Corynorhinus townsendii virginianus</i>	Virginia big-eared bat	3/6/2015	4/13/2015	11/13/2015	N/A
Plants	<i>Scirpus ancistrochaetus</i>	northeaster bulrush	6/3/2015	6/16/15	11/13/2015	N/A
	<i>Trifolium stoloniferum</i>	running buffalo clover	6/3/2015	6/16/15	11/13/2015	N/A
	<i>Arabis serotina</i>	shale barren rock cress	6/3/2015	6/16/15	11/13/2015	N/A
	<i>Isotria medeoloides</i>	small whorled pogonia	6/3/2015	6/16/15	11/13/2015	N/A
	<i>Echinacea laevigata</i>	smooth coneflower	6/3/2015	6/16/15	11/13/2015	N/A
	<i>Spiraea virginiana</i>	Virginia spiraea	6/3/2015	6/16/15	11/13/2015	N/A
	<i>Clematis addisonii</i>	Addison's leatherflower	6/3/2015	6/16/15	11/13/2015	N/A
	<i>Paxistima canbyi</i>	Canby's mountain-lover	6/3/2015	6/16/15	11/13/2015	N/A
	<i>Calicanthus floridos</i>	sweet-shrub	6/3/2015	6/16/15	11/13/2015	N/A
	<i>Gaylussacia brachycera</i>	box huckleberry	6/3/2015	6/16/15	11/13/2015	N/A
	<i>Symphoricarpos albus</i>	common snowberry	6/3/2015	6/16/15	11/13/2015	N/A
	<i>Buckleya distichophylla</i>	piratebush	6/3/2015	6/16/15	11/13/2015	N/A
	Freshwater Invertebrates	<i>Pleurobema collina</i>	James spiny mussel	5/20/2015	6/16/2015	11/13/2015
Birds	<i>Haliaeetus leucocephalus</i>	bald eagle	10/13/2015	11/3/2015	1/6/2016	N/A

\*N/A = Not Applicable, or Not Yet Received

Species Survey Timeline Table 1.4: VADGIF

Taxonomic Group	Species Scientific Name	Species Common Name	Date Study Plan Submitted	Date Study Plan Response Received	Date Report Submitted	Date Report Comments Received
Mammals	<i>Myotis sodalis</i>	Indiana bat	4/24/2015	5/11/2015	11/13/2015	N/A
	<i>Myotis septentrionalis</i>	northern long-eared bat	4/24/2015	5/11/2015	11/13/2015	N/A
	<i>Corynorhinus townsendii virginianus</i>	Virginia big-eared bat	4/24/2015	5/11/2015	11/13/2015	N/A
Plants	<i>Scirpus ancistrochaetus</i>	northeaster bulrush	6/3/2015	N/A	11/13/2015	N/A
	<i>Trifolium stoloniferum</i>	running buffalo clover	6/3/2015	N/A	11/13/2015	N/A
	<i>Arabis serotina</i>	shale barren rock cress	6/3/2015	N/A	11/13/2015	N/A
	<i>Isotria medeoloides</i>	small whorled pogonia	6/3/2015	N/A	11/13/2015	N/A
	<i>Echinacea laevigata</i>	smooth coneflower	6/3/2015	N/A	11/13/2015	N/A
	<i>Spiraea virginiana</i>	Virginia spiraea	6/3/2015	N/A	11/13/2015	N/A
	<i>Clematis addisonii</i>	Addison's leatherflower	6/3/2015	N/A	11/13/2015	N/A
	<i>Paxistima canbyi</i>	Canby's mountain-lover	6/3/2015	N/A	11/13/2015	N/A
	<i>Calicanthus floridos</i>	sweet-shrub	6/3/2015	N/A	11/13/2015	N/A
	<i>Gaylussacia brachycera</i>	box huckleberry	6/3/2015	N/A	11/13/2015	N/A
	<i>Symphoricarpos albus</i>	common snowberry	6/3/2015	N/A	11/13/2015	N/A
<i>Buckleya distichophylla</i>	piratebush	6/3/2015	N/A	11/13/2015	N/A	
Freshwater Invertebrates	<i>Pleurobema collina</i>	James spiny mussel	3/6/2015	5/29/2015	11/13/2015	N/A
	<i>Fusonaia masoni</i>	Atlantic pigtoe	3/6/2015	5/29/2015	11/13/2015	N/A
	<i>Lampsilis cariosa</i>	yellow lamp mussel	3/6/2015	5/29/2015	11/13/2015	N/A
	<i>Lasmigona subviridis</i>	green floater	3/6/2015	5/29/2015	11/13/2015	N/A

Taxonomic Group	Species Scientific Name	Species Common Name	Date Study Plan Submitted	Date Study Plan Response Received	Date Report Submitted	Date Report Comments Received
Freshwater Vertebrates	<i>Noturus gilberti</i>	orange-fin madtom	6/3/2015	6/5/2015	11/13/2015	N/A
	<i>Percina rex</i>	Roanoke logperch	6/3/2015	6/5/2015	11/13/2015	N/A
Reptiles	<i>Glyptemys muhlenbergii</i>	bog turtle	5/8/2015	5/11/2015	N/A	N/A
Birds	<i>Lanius ludovicianus</i>	loggerhead shrike	6/3/2015	6/29/2015	11/13/2015	N/A

\*N/A = Not Applicable, or Not Yet Received

Species Survey Timeline Table 1.5: VADCR

Taxonomic Group	Species Scientific Name	Species Common Name	Date Study Plan Submitted	Date Study Plan Response Received	Date Report Submitted	Date Report Comments Received
Plants	<i>Scirpus ancistrochaetus</i>	northeaster bulrush	6/3/2015	6/10/2015	11/13/2015	1/4/16
	<i>Trifolium stoloniferum</i>	running buffalo clover	6/3/2015	6/10/2015	11/13/2015	1/4/16
	<i>Arabis serotina</i>	shale barren rock cress	6/3/2015	6/10/2015	11/13/2015	1/4/16
	<i>Isotria medeoloides</i>	small whorled pogonia	6/3/2015	6/10/2015	11/13/2015	1/4/16
	<i>Echinacea laevigata</i>	smooth coneflower	6/3/2015	6/10/2015	11/13/2015	1/4/16
	<i>Spiraea virginiana</i>	Virginia spiraea	6/3/2015	6/10/2015	11/13/2015	1/4/16
	<i>Clematis addisonii</i>	Addison's leatherflower	6/3/2015	6/10/2015	11/13/2015	1/4/16
	<i>Paxistima canbyi</i>	Canby's mountain-lover	6/3/2015	6/10/2015	11/13/2015	1/4/16
	<i>Calicanthus floridos</i>	sweet-shrub	6/3/2015	6/10/2015	11/13/2015	1/4/16
	<i>Gaylussacia brachycera</i>	box huckleberry	6/3/2015	6/10/2015	11/13/2015	1/4/16
	<i>Symphoricarpos albus</i>	common snowberry	6/3/2015	6/10/2015	11/13/2015	1/4/16
	<i>Buckleya distichophylla</i>	piratebush	6/3/2015	6/10/2015	11/13/2015	1/4/16

\*N/A = Not Applicable, or Not Yet Received

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR4-22**



*The Culture Center*  
1900 Kanawha Blvd., E.  
Charleston, WV 25305-0300

**Randall Reid-Smith, Commissioner**

Phone 304.558.0220 • www.wvculture.org  
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EEO/AA Employer

November 16, 2015

Ms. Megan Landfried Neylon  
Senior Environmental Coordinator  
Mountain Valley Pipeline, LLC.  
625 Liberty Avenue, Suite 1700  
Pittsburgh, PA 15222

RE: Mountain Valley Pipeline Project, Cultural Resources Survey Volume II  
Braxton and Webster Counties, West Virginia  
FR# 15-67-Multi-10

Dear Ms. Neylon:

We have reviewed the draft report, *Mountain Valley Pipeline Project, Cultural Resources Survey, Volume II, Braxton and Webster Counties, West Virginia*, which was submitted in order to determine project effects to cultural resources. As required by Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations, 36 CFR 800: "Protection of Historic Properties," we submit our comments.

Architectural Resources:

We have reviewed the submitted report that was prepared by Tetra Tech, Inc. for the Mountain Valley Pipeline, LLC (MVP). The architectural and historical resources survey resulted in the identification of 24 historic resources, with fourteen (14) in Braxton County and ten (10) in Webster County. Tetra Tech evaluated their significance according to National Register of Historic Places (NRHP) Criteria of Evaluation, the historic context prepared for this project, and applicable National Register guidelines. As part of the evaluation, the historic significance and architectural integrity, specifically the seven aspects of integrity recognized by the NRHP, of each resource were assessed. In all, Tetra Tech recommended nine (9) of the newly identified historic resources eligible for listing in the NRHP. Of these nine resources, eight (8) resources are recommended as individually eligible as part of multiple property submissions and one (1) individually eligible resource. The remaining architectural resources are recommended as not eligible for the NRHP.

Following our review of the report and the Historic Property Inventory (HPI) forms, we agree with the consultant's recommendation that the following resources are *not eligible* for the NRHP: single dwelling, 275 Gregory Road (0018); single dwelling, CR4/Gauley Turnpike (0020); single dwelling, CR4/Gauley Turnpike (0022); Milroy Road Agricultural/Commercial Complex (0055); single dwelling, CR 23/Vernon Road (0056); Canter Farmstead (0120); Kerr Farmstead (0121); Mathes Farmstead (0058); single dwelling, CR 44-8/Meadow Fork Road (0059); single dwelling, CR 44-8/Meadow Fork Road (0061); single dwelling, CR 44-8/Meadow Fork Road (0062); single dwelling, CR 44-8/Meadow Fork Road (0063); Gatto Farmstead (0064); and the Lowery Farmstead (0065)

Comments specific to those architectural resources that are recommended as NRHP eligible are below. Comments that are specific to the four cemetery resources follow in "Cemetery Resources."

- **Multiple Property Submission Recommended Eligible: Rural Churches:** According to Tetra Tech's report, the rural church resource type proliferated in the counties which comprise the Project APE during the nineteenth and twentieth centuries, as many communities in the area erected small churches to meet the needs of local residents. Such buildings often functioned as a nexus of social and community activity, particularly prior to development of modern transportation networks. Character defining features include the rectangular,



one-room plan; white painted clapboard siding; front-gable roof; and symmetrical fenestration including a front-gable entry and three window openings along each longitudinal wall.

Tetra Tech documented three (3) churches that they recommend as NRHP eligible under Criteria A and C. In addition, Tetra Tech believes the Rural Churches Multiple Property Submission, introduced in Volume I of the Project report, should be expanded to include these three rural churches. According to Tetra Tech, the Pleasant Hill Church (0019), the Fall Run U.M.C. (0021/BX-0001-0085), and the Glade Summit Community Church (0006) retain all seven aspects integrity required for NRHP eligibility. Although modern siding materials have been applied, the character-defining stylistic features were retained.

Following our review of the report and HPI forms, we are unable to concur with this recommendation. We do not believe that the churches retain sufficient integrity nor are they significant within the history of Braxton and/or Webster counties. In our opinion, the three church buildings are *not eligible* for NRHP inclusion.

- **Multiple Property Submission Recommended Eligible: Agriculture-related Resources:** Tetra Tech identified one farmstead that is recommended as individually eligible for listing in the NRHP and as part of the Agriculture-Related Multiple Property Submission, originally discussed in Volume I of Tetra Tech's report. The Craven Farmstead (0122) is comprised of several domestic and agricultural structures and conveys its association with regional agricultural practices. Although access was limited to the publicly-owned right-of-way, it is Tetra Tech's opinion that the farmstead retains an intact assemblage of historic agricultural and domestic structures that embody regional characteristic construction features and the resource is NRHP-eligible under Criteria A and C.

After reviewing the report, HPI form and photos, we do not concur with the consultant's evaluation. Due to a lack of overall architectural integrity and lack of cohesion of historic resources within the farmstead, we believe that the Craven Farmstead (0141) is *not eligible* for the NRHP.

- **Individually Eligible Resource Recommendations:** Tetra Tech's field investigations identified one resource that is recommended as individually eligible for the NRHP. The c. 1900 Gregory Road Mill Complex is comprised of a c. 1900 farmhouse, mill, granary, two modern structures (carport and pavilion), and a c. 1900 store building, located directly across Gregory Road from the farmhouse. Although the condition and integrity of the interior mechanical workings of the mill is unknown, the exterior of these unaltered buildings and their spatial relationship collectively convey an association with regional historical trends in agriculture, light industry, and commerce. For these reasons, Tetra Tech recommends the complex NRHP-eligible under Criteria A and C. We concur with the evaluation that the Gregory Road Mill Complex is *eligible* for the NRHP; however, we request a recommended period of significance and a recommended NRHP boundary is provided to our office.

The Weston and Gauley Bridge Turnpike (NR 98001430) was placed in the NRHP in 1999, deriving its significance as an important component of a road system in West Virginia. Portions of the historic road are located in the vicinity of Burnsville and Walkersville, Braxton County. According to Tetra Tech, the conditions of the turnpike remain the same as when it was listed in 1999. Although photographic evidence within the report supports this assessment, the report does not fully reevaluate the listed resource against the NRHP Criteria of Evaluation. We request that you provide our office with an updated evaluation of the turnpike. This may be submitted as a report addendum and can be sent via e-mail to Jeff Smith of my staff. He can be reached via email at [Jeffrey.s.smith@wv.gov](mailto:Jeffrey.s.smith@wv.gov). We will comment further upon receipt of this information.

We understand that access issues, minor route variations, and the addition of temporary work spaces that were not defined at the time of the initial survey resulted in a small percentage of incomplete survey work at this time. We

understand that these survey results will be addressed in an addendum to this report.

Archaeological Resources:

Volume II of the technical report provides the results of systematic archaeological survey for Braxton and Webster Counties, WV. As in Volume I, the Shovel Test Maps in this report depict a number of areas within these counties that have not yet been surveyed. It is our understanding these areas will be surveyed at a later date and discussed in addendum reports. In total, 4,644 shovel probes were excavated, resulting in the identification of 25 archaeological sites and 20 isolated finds. The archaeological resources will be discussed by county.

**Braxton County:** Phase I survey of the direct APE in Braxton County resulted in the identification of nine archaeological sites, 46BX109, 46BX110, 46BX111, 46BX112, 46BX113, 46BX114, 46BX115, 46BX116 and 46BX117, and seven isolated finds, 46BX118, 46BX119, 46BX120, 46BX121, 46BX122, 46BX123 and 46BX124. Each of the isolated finds produced a single artifact. Additional shovel probes were negative for cultural materials. Because they lack research potential, we concur that they are not eligible for inclusion in the National Register of Historic Places.

Sites 46BX109, 46BX110, 46BX112, 46BX115 and 46BX117 are historic period remains associated with homesteads or farmsteads. Historic maps and artifacts suggest the sites broadly date to the 19<sup>th</sup> and 20<sup>th</sup> centuries. In general, the sites consist of low to very low density artifact scatters in association with structural remains. However, in all cases, the sites produced evidence suggesting the structures had been razed at some point in the past. Site 46BX113 consists of a dry stacked stone wall and three historic period artifacts found within a rock overhang. The site's function is unknown. Site 46BX116 consists of a large foundation, structural debris and three artifacts associated with the Stonecoal School. Due to the general paucity of artifacts, lack of subsurface features and lack of integrity, we concur with the report's recommendation that these sites are not eligible for inclusion in the National Register of Historic Places.

Site 46BX111 is a multi-component site consisting of the remains of a razed historic period barn, an associated low-density artifact scatter and a small prehistoric lithic scatter. The historic maps indicate the area was occupied from the late 19<sup>th</sup> to mid-20<sup>th</sup> century. This is broadly supported by the historic period assemblage, although diagnostic artifacts are lacking. The barn foundation is located outside of the APE and will not be affected by the proposed project. Evidence of the residence or other structural remains was not identified within the APE during the survey. The prehistoric assemblage includes a bifacial tool fragment, suggesting significant deposits may be present. We concur that the portion of the historic period component within the APE is not eligible for inclusion in the National Register of Historic Places. We also concur that the prehistoric component should undergo further investigation if the site cannot be avoided by the proposed project.

Site 46BX114 is a low density prehistoric lithic scatter that produced one bifacial tool fragment. Although no diagnostic artifacts or subsurface features were identified, the existence of the tool suggests that significant deposits may be present. As a result, we concur that this site should undergo further investigation if it cannot be avoided by the proposed project.

**Webster County:** Sixteen archaeological sites, 46WB405, 46WB406, 46WB407, 46WB408, 46WB409, 46WB410, 46WB411, 46WB412, 46WB413, 46WB414, 46WB415, 46WB416, 46WB417, 46WB418, 46WB419 and 46WB433, and thirteen isolated finds, 46WB420, 46WB421, 46WB422, 46WB423, 46WB424, 46WB425, 46WB426, 46WB427, 46WB428, 46WB429, 46WB430, 46WB431 and 46WB432 were identified in the direct APE during the archaeological survey in Webster County. Each of the isolated finds produced a single artifact. Additional shovel probes were negative for cultural materials. Because they lack research potential, we concur that they are not eligible for inclusion in the National Register of Historic Places.

Sites 46WB406, 46WB409, 46WB413, 46WB417 and 46WB418 are the remains of historic period homesteads or

farmsteads. In general, the sites consist of low density artifact scatters in association with structural remains such as foundations or, in the case of 46WB418, a walkway. Historic maps and artifacts broadly suggest the sites date to the 19<sup>th</sup> and 20<sup>th</sup> centuries; 46WB409 dates from circa mid-20<sup>th</sup> century to present. However, in many instances the structural remains were impacted when the structures were razed or modern items were found intermixed with historic period artifacts. Site 46WB408 consists of post-1954 container glass fragments found on the ground surface within a rockshelter. A shovel probe excavated within the rockshelter was negative for cultural materials. Site 46WB415 is a low-density scatter of household, architectural and other artifacts dating from the late 19<sup>th</sup> through the early 20<sup>th</sup> century. This site lacks associated structural remains and its function is unknown. Sites 46WB410, 46WB411 and 46WB419 are very low density prehistoric lithic scatters that lack diagnostic artifacts and tools. Due to the general paucity of artifacts, lack of subsurface features and/or lack of integrity, we concur with the report's recommendation that these sites are not eligible for inclusion in the National Register of Historic Places.

Sites 46WB405, 46WB412, 46WB414 and 46WB433 are low density lithic scatters that produced at least one tool or tool fragment. Although no diagnostic artifacts or subsurface features were identified, the existence of tools suggests that significant deposits may be present. As a result, we concur that this site should undergo further investigation if it cannot be avoided by the proposed project.

Site 46WB407 is an historic period artifact scatter with diagnostic artifacts suggesting an occupation dating from the early to mid-19<sup>th</sup> century through the 20<sup>th</sup> century. Although no structural remains or features were identified, the site may retain stratified deposits. As such we concur that this site should undergo further investigation if it cannot be avoided by the proposed project.

Site 46WB416 is a multi-component site consisting of a prehistoric lithic scatter and a diffuse historic period artifact scatter. The historic period component lacks diagnostic artifacts, associated structural components and evidence of subsurface features. Historic mapping does not indicate that a structure was located in this area. As such, we concur that the historic period component is not eligible for inclusion in the National Register of Historic Places. Although the prehistoric component also lacks diagnostic artifacts and cultural features, observations suggest the potential for intact deposits. As a result, if the site cannot be avoided by the proposed project, we concur that it undergoes further investigation.

In summary, we concur that the following sites and isolated finds are not eligible for inclusion in the National Register of Historic Places: 46BX109, 46BX110, 46BX112, 46BX113, 46BX115, 46BX116, 46BX117, 46BX118, 46BX119, 46BX120, 46BX121, 46BX122, 46BX123, 46BX124, 46WB406, 46WB408, 46WB409, 46WB410, 46WB411, 46WB413, 46WB415, 46WB417, 46WB418, 46WB419, 46WB420, 46WB421, 46WB422, 46WB423, 46WB424, 46WB425, 46WB426, 46WB427, 46WB428, 46WB429, 46WB430, 46WB431 and 46WB432. No further work is necessary for these sites. If the following sites cannot be avoided by the proposed project, we concur that they undergo further investigation to determine their National Register eligibility: the prehistoric component of 46BX111, 46BX114, 46WB405, 46WB407, 46WB412, 46WB414, the prehistoric component of 46WB416, and 46WB433.

Finally, we have reviewed the proposed Phase II work plans for sites 46BX111, 46BX114, 46WB405, 46WB407, 46WB412, 46WB414, 46WB416, and 46WB433. In general, the work plan proposes to excavate close interval shovel probes and/or a number of test units at each site. Any features encountered will be documented and excavated. Data gathered from the sites will be assessed for their ability to provide significant information regarding a variety of research topics including lithic technology, subsistence and settlement patterns. All recovered artifacts will be analyzed and a report will be submitted for our review. We concur with the proposed Phase II work plan for these sites.

#### Cemetery Resources:

According to the report, Tetra Tech recorded four new cemeteries during the survey of Braxton and Webster Counties. These cemetery resources include the Gibson Cemetery (0053/46BX125), the Krafft Cemetery (0054/46BX126), the

Slaughter Cemetery (0234/46BX127), and the Cox/McCray Family Cemetery (0235/46WB404). It is Tetra Tech's opinion that these four cemeteries meet NRHP eligibility requirements both individually and as contributing elements within a Multiple Property Submission. Cemeteries and gravesites are typically not considered eligible for inclusion in the NRHP unless they meet special requirements. To qualify for NRHP listing under Criteria A, B, or C, a cemetery or grave must meet the eligibility requirement for at least one of these criteria as well as those of Criteria Considerations C or D.

In Tetra Tech's opinion, these cemeteries possess the necessary qualities that render them eligible for the National Register and each is recommended as individually eligible for the NRHP under Criterion A. In addition, each meets the requirements of Criteria Considerations C and/or D. Finally, the previously recommended Rural Cemeteries Multiple Property Submission should be expanded to include these four cemeteries.

We are unable to concur with Tetra Tech's eligibility recommendations for these four cemetery resources. We do not believe that these cemeteries contain the burials of any persons of transcendent value, demonstrate distinctive design values, are associated with specific historic events, or have the potential to yield information. After our review of the submitted report and the West Virginia Cemetery forms, it is our opinion that these four cemeteries are *not eligible* for inclusion in the National Register of Historic Places.

In addition, Tetra Tech documented the Hickman Infant Cemetery (46WB434), a possible modern-era grave site. The cemetery is marked by a single wooden cross bearing the name Trevor Ray Hickman that is, based on second-hand and oral tradition, the location of an infant burial. The weathering and construction materials of the cross suggest it memorializes a fairly recent death. It is our understanding that field investigations and archival research were not able to confirm whether the cross functions as grave marker or a commemoration. Although no National Register recommendation was made, the recent age and nature of the grave or memorial indicate that it is not eligible for inclusion in the National Register of Historic Places.

We look forward to receiving the additional report volumes and assessments of effect to known historic resources.

We appreciate the opportunity to be of service. *If you have questions regarding our comments or the Section 106 process, please contact Jeffrey S. Smith, Structural Historian, or Lora A. Lamarre-DeMott, Senior Archaeologist, at (304) 558-0240.*

Sincerely,



Susan M. Pierce  
Deputy State Historic Preservation Officer

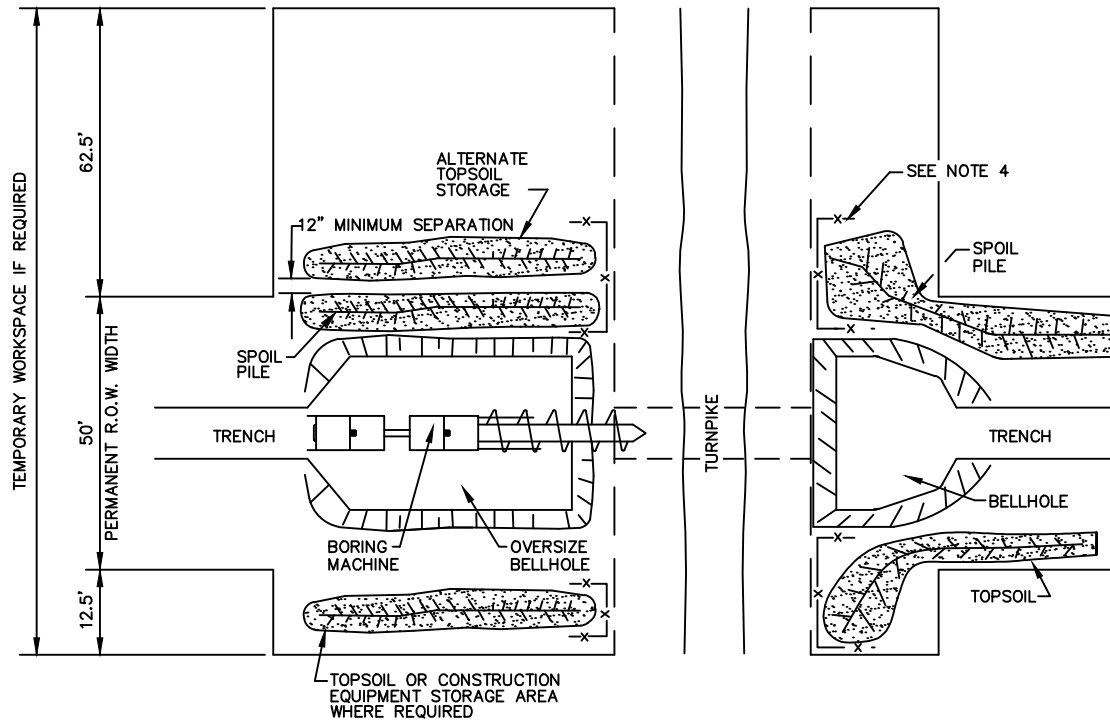
SMP/JSS/LLD

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

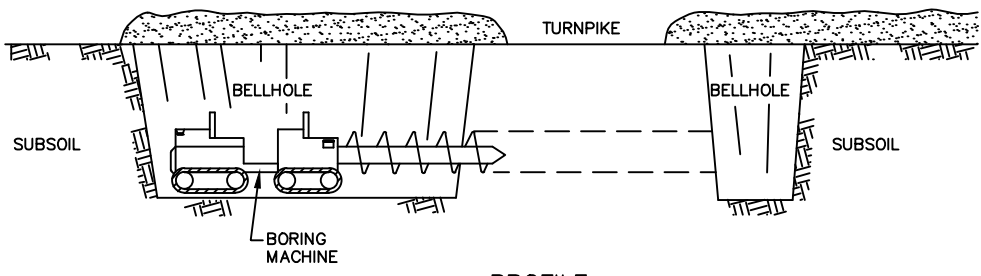
**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR4-22a**



PLAN VIEW



PROFILE

NOTES:

1. STRIP TOPSOIL FROM THE BELLHOLE AREA IN UNMANAGED WOODLAND. STRIP TOPSOIL FROM THE BELLHOLE AND SPOIL STORAGE AREA ON AGRICULTURAL LAND.
2. EXCAVATE BELLHOLE, STORING SPOIL ON OPPOSITE SIDE OF R.O.W. FROM TOPSOIL OR ADJACENT TO TOPSOIL MAINTAINING A MINIMUM 12 INCHES OF SEPARATION TO AVOID MIXING TOPSOIL AND SPOIL.
3. THE SIDES OF THE BORE PITS SHALL BE SLOPED BACK TO STABLE CONFIGURATION UNLESS SUPPORTED BY SHEET PILING OR OTHER SHORING MEANS. INSTALL SAFETY FENCE AROUND BORE PITS AS NECESSARY.
4. INSTALL TEMPORARY EROSION CONTROL PROCEDURES AS SPECIFIED IN THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. DEWATER BORE PIT TO CONTROL SEEPAGE WATER FLOW. DEWATER INTO AN APPROPRIATE DEWATERING STRUCTURE.
6. UPON COMPLETION OF PIPE INSTALLATION AND TIE-INS, BACKFILL PIT SPOIL. MINIMIZE POST CONSTRUCTION SETTLEMENT BY COMPACTING BACKFILL USING STANDARD PIPELINE CONSTRUCTION EQUIPMENT AVAILABLE AT SITE. LEAVE A CROWN TO ALLOW FOR SUBSIDENCE OF THE BACKFILL. RESPREAD SALVAGED TOPSOIL AND COMPACT.

DRAWN	JDM	DATE	9/1/15
CHECKED		DATE	
APP'D		DATE	
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:			
Figure 7.2.2-2			



DESIGN ENGINEERING

<b>TYPICAL CONSTRUCTION DETAIL</b>	
WESTON-GAULEY TURNPIKE CONVENTIONAL BORE	
DRAWING NO.	REV.
MVP-20	P

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR4-31**



# HAUDENOSAUNEE

TUSCARORA NATION

2006 MT. HOPE ROAD — VIA: LEWISTON, NEW YORK 14092

November 18, 2015

Mountain Valley Pipeline, LLC  
625 Liberty Avenue, Suite 1700  
Pittsburgh, PA 15222

Subject: Mountain Valley Docket No. CP16-10  
FERC No. CP16-10

To Whom It May Concern:

The Tuscarora Nation has received your letter in regards to the above pipeline project in West Virginia and Virginia. The Tuscarora Nation is concerned to the destroying of the home for natural life, (Birds and Wild Animals). We ask that great concern be given for the Natural World. We also ask that during this project, should you uncover any human remains, funerary or sacred objects that you cease work and notify the Tuscarora Nation, and any and all Native American Nations you have sent the letter dated November 5, 2015 too. Please keep the Tuscarora Nation on your mailing and consultation list during this project from the start till the end.

Thank you for your cooperation in this proposed project.

ONEH!

Chief Leo R. Henry, Clerk  
Tuscarora Nation





The Delaware Nation  
Cultural Preservation Office  
P.O. Box 825 - 31064 State Highway 281- Anadarko, OK 73005  
Phone: 405/247-2448 – Fax: 405/247-8905

NAGPRA ext. 1403  
Section 106 ext. 1181  
Museum ext. 1181  
Library ext. 1196  
Clerk ext. 1182

---

February 11, 2015

RE: FERC Docket NO. PF15-3-000 - Mountain Valley Pipeline Project

Ms. Neylon,

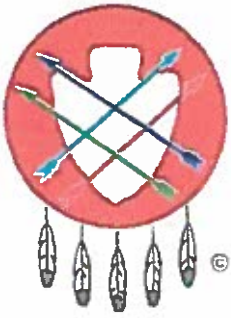
The Delaware Nation Cultural Preservation Department received correspondence regarding the above referenced project. Our office is committed to protecting sites important to tribal heritage, culture and religion. Furthermore, the tribe is particularly concerned with archaeological sites that may contain human burials or remains, and associated funerary objects.

As described in your correspondence and upon research of our database(s) and files, we find that the Lenape people occupied this area either prehistorically or historically. However, the location of the project does not endanger cultural or religious sites of interest to the Delaware Nation. Please continue with the project as planned. However, should this project inadvertently uncover an archaeological site or object(s), we request that you halt all construction and ground disturbance activities and immediately contact the appropriate state agencies, as well as our office (within 24 hours).

Please Note the Delaware Nation, the Delaware Tribe of Indians, and the Stockbridge Munsee Band of Mohican Indians are the only Federally Recognized Delaware/Lenape entities in the United States and consultation must be made only with designated staff of these three tribes. We appreciate your cooperation in contacting the Delaware Nation Cultural Preservation Office to conduct proper Section 106 consultation. Should you have any questions regarding this email or future consultation feel free to contact our offices at 405-247-2448 or by email [nalligood@delawarenation.com](mailto:nalligood@delawarenation.com).

Sincerely,

Nekole Alligood  
Director



**PEORIA TRIBE OF INDIANS OF OKLAHOMA**

118 S. Eight Tribes Trail (918) 540-2535 FAX (918) 540-2538  
P.O. Box 1527  
MIAMI, OKLAHOMA 74355

CHIEF  
John P. Froman  
  
SECOND CHIEF  
Jason Dollarhide

June 9, 2015

Megan Landfried Neylon  
Senior Environmental Coordinator  
Mountain Valley Pipeline  
625 Liberty Avenue, Suite 1700  
Pittsburgh, PA 15222

Re: Mountain Valley Pipeline Project  
Wetzel, Harrison, Doddridge, Lewis, Braxton, Webster, Nicholas, Greenbrier, Fayette,  
Summers, and Monroe Counties, WV, and Giles, Montgomery, Roanoke, Franklin, and  
Pittsylvania Counties, VA  
FERC Docket No. PF15-3-000

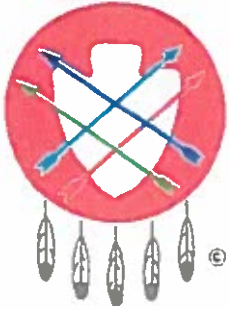
Thank you for providing notice of the revision to the referenced project. The Peoria Tribe of Indians of Oklahoma is unaware of any documentation directly linking Indian Religious Sites to the newly proposed project location. There appear to be no objects of cultural significance or artifacts linked to our tribe located on or near the project location.

The Peoria Tribe of Indians of Oklahoma is unaware of items covered under NAGPRA (Native American Graves Protection and Repatriation Act) to be associated with the proposed project site. These items include: funerary or sacred objects; objects of cultural patrimony; or ancestral human remains.

The Peoria Tribe still has no objection at this time to the proposed Mountain Valley Pipeline project. If, however, at any time items are discovered which fall under the protection of NAGPRA, the Peoria Tribe requests immediate notification and consultation. In addition state, local and tribal authorities should be advised as to the findings and construction halted until consultation with all concerned parties has occurred.

Thank you,

Logan Pappenfort  
Special Projects Manager/NAGPRA



**PEORIA TRIBE OF INDIANS OF OKLAHOMA**

118 S. Eight Tribes Trail (918) 540-2535 FAX (918) 540-2538

P O Box 1527

MIAMI, OKLAHOMA 74355

CHIEF  
John P. Froman

SECOND CHIEF  
Jason Dollarhide

December 9, 2014

Megan Landfried Neylon  
Senior Environmental Coordinator  
Mountain Valley Pipeline  
625 Liberty Avenue, Suite 1700  
Pittsburgh, PA 15222

Re: Mountain Valley Pipeline Project  
FERC Docket No. PF15-3-000

Thank you for providing notice of the referenced project. The Peoria Tribe of Indians of Oklahoma is unaware of any documentation directly linking Indian Religious Sites to the proposed project location. There appear to be no objects of cultural significance or artifacts linked to our tribe located in or near the project location.

The Peoria Tribe of Indians of Oklahoma is unaware of items covered under NAGPRA (Native American Graves Protection and Repatriation Act) to be associated with the proposed project site. These items include: funerary or sacred objects; objects of cultural patrimony; or ancestral human remains.

The Peoria Tribe has no objection at this time to the proposed economic development (construction) project. If, however, at any time items are discovered which fall under the protection of NAGPRA, the Peoria Tribe requests immediate notification and consultation. In addition state, local and tribal authorities should be advised as to the findings and construction halted until consultation with all concerned parties has occurred.

Thank you,

Cynthia Stacy  
Special Projects Manager/NAGPRA

ORIGINAL

PF15-3-000

# Stockbridge-Munsee Tribal Historic Preservation Office

Sherry White - Tribal Historic Preservation Officer

713447 Camp 14 Road

P.O. Box 70

Bowler, WI 54416

FILED  
DEPARTMENT OF THE  
COMMISSION

2015 MAY -4 A 9 13

FEDERAL ENERGY  
REGULATORY COMMISSION

Date 4-27-15  
 Project Number Mountain Valley Pipeline  
 TCNS Number West Virginia & Virginia Docket # PF15-3-000  
 Company Name Federal Energy Regulation Commission

We have received your letter for the above listed project. Before we can process the request we need more information. The additional items needed are checked below.

### Additional Information Required:

- Site visit by Tribal Historic Preservation Officer
- Archeological survey, Phase 1
- Colored maps
- Pictures of the site
- Any reports the State Historic Preservation Office may have
- Review fee of \$300.00 must be included with letter
- Has site been previously disturbed, please explain what the use was and when it was disturbed

### After reviewing your letter:

- We are in the process of gathering more information on this site and will respond to your project request once all information has been gathered.
- This project has the potential to affect a Mohican cultural site, please contact us
- This project is not within Mohican area of interest
- This project is within Mohican territory, but we are not aware of any cultural site within the project area.

### Additional comments

NO more information on this  
Project is necessary  
Thank you

Should this project inadvertently uncover a Native American site, we require you to halt all construction and notify the Stockbridge-Munsee Tribe immediately.

Please do not resubmit projects for changes that are not ground disturbance

*Sherry White*  
 Sherry White, Tribal Historic Preservation Officer

# Stockbridge-Munsee Tribal Historic Preservation Office

Sherry White - Tribal Historic Preservation Officer  
W13447 Camp 14 Road  
P.O. Box 70  
Bowler, WI 54416

Date 12-09-14  
Project Number FERC Docket NO. PE15-3-000  
TCNS Number Mountain Valley Pipeline Project  
Company Name Mountain Valley Pipeline LLC

We have received your letter for the above listed project. Before we can process the request we need more information. The additional items needed are checked below.

### Additional Information Required:

- Site visit by Tribal Historic Preservation Officer
- Archeological survey, Phase 1
- Colored maps
- Pictures of the site
- Any reports the State Historic Preservation Office may have
- Review fee of \$300.00 must be included with letter
- Has site been previously disturbed, please explain what the use was and when it was disturbed

### After reviewing your letter:

- We are in the process of gathering more information on this site and will respond to your project request once all information has been gathered.
- This project has the potential to affect a Mohican cultural site, please contact us
- This project is not within Mohican area of interest
- This project is within Mohican territory, but we are not aware of any cultural site within the project area.

Additional comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Should this project inadvertently uncover a Native American site, we require you to halt all construction and notify the Stockbridge-Munsee Tribe immediately.

Please do not resubmit projects for changes that are not ground disturbance

*Sherry White*  
Sherry White, Tribal Historic Preservation Officer

**From:** [Lisa LaRue Baker](#)  
**To:** [mneylon@egt.com](mailto:mneylon@egt.com); [Sparks, Sean](#)  
**Cc:** [yerna](#); [eberry@unitedkeetoowahband.org](mailto:eberry@unitedkeetoowahband.org)  
**Subject:** Mountain Valley Pipeline Project, FERC Docket No PF15-3-000  
**Date:** Wednesday, December 17, 2014 5:15:22 PM

---

We have received your notification on the above titled project. The United Keetoowah Band of Cherokee Indians in Oklahoma has reviewed your project under Section 106 of the NHPA. At this time, we have no comment or objection, but retain the right to re-enter consultation at any time. Please continue to send us any information, including archeological information, regarding this project.

If any human remains are inadvertently discovered, please cease all work and contact us immediately.

Thank you,

**Lisa C. Baker**  
Acting THPO  
United Keetoowah Band of Cherokee Indians in Oklahoma  
PO Box 746  
Tahlequah, OK 74465

c 918.822.1952  
[ukbthpo-larue@yahoo.com](mailto:ukbthpo-larue@yahoo.com)

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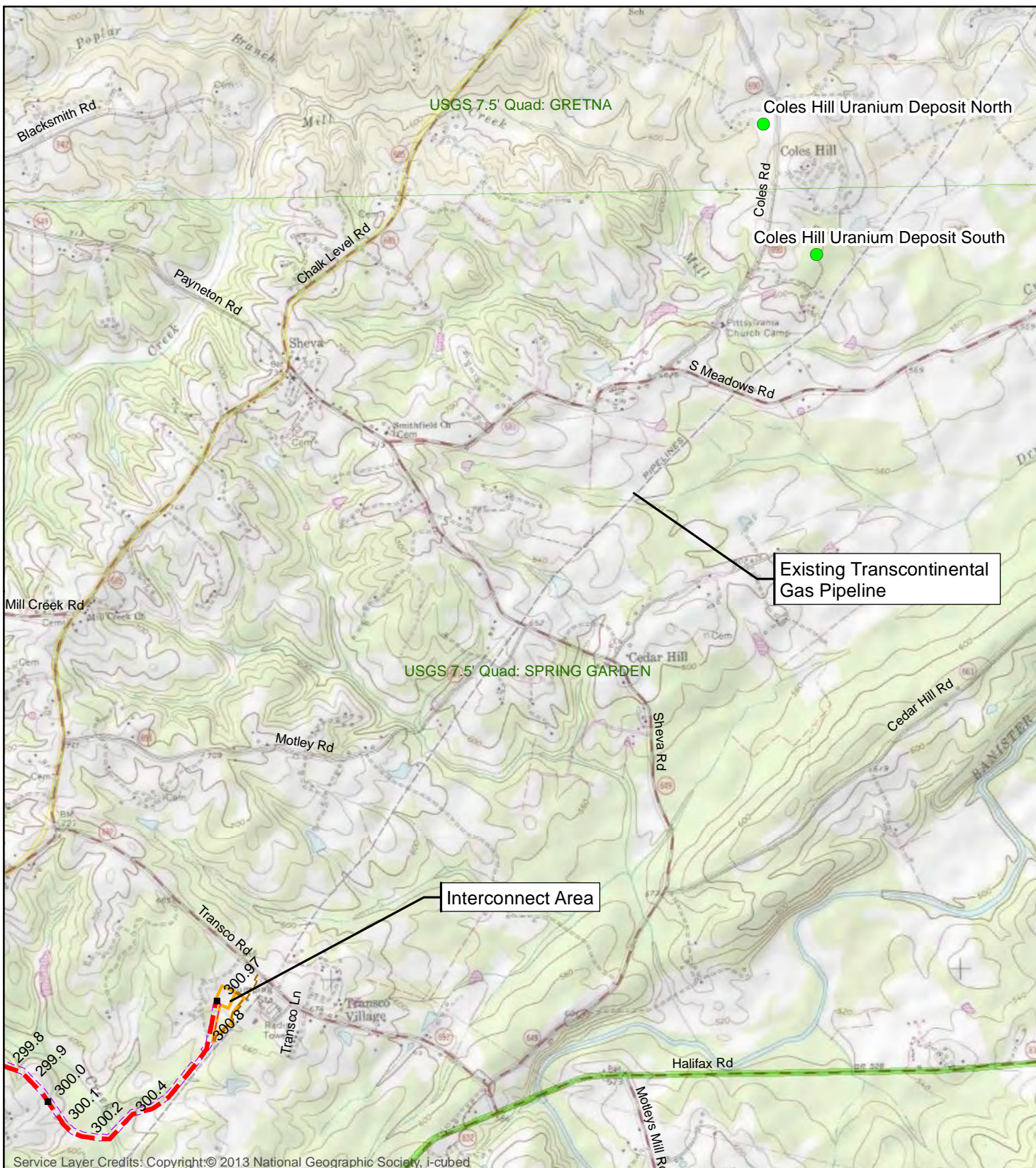


**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR6-13**



Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

**Mountain Valley Pipeline**      NAD 1983 UTM 17N      1:31,680      0 0.5 1 Miles

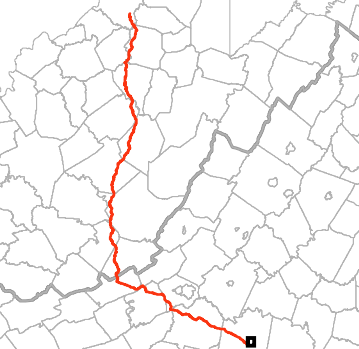
**Figure 8.2:  
MVP Alignment and  
Coles Hill Uranium Deposit**

12-29-15  
**Draper Aden Associates**  
Engineering • Surveying • Environmental Services

**Legend**

- Coles Hill Uranium Deposits
- MVP Ferc 4\_0\_0 Frozen Milepost
- MVP Ferc 4\_0\_0 Frozen Alignment
- - - MVP Access Road Workspace
- ▭ MVP Ferc 4\_0\_0 TWS
- ▭ MVP Ancillary Sites
- ▭ MVP Ferc 4\_0\_0 ATWS
- ▭ gridutm1783

*All Locations Approximate*



Uranium Mining in Virginia: Scientific, Technical, Environmental, Human Health and Safety, and Regulatory Aspects of Uranium Mining and Processing in Virginia (2012)  
http://www.nap.edu/catalog.php?record\_id=13266

Coles Hill Location Source: Technical Report on the Coles Hill Uranium Property, Pittsylvania County, Virginia, USA. Behre Dolbear & Company, LTD. Et.al. Rev 29 April 2009

Document Path: P:\81470061\418826\GIS\Shape\_Network\Uranium\Uranium\_Fig 8-2 Coles Hill Site Loc.mxd



**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR6-14**

**Table 6.4-2  
Flood Zones that Require Weights**

<b>Milepost</b>	<b>County</b>	<b>Floodplain Waterbody</b>	<b>Length Crossed (Feet)</b>	<b>Selected Class Pipe</b>	<b>Minimum Depth of Cover</b>
0.7	Wetzel	North Fork Fishing Creek	466	1	4
5	Wetzel	Price Run	642	1	4
15.5	Harrison	Little Tenmile Creek	310	3	4
18.8	Harrison	Rockcamp Run	217	2,1	4
23.1	Harrison	Indian Run	173	1	4
26	Harrison	Salem Fork	434	1	4
34.9	Doddridge	Laurel Run	200	2,3	4
42.7	Lewis	Right Fork Freemans Creek	135	1	3
46	Lewis	Left Fork Freemans Creek	332	1	4
55.2	Lewis	Sand Fork	242	2,1	3
58.6	Lewis	Indian Fork	182	1	4
62.3	Lewis	Oil Creek	167	1	3
72.6	Braxton	Falls Run	273	1	3
75	Braxton	Little Kanawha River	805	2,1	4
81.7	Webster	Left Fork Holly River	243	2	4
82.4	Webster	Oldlick Creek	569	1	3
84.1	Webster	Right Fork Holly River	210	2,1	3
87.4	Webster	Elk River	441	2	3
93.1	Webster	Camp Creek	783	3,2,1	3,4
97.7	Webster	Amos Run	438	2,1	3
98.7	Webster	Lost Run	127	1	3
98.9	Webster	Laurel Creek	227	3	3
109.9	Webster	Strouds Creek	258	1	3
114	Nicholas	Big Beaver Creek	236	1	3
115.8	Nicholas	Big Beaver Creek	117	1	3
118.6	Nicholas	Gauley River	402	2	3
126.5	Nicholas	Hominy Creek	256	2	3
140.1	Greenbrier	Meadow Creek	97	2	3
143.7	Greenbrier	Meadow River	333	3	3
146.7	Greenbrier	Little Sewell Creek	252	1	3
154.5	Greenbrier	Buffalo Creek	320	2	4
155.4	Greenbrier	Morris Fork	277	2	4
169.8	Summers	Hungard Creek	163	2	4
170.4	Summers	Greenbrier River	1,841	3	3
171.8	Summers	Kelly Creek	172	1	3
181.9	Monroe	Indian Creek	112	2,1	4
186.7	Monroe	Hans Creek	258	2	3
191.1	Monroe	Dry Creek	330	2	4
199.4	Giles	Stony Creek	729	2,3	3
203.3	Giles	Little Stony Creek	313	2,3	3
209.9	Giles	Sinking Creek	166	2	3
211.6	Giles	Greenbrier Branch	87	2,3	3

218.1	Montgomery	Craig Creek	981	2	4
218.6	Montgomery	Craig Creek	220	2	3
223.9	Montgomery	Mill Creek	411	2	3
225.2	Montgomery	North Fork Roanoke River	567	2	4
225.5	Montgomery	North Fork Roanoke River	60	2	4
225.6	Montgomery	North Fork Roanoke River	116	2	4
225.7	Montgomery	North Fork Roanoke River	428	2	4
229.2	Montgomery	Bradshaw Creek	377	2	4
233.6	Montgomery	Roanoke River	1,446	2,3	3
260.8	Franklin	Little Creek	842	2	4
262.2	Franklin	Blackwater River	200	2	4
262.4	Franklin	Blackwater River	400	2	4
262.5	Franklin	Blackwater River	142	2	4
262.8	Franklin	Blackwater River	698	2,3	4
263.3	Franklin	Blackwater River	269	2,3	3
266.6	Franklin	Maggodee Creek	166	1	3
266.9	Franklin	Blackwater River	204	1	3
281.6	Pittsylvania	Jonnikin Creek	83	1	3
281.9	Pittsylvania	Jonnikin Creek	28	1	3
284.3	Pittsylvania	Rocky Creek	130	1	3
286.3	Pittsylvania	Pigg River	402	1	3
287.1	Pittsylvania	Harpen Creek	290	1	3
287.7	Pittsylvania	Harpen Creek	167	1	3
289.2	Pittsylvania	Harpen Creek	178	1	3
291.4	Pittsylvania	Cherrystone Creek	182	1	3
292.4	Pittsylvania	Cherrystone Creek	224	1	3
293.7	Pittsylvania	Pole Bridge Branch	292	1	3
298.6	Pittsylvania	Little Cherrystone Creek	177	1	4
299.1	Pittsylvania	Little Cherrystone Creek	1,466	2,1	4
300.2	Pittsylvania	Little Cherrystone Creek	131	1	3
300.3	Pittsylvania	Little Cherrystone Creek	359	1	3
Grand Total			<b>25,971</b>		

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

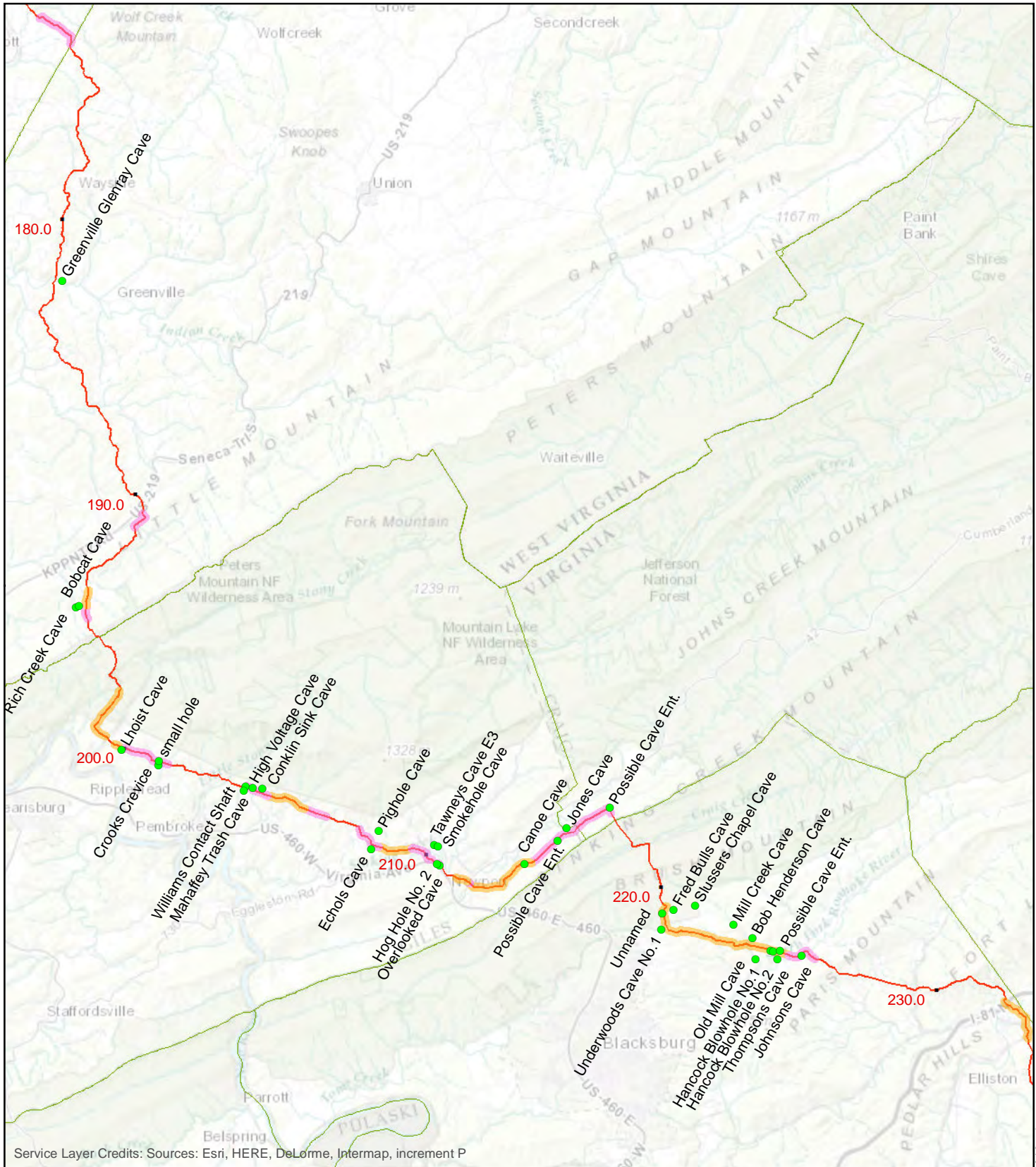
**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR6-19**

**Table 6.4-4 Revised**  
**Identified Caves within 0.25 mile ( 1,320 feet) of the MVP Alignment**

<b>County</b>	<b>Milepost</b>	<b>Direction / Distance (ft)</b>	<b>Cave Name</b>	<b>Extent / Depth</b>	<b>Notes</b>
Monroe	181.84	E 1030	Greenville Glenray Cave	(unknown)	
Monroe	194.0	W 1140	Bobcat Cave	(unknown)	
Monroe	194.45	W 1570	Rich Creek Cave	(900', 20')	
Giles	199.9	S 370	Lhoist Cave	(72', 8')	
Giles	201.13	crosses	small hole	(unknown)	
Giles	201.15	S 610	Crooks Crevice	(50', 50')	
Giles	203.86	S 740	Mahaffey Trash Cave	(unknown)	
Giles	203.9	S 140	Williams Contact Shaft	(75', 75')	
Giles	204.14	NE 140	High Voltage Cave	(unknown)	
Giles	204.42	N 540	Conklin Sink Cave	(unknown)	
Giles	208.3	S 730	Echols Cave	(535', 30')	
Giles	208.35-208.55	NE 1930	Pighole Cave	(6230' 428')	included in this table because is mentioned in report
Giles	209.0	NE 810	Tawneys Cave E3	(3980', 50')	
Giles	209.9-210.1	NE 2040	Smokehole Cave	(9354', 112')	included in this table because is mentioned in report
Giles	210.42	S 170	Hog Hole No. 2	(10', unknown)	
Giles	210.5	S 290 appr	Overlooked Cave	(20', unknown)	
Giles	213.7-213.82	S 160	Canoe Cave	(1400', 180')	
Giles	214.9	SE 200	Possible Cave Entrance	(unknown)	
Craig	215.3	N 740	Jones Cave	(208', 20')	
Craig	216.8	E 140	Possible Cave Entrance	(unknown)	
Montgomery	220.65	E 1220	Fred Bulls Cave	(215', 15')	
Montgomery	220.65	E 4070	Slussers Chapel Cave	(5280', unknown)	included in this table because is mentioned in report
Montgomery	220.9	SW 160 appr	Unnamed	(50', unknown)	
Montgomery	221.3	SW 960 appr	Underwoods Cave No.1	(30', 25')	
Montgomery	222.9-223.35	N 2690	Mill Creek Cave	(1323', 31')	included in this table because is mentioned in report
Montgomery	224.0	N 1120	Bob Henderson Cave	(46', 22')	
Montgomery	224.25	S 1950	Old Mill Cave	(1100', 20')	included in this table because is mentioned in report
Montgomery	224.61	S 170	Hancock Blowhole No.1	(50', unknown)	
Montgomery	224.68	S 180	Hancock Blowhole No.2	(unknown)	
Montgomery	224.85	S 1210	Thompsons Cave	(475', 25')	
Montgomery	224.86	N 180	Possible Cave Entrance	(unknown)	
Montgomery	225.5-225.65	SE 350	Johnsons Cave	(600', 10')	



<h2>Mountain Valley Pipeline</h2> <p>NAD 1983 UTM 17N 1:250,000</p> <p>0 3 6 Miles</p>	
<p><i>All Locations Approximate</i></p>	
<p><b>Figure 6.4-2:</b> <b>Karst Areas and Caves</b></p> <p>01-06-16</p> <p>Draper Aden Associates Engineering • Surveying • Environmental Services</p> <p>Caves: Draper Aden Associates</p>	<p><b>Legend</b></p> <ul style="list-style-type: none"> <li><span style="color: green;">●</span> Caves in Report</li> <li><span style="background-color: pink; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Limestone</li> <li><span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Dolomite</li> <li>▪ MVP Ferc 4_0_0 Frozen Milepost</li> <li><span style="color: red;">—</span> MVP Ferc 4_0_0 Frozen Alignment</li> </ul>

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR8-14**

County Planning Meeting Log			
COUNTY / TOWN	Meeting Location	Date	Attendees
Pittsylvania	Chatham	10/16/2014	Administrator Clarence Monday, Asst Adm Otis Hawkins, Co Atty Vaden Hunt
Pittsylvania	Chatham	11/3/2014	Board of Supervisors Presentation
Pittsylvania	Chatham	12/3/2014	Administrator Clarence Monday, Supervisor Jesse Barksdale, Supervisor Elton Blackstock, Assistant County Administrator for Economic Development & Planning Greg Sides, Assistant County Administrator for Operations Otis Hawker
Pittsylvania	Chatham	12/3/2014	Supervisor Jerry Hagerman
Pittsylvania	Richmond	1/13/2015	Supervisor Jessie Barksdale, Chairman Brenda Bowman
Pittsylvania	Richmond	2/18/2015	Supervisor/IDA member Jerry Hagerman, Supervisor Jesse Barksdale
Pittsylvania	Blairs	2/24/2015	Presentation to Chamber Board of Directors
Pittsylvania	Gretna	6/9/2015	Town of Gretna Economic Dev Director Vernon Moon
Pittsylvania	Chatham	9/2/2015	Presentation to Chamber Member Breakfast
Franklin	Rocky Mount	10/14/2014	Administrator Rick Huff, Asst Adm Chris Whitlow
Franklin	Rocky Mount	10/21/2014	Planning Director Neil Holthouser, Sr Planner Lisa Cooper
Franklin	Rocky Mount	10/21/2014	Presentation to Board of Supervisors
Franklin	Rocky Mount	10/27/2015	Brent Johnston-County Admin, Chris Whitlow-Assist. County Admin., Michael Burnette-Economic Development Director
Franklin	Rocky Mount	12/3/2014	Aministrator Rick Huff, Public Works Director Don Smith, Asst Adm Chris Whitlow
Franklin	Rocky Mount	4/20/2015	Adm Rick Huff
Franklin	Rocky Mount	9/2/2015	Administrator Brent Robertson, Planning Director Steve Sandy, Public Works Director Don Smith, Dev Review Coordinator
Franklin	Rocky Mount	10/1/2015	Administrator Brent Robertson, Asst Chris Whitlow, RGC John D'Orazio
Town of Boones Mill	Boones Mill	9/30/2015	Town Manager Matt Lawless
Town of Boones Mill	Boones Mill	10/13/2015	Town Manager Matt Lawless, Utilities Director Jay Dillon, Mayor Ben Flora, Vice-Mayor Dale Fisher
Town of Boones Mill	Boones Mill	12/2/2015	Matt Lawless-Town Manager, Ben Flora-Mayor
Town of Rocky Mount	Rocky Mount	12/2/2015	Town Manger James Ervin, Planner Josh Gibson, Facilities Dir Bob Dietrich,
Roanoke	Roanoke	10/14/2014	Presentation to Board of Supervisors
Roanoke	Roanoke	11/12/2014	Administrator Dan O'Donnell, Asst County Administrator Richard Caywood
Roanoke	Roanoke	12/8/2014	Supervisor Jason Peters
Roanoke	Roanoke	12/10/2014	Supervisor Al Bedrosian
Roanoke	Roanoke	12/16/2014	Economic Director Jill Loope, Administrator Dan O'Donnell, Asst Richard Caywood
Roanoke	Roanoke	4/20/2015	Pipeline Advisory Committee
Roanoke	Roanoke	10/29/2015	Asst Adm Richard Caywood, RGC John D'Orazio



COUNTY / TOWN	Meeting Location	Date	Attendees
Roanoke	Roanoke	11/23/2015	Asst Adm Richard Caywood, Cty Atty Ruth Ellen Kuhnel, P/L Advisory Group
Town of Roanoke	Roanoke	11/11/2015	City Manager Chris Morrill, Asst Mng Brian Townsend, Economic Director Wayne Bowers
Montgomery	Blacksburg	11/5/2014	Board of Supervisors Presentation
Montgomery	Christiansburg	12/17/2014	Economic Director Brian Hamilton, Administrator Craig Meadows, Supervisor Bill Brown, Supervisor Gary Creed
Montgomery	District	1/19/2015	Supervisor Gary Creed
Montgomery	Christiansburg	2/23/2015	Board of Supervisors Presentation
Montgomery	Christiansburg	5/26/2015	Board of Supervisors Presentation
Montgomery	Christiansburg	11/23/2015	Administrator Craig Meadows, Planning Director Emily Gibson, Cty Atty Marty McMahon, RGC John D'Orazio
Craig	New Castle	2/5/2015	Co Adm Clay Goodman, Commissioner Elizabeth Huffman
Craig	New Castle	2/9/2015	Supervisors, Jesse Spence, Carl Bailey, Chairman Martha Murphy
Craig	New Castle	3/19/2015	Board of Supervisors Presentation
Craig	New Castle	4/7/2015	EMS Jim Cady. Adm Clay Goodman, Supervisor Keith Dunbar
Giles	Pearisburg	11/20/2014	Board of Supervisors Presentation
Giles	Pearisburg	12/3/2014	Administrator/ IDA Director Chris McKlarney, Planning Director John Ross
New River Economic Development Allainance	Radford	11/4/2014	Exec Director Eric Bopp, Board member/New River Airport Mng Keith Holt
State of Virginia	Richmond	11/3/2014	Deputy Secretary Commerce Trade Hayes Framme, Senior Advisor Randy Marcus
State of Virginia	Richmond	11/24/2014	Secretary Commerce Trade Maurice Jones
State of Virginia	Richmond	1/28/2015	Secretary Commerce Trade Maurice Jones
State of Virginia	Richmond	8/12/2015	Meeting w/ Virginia Economic Development Partnership (VEDP) Officials
Greenbrier		10/14/2014	Meeting w/ County Commission members
Greenbrier	Phone call	2/15/2015	Greenbrier County Economic Development Authority Executive Director
Greenbrier	Phone call	6/11/2015	Greenbrier County Economic Development Authority Executive Director
Braxton		12/11/2014	Braxton County Economic Development Authority Board of Directors
Braxton		8/21/2015	Braxton County Commission members
Harrison		10/23/2014	Harrison County Administrator
Harrison	Phone call	2/11/2015	Harrison County Chamber of Commerce/Economic Development Authority Executive Director

COUNTY / TOWN	Meeting Location	Date	Attendees
Nicholas	Phone call	6/1/2015	Nicholas County Commission President
Nicholas		7/7/2015	Received signed resolution of support from Nicholas County Commission
Lewis	Phone call	9/22/2014	Lewis County Commissioners and County Administrator
Lewis	Phone call	1/26/2015	Lewis County Economic Development Authority Executive Director
Lewis	Phone call	10/28/2015	Discussion with Lewis County Economic Development Authority Executive Director and received signed resolution of support
Monroe	Phone call	10/1/2014	Monroe County Commissioners and County Administrator
Monroe	Union	11/12/2014	Public Presentation to County Commission Meeting
Monroe	Peterstown	1/13/2015	Meeting w/ Red Sulphur Public Service District Officials
Webster		10/17/2014	Meeting w/ 2 Webster County Commissioners and Director of Webster County Economic Development Authority
Doddridge	Phone call	9/23/2014	Doddridge County Economic Development Authority Director
Doddridge	Phone call	9/14/2015	Discussion with Doddridge County Economic Development Authority Executive Director and received signed resolution of support
Wetzel		10/30/2014	Meeting w/ 2 Wetzel County Commissioners
Fayette, Nicholas, Greenbrier, Summers		10/14/2014	New River Gorge Economic Development Authority
Mercer		4/28/2015	Director of Greater Bluefield Chamber of Commerce (bordering Monroe County)
State of West Virginia		10/3/2014	Secretary of Commerce Keith Burdette
State of West Virginia	Charleston	7/13/2015	Secretary of Commerce Keith Burdette, Kris Hopkins, Josh Jarrell
State of West Virginia		9/2/2015	Received signed letter of support from WV Department of Commerce

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR8-22a**



October 24, 2014

Mr. George Santucci  
National Committee for the New River  
P.O. Box 1480  
West Jefferson, North Carolina 28694

**Subject: Mountain Valley Pipeline Project**

Dear Mr. Santucci,

Mountain Valley Pipeline, LLC, a joint venture of EQT Corporation and a subsidiary of NextEra Energy, Inc., is hereby providing background information on the proposed Mountain Valley Pipeline (MVP) Project (Project). MVP plans to construct an approximately 300-mile, 42-inch diameter natural gas pipeline to allow producers and end-users a direct route to transport new gas supplies to meet the growing need for natural gas in the southeastern United States.

The pipeline will extend from the existing Equitrans transmission system in Wetzel County, West Virginia to Transcontinental Gas Pipeline Company's (Transco) Zone 5 compressor station 165 in Pittsylvania County, Virginia. In addition to the pipeline, the Project will require approximately 225,000 horsepower of compression at approximately four compressor stations along the route along with measurement, regulation, and other ancillary facilities required for the safe operation of the pipeline. A Project map has been included as an attachment to this letter.

The Federal Energy Regulatory Commission (FERC) will serve as the lead agency for the Project. MVP plans to request to use the FERC's pre-filing process in late October 2014 and anticipates filing a formal application with the FERC in the third quarter of 2015. The FERC will then prepare an Environmental Assessment or an Environmental Impact Statement to satisfy the National Environmental Policy Act (NEPA) process for the Project.

In order to assist MVP in preparing the FERC application and identifying possible issues to be addressed during the NEPA process, the purpose of this letter is initiate dialogue with the National Committee for the New River, and to request information and identify any potential concerns the National Committee for the New River may have regarding the Project.

MVP looks forward to working with you as it moves forward with development of this Project. We appreciate your assistance and thank in you advance for your willingness to work with MVP.

Mr. George Santucci

October 24, 2014

Page 2 of 2

If you have questions or would like additional information about the Project please contact me at 304-848-0061 ([MLandfried@eqt.com](mailto:MLandfried@eqt.com)), or Sean Sparks at 617-443-7565 ([sean.sparks@tetrattech.com](mailto:sean.sparks@tetrattech.com)).

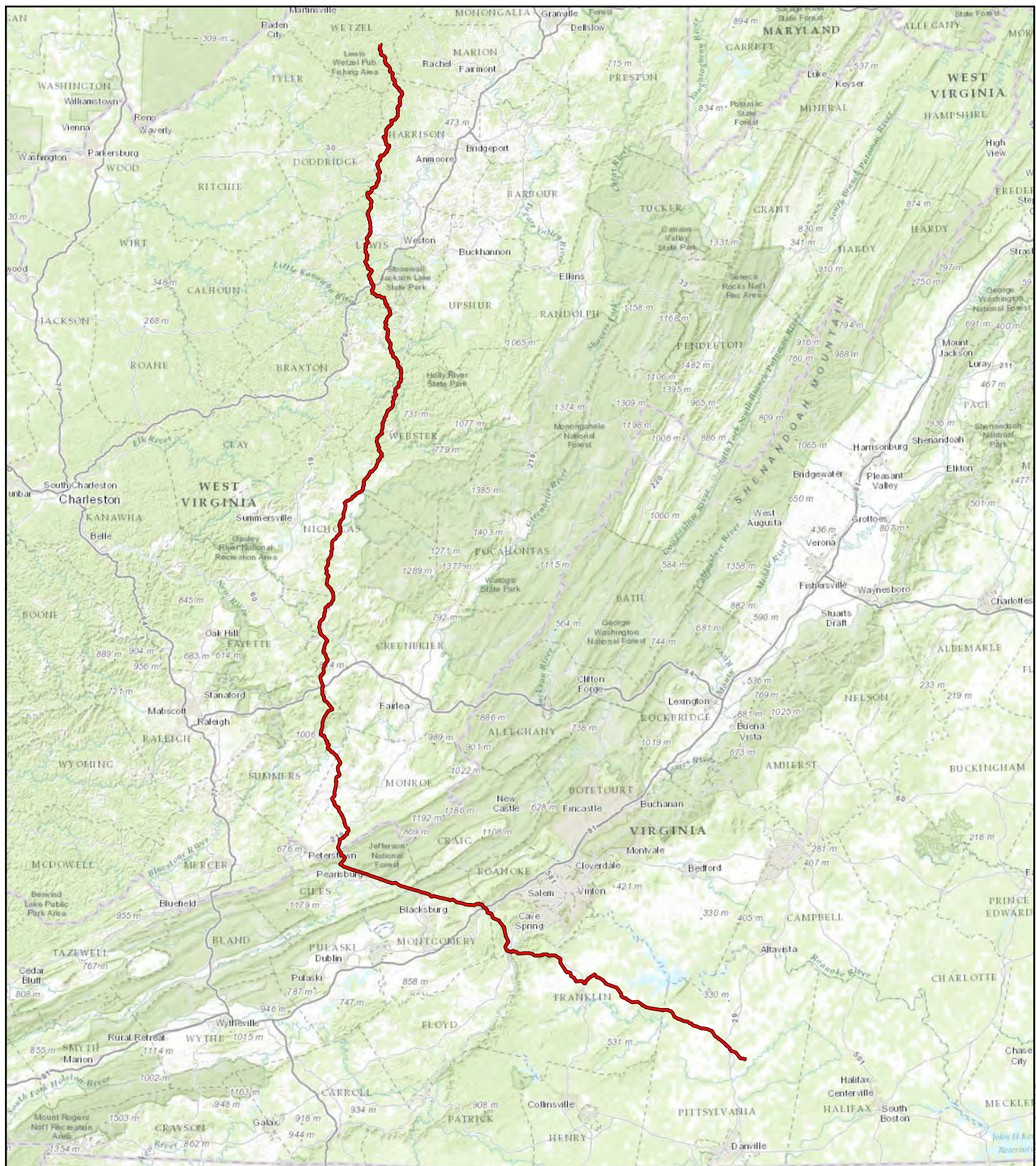
Sincerely,

A handwritten signature in blue ink that reads "Megan Landfried Neylon". The signature is written in a cursive, flowing style.

Megan Landfried Neylon

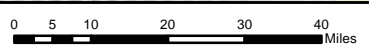
Senior Environmental Coordinator

cc: John Centofanti, EQT Corporation  
Blayne Gunderman, NextEra Energy Resources, LLC  
Sean Sparks, Tetra Tech



### Mountain Valley Pipeline

NAD 1983 UTM 17N 1:1,585,000

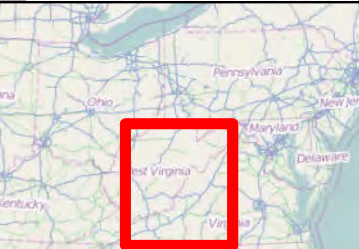


**Figure 1:**  
**Mountain Valley Pipeline**

**October 2014**

**Legend**

Pipeline Route



Prepared by:

Service Layer Credits: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community  
 © OpenStreetMap (and) contributors, CC-BY-SA

Document Path: P:\ECG\Requirements\MPV\Project\GIS\Spatial\MapDocs\01\001\_LFigure\_1\_MVPRoute\_Rev3/32\_1030.mxd

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR8-22b**

**ZIEGLER & ZIEGLER, L.C.**

**ATTORNEYS AT LAW**

110 JAMES STREET

HINTON, WV 25951

Email: [zaz@suddenlinkmail.com](mailto:zaz@suddenlinkmail.com)

[www.zieglerandziegler.com](http://www.zieglerandziegler.com)

**DAVID L. ZIEGLER**

**ANNA R. ZIEGLER**

**Telephone (304) 466-1224**

**Telephone (304) 772-3085**

**Facsimile (304) 466-4294**

June 16, 2015

Kevin Wagner  
Regional Land Director  
Mountain Valley Pipeline  
550 N. Eisenhower Drive  
Beckley, WV 25801

Re: Sizemore property, Giles County, Virginia  
Docket No. PF 15-3-000  
Tax Map 29-25 Giles County, Virginia  
MVP Tract No.: BV-GI-8

To Whom It May Concern:

I represent the New River Conservancy, an accredited, 501(c)3 land trust (NRC). It has come to NRC's attention that the proposed Mountain Valley Pipeline (MVP) will transect or directly impact property in Giles County, Virginia which is subject to a conservation easement held by NRC. The property is owned by Sizemore, Inc. a Virginia Corporation<sup>1</sup>, subject to the conservation easement held by NRC.

The conservation easement protects important natural and environmental resources, including, but not limited to water quality, which have been identified by the landowner, NRC, the Commonwealth of Virginia and the citizens of Giles County, Virginia as worthy of perpetual protection. The deed of conservation easement expressly prohibits the type of activity contemplated by MVP during the construction and the permanent maintenance of the easement. The proposed 42 inch pipeline and the easement would be inconsistent with the intent and purpose of the conservation easement.

Representatives of MVP have publicly expressed a willingness to re-route the pipeline to avoid eased properties. This parcel should not be considered for the proposed route.

---

<sup>1</sup> The property owner has received correspondence in the name of Eagles Nest Ministries, Inc. though based on the maps provided by MVP and the geography of the land, Rick Sizemore, shareholder of both Sizemore, Inc. and Eagles Nest Ministries, Inc. is confident that the proposed pipeline corridor will transect or affect the Sizemore, Inc. property.



Given that NRC owns an interest in this property, kindly copy me as attorney for NRC on all future correspondence regarding this parcel.

Thank you for your time and attention to this matter.

Sincerely,



Anna R. Ziegler

CC: Client

CC: Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street NE, Room 1A  
Washington, DC 20426

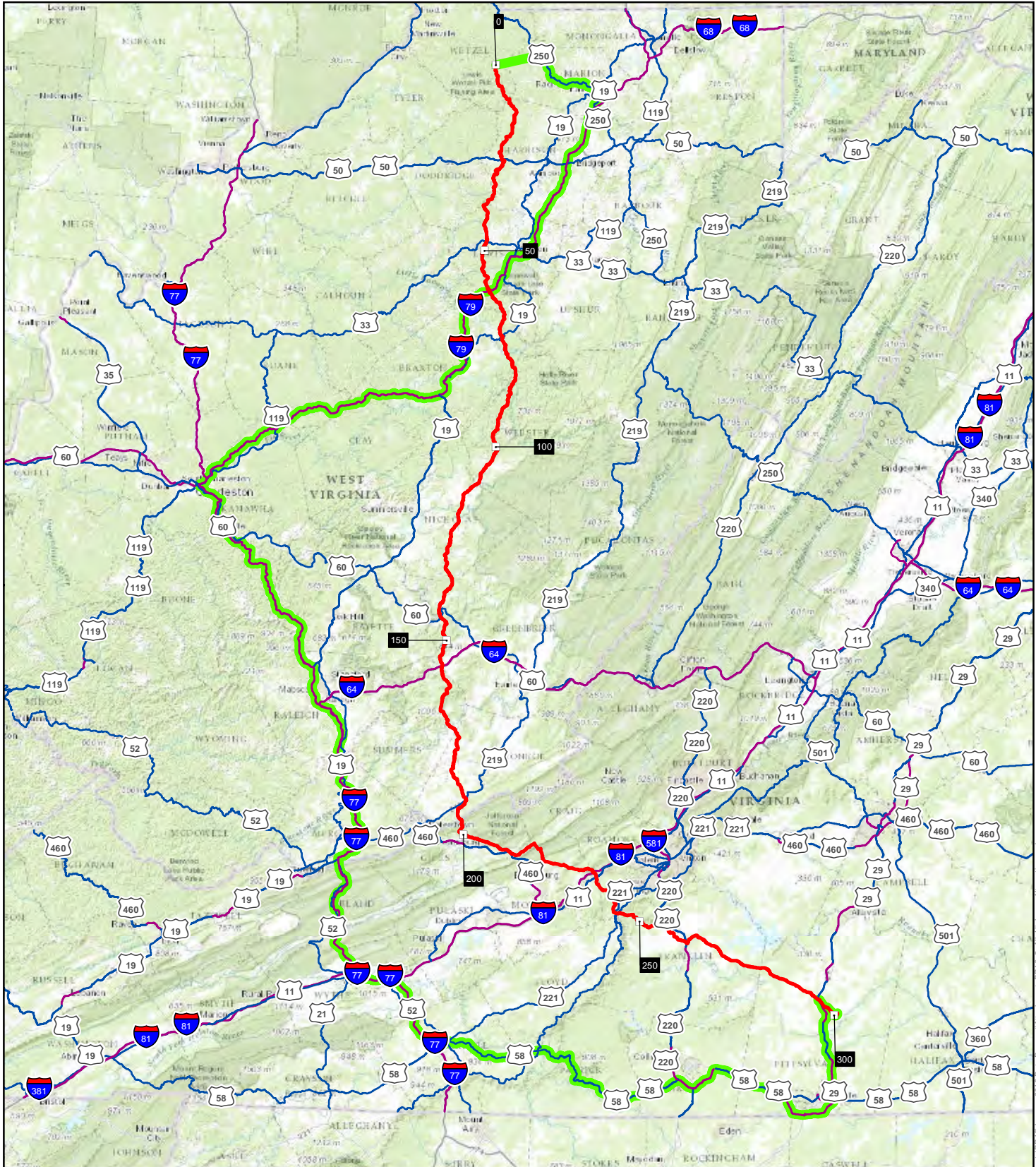
CC: Rick Sizemore, Sizemore, Inc.

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

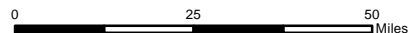
**Attachment RR10-5**



**Mountain Valley Pipeline Project**



NAD 1983 UTM 17N 1:1,701,343

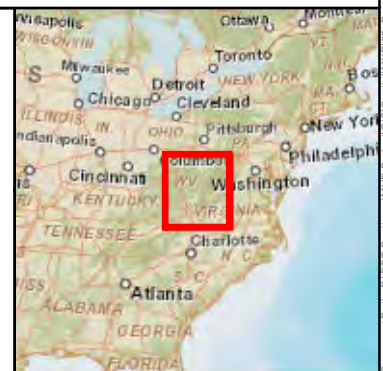


**Attachment RR10-5  
All Highway Alternative**

January 2016

**Legend**

- Milepost
- All Highway Alternative
- Proposed Route
- Primary Limited Access or Interstate
- Primary US and State Highway



Data Sources: ESRI Streaming Data, 2014, Ventyx 2014.

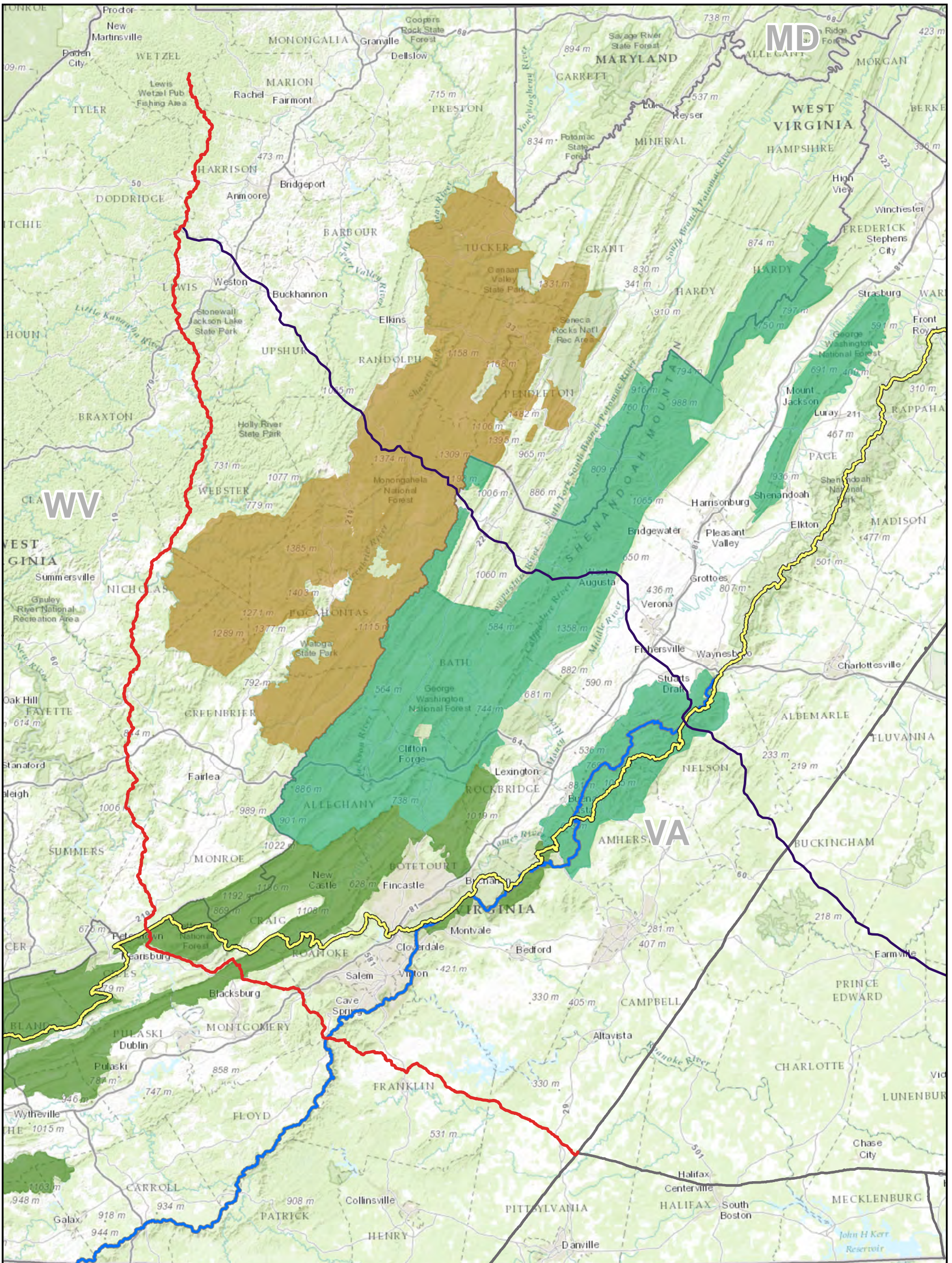
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**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

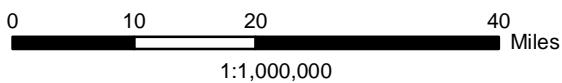
**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR10-6a**



**ATTACHMENT 10-6A  
LOCATION OF THE MOUNTAIN VALLEY PIPELINE  
IN RELATION TO THE ATLANTIC COAST PIPELINE**



**LEGEND**

- Mountain Valley Pipeline
- Proposed ACP Mainline
- Existing Transco Pipeline
- Appalachian Trail
- Blue Ridge Parkway
- George Washington National Forest
- Jefferson National Forest
- Monongahela National Forest



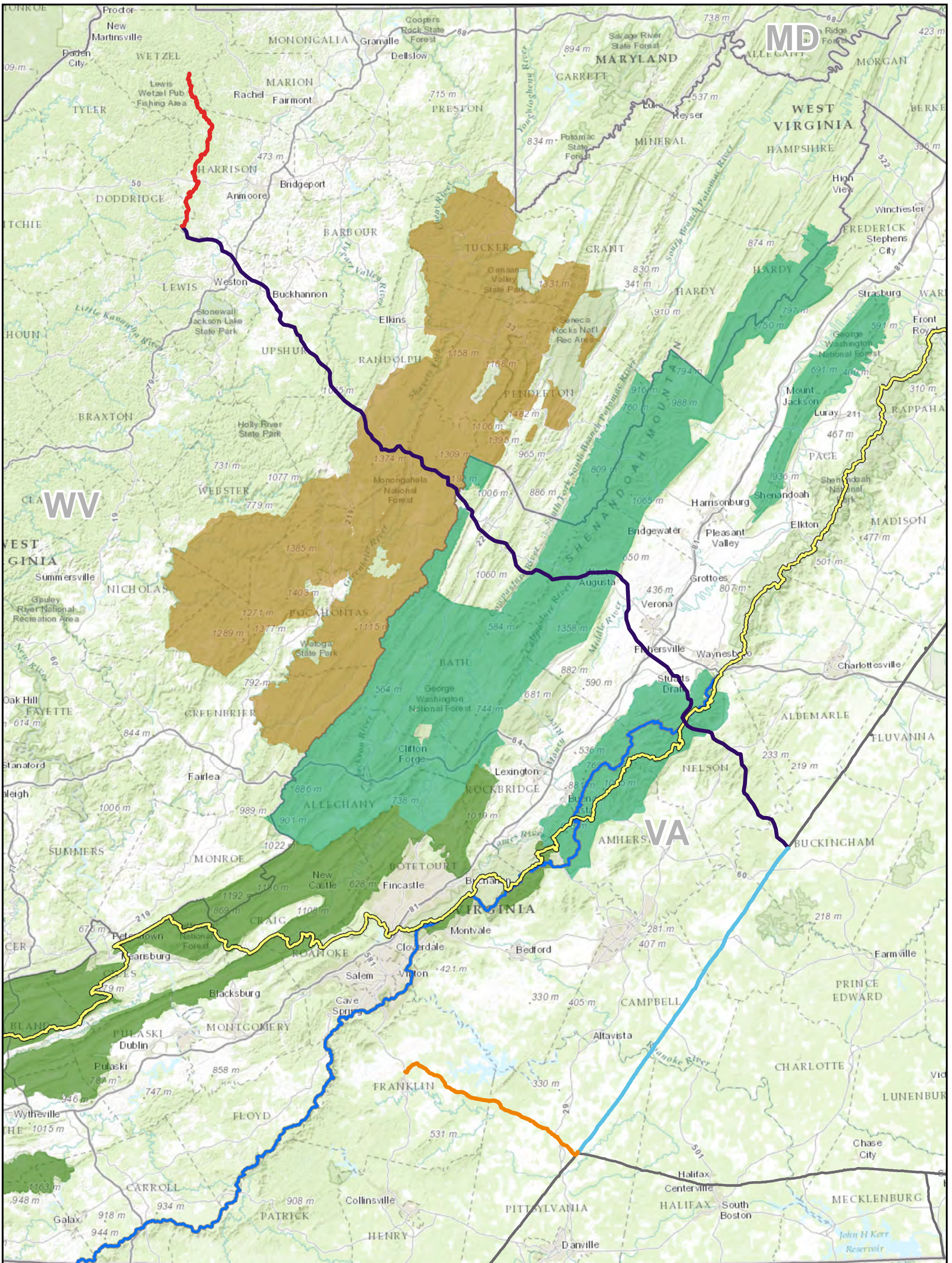
DATE: JANUARY 06, 2016  
 FILE: MVP ATTACHMENT 10-6A 20160106.MXD  
 DATA SOURCES: ESRI STREAMING DATA, NATIONAL PARK SERVICE

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

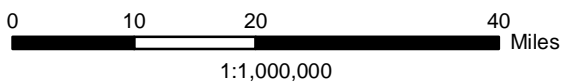
**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR10-6b**



**ATTACHMENT 10-6B  
MOUNTAIN VALLEY PIPELINE AND ATLANTIC  
COAST PIPELINE SINGLE PIPELINE ANALYSIS**



DATE: JANUARY 06, 2016  
FILE: MVP ATTACHMENT 10-6B 20160106.MXD  
DATA SOURCES: ESRI STREAMING DATA, NATIONAL PARK SERVICE

**LEGEND**

- Mountain Valley Pipeline "Retained"
- ACP "One" Pipeline Segment
- Transco Twin Segment
- Roanoke Gas Lateral
- Existing Transco Pipeline
- Appalachian Trail
- Blue Ridge Parkway
- George Washington National Forest
- Jefferson National Forest
- Monongahela National Forest



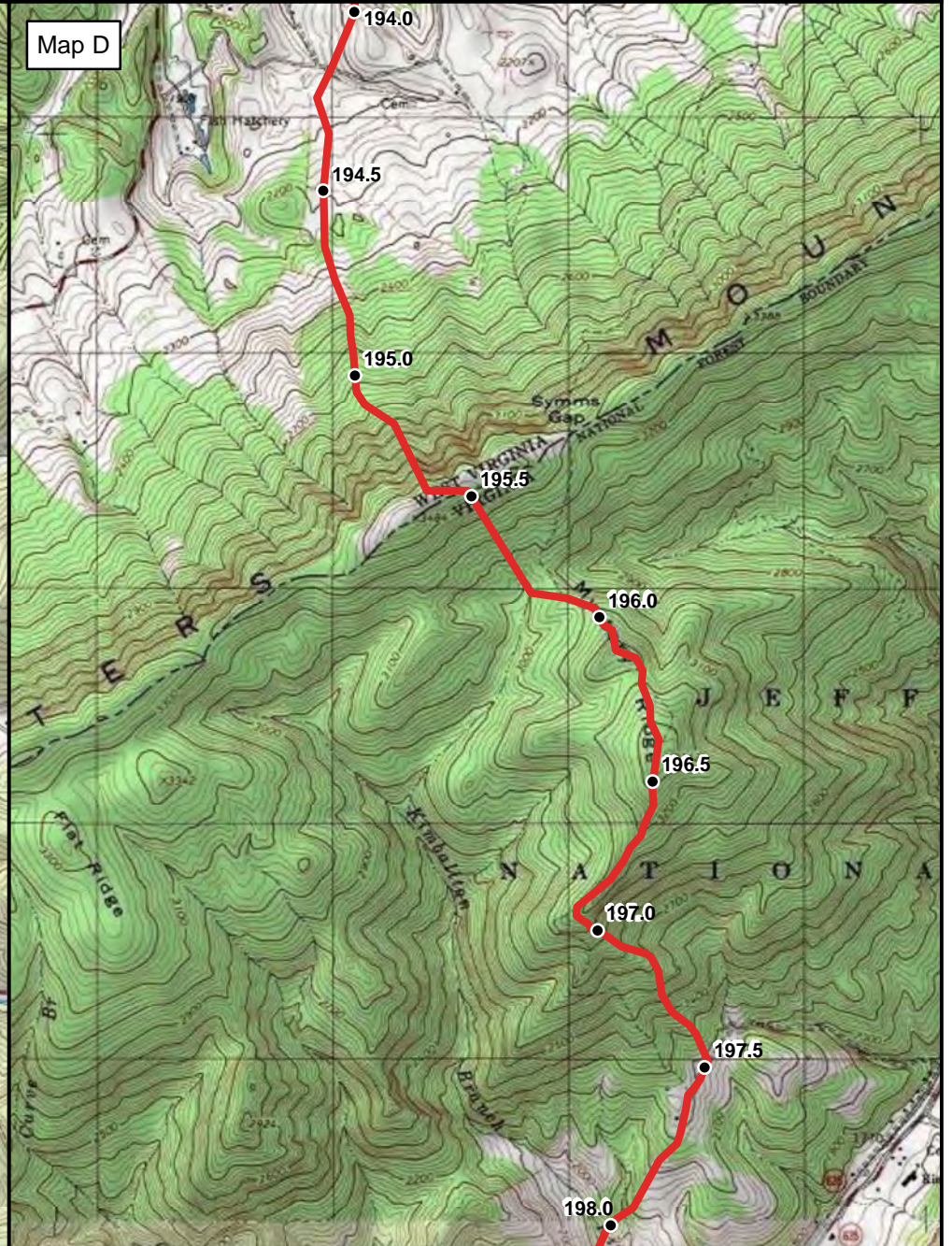
**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

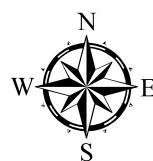
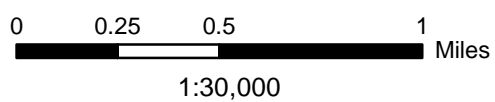
**ATTACHMENTS**

**Attachment RR10-7**





**ATTACHMENT 10-7: EXAMPLES OF PROBLEMATIC TERRAIN ALONG THE MOUNTAIN VALLEY PIPELINE ROUTE**



**LEGEND**

- Mountain Valley Milepost
- Mountain Valley Pipeline

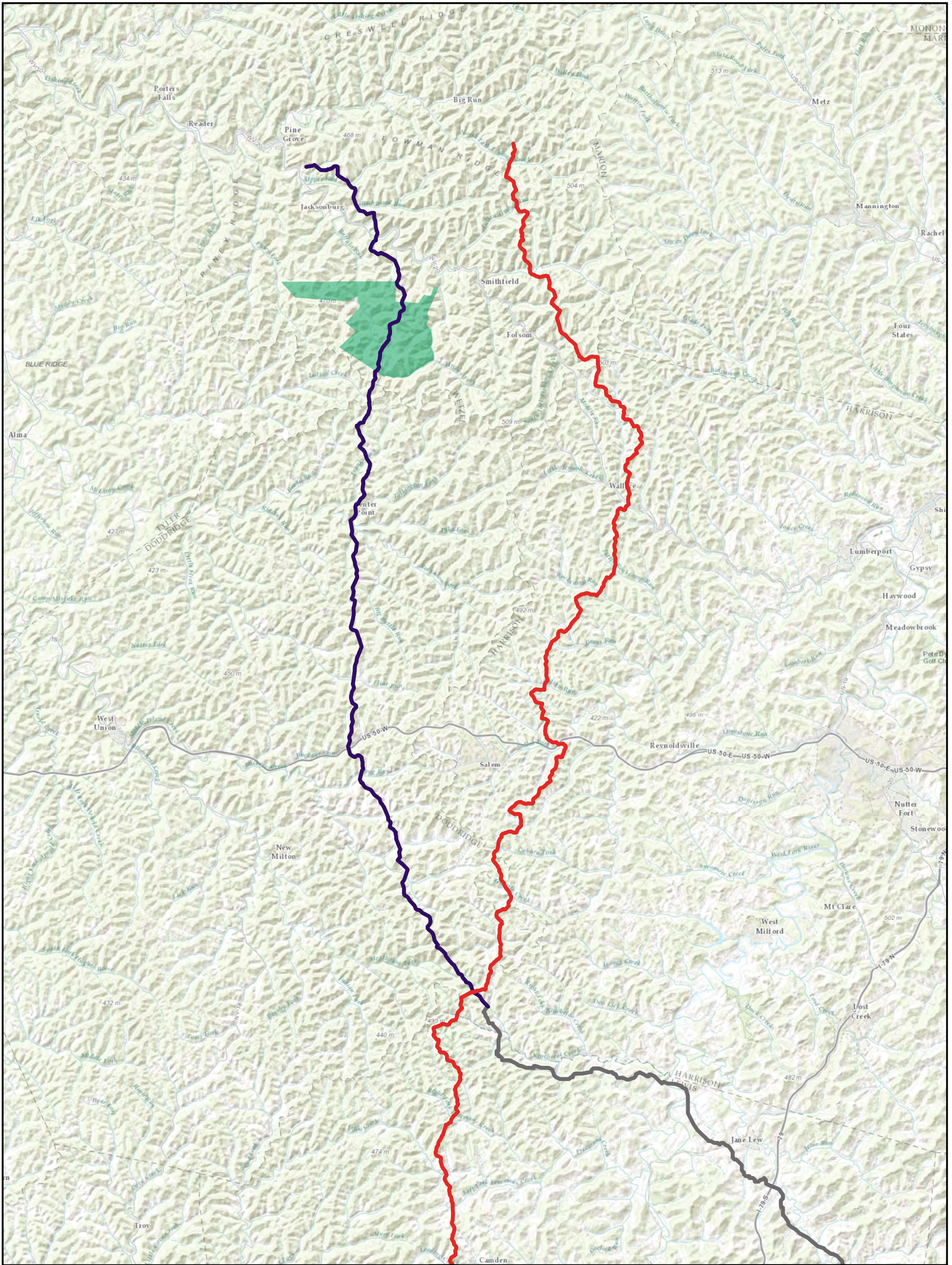
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 DATA SOURCES: ESRI STREAMING DATA

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

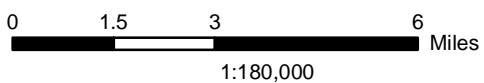
**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR10-10a**



**ATTACHMENT 10-10A  
LOCATION OF THE MOUNTAIN VALLEY PIPELINE IN  
RELATION TO THE DOMINION SUPPLY HEADER PIPELINE**



DATE: JANUARY 08, 2016

FILE: MVP ATTACHMENT 10-10A 20160108.MXD

DATA SOURCES: ESRI STREAMING DATA, NATIONAL PARK SERVICE



**LEGEND**

- Mountain Valley Pipeline
- Proposed Dominion SHP
- Proposed ACP Mainline
- Lewis Wetzel WMA

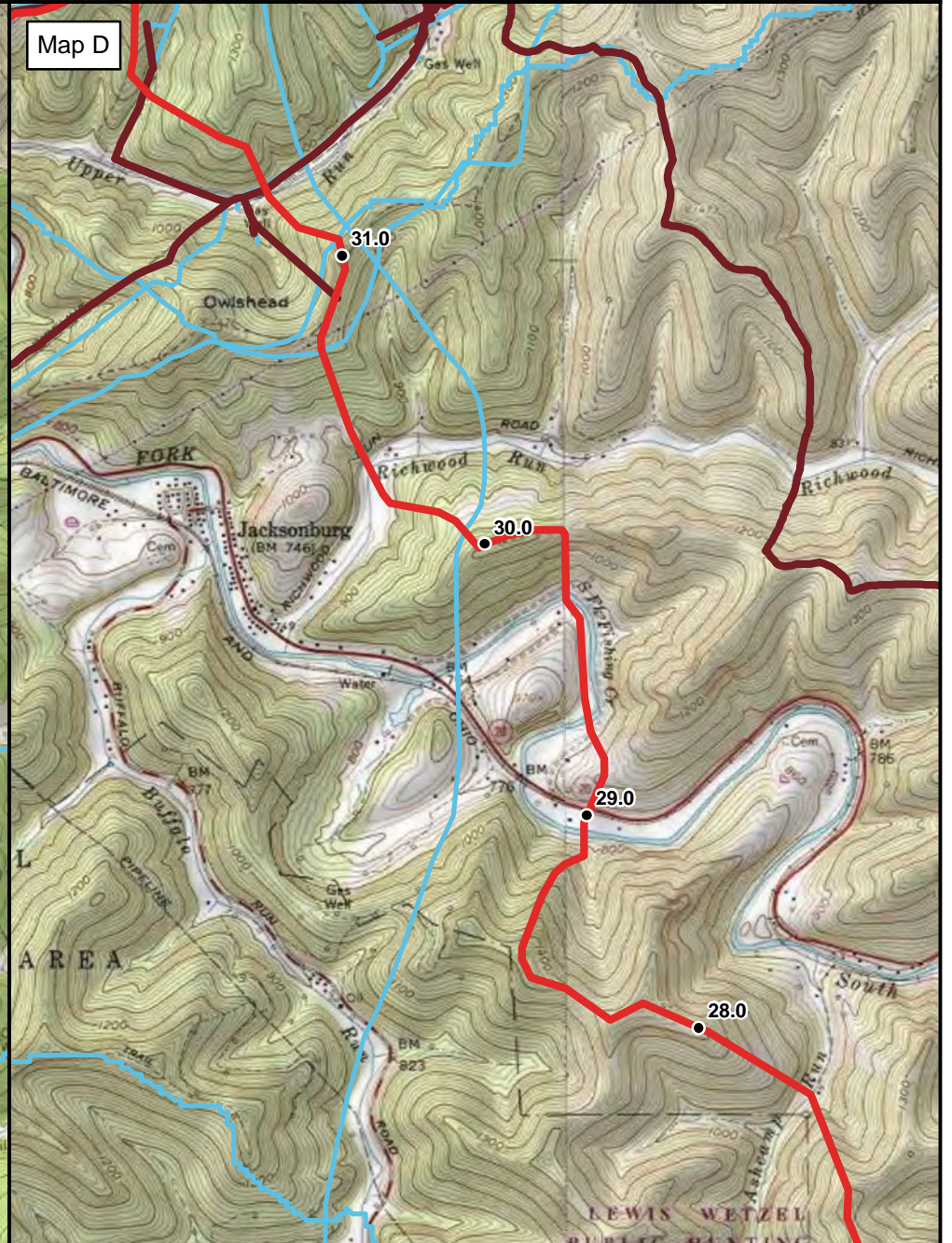
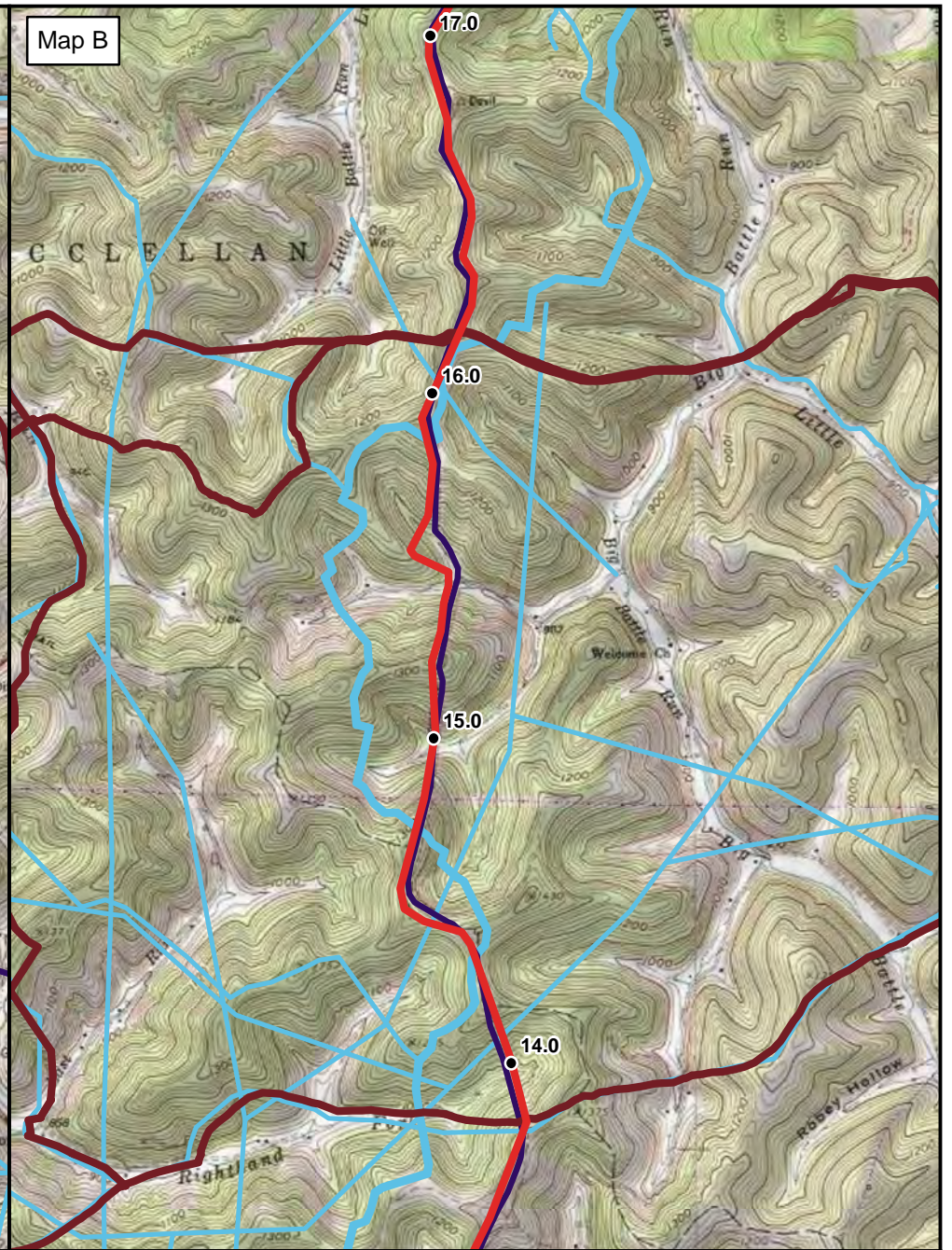


**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

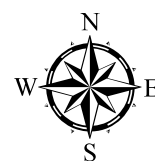
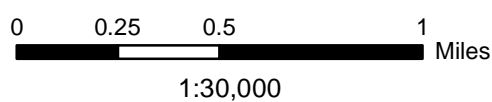
**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR10-10b**



**ATTACHMENT 10-10B: EXAMPLES OF PROBLEMATIC TERRAIN ALONG THE DOMINION SUPPLY HEADER PROJECT ROUTE**



**LEGEND**

- ◆ Mountain Valley Milepost
- Dominion SHP Milepost
- Mountain Valley Pipeline
- Proposed Dominion SHP
- Proposed ACP Mainline
- EQT Midstream
- Dominion Transmission
- Other Operated Pipeline

DATE: JANUARY 08, 2016  
 FILE: MVP ATTACHMENT 10-10B 20160108.MXD  
 DATA SOURCES: ESRI STREAMING DATA

**Mountain Valley Pipeline, LLC  
Mountain Valley Pipeline Project  
Docket No. CP16-10-000**

**Responses to FERC Environmental Information Request  
Dated December 24, 2015**

**ATTACHMENTS**

**Attachment RR11-3**

