

APPENDIX I
Timber Removal Plan for the Jefferson National Forest

Appendix I

Timber Removal Plan for the Jefferson National Forest

Mountain Valley Pipeline Project

Prepared by:



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ACRONYMS AND ABBREVIATIONS

BLM	U.S. Department of the Interior, Bureau of Land Management
Certificate	Certificate of Public Convenience and Necessity
FERC	Federal Energy Regulatory Commission
FS	U.S. Forest Service of the U.S. Department of Agriculture
JNF	Jefferson National Forest ¹
Mountain Valley	Mountain Valley Pipeline, LLC
MP	milepost
MVP	Mountain Valley Pipeline, LLC
Plan	FERC Upland Erosion Control Revegetation and Maintenance Plan
Procedures	FERC Wetland and Waterbody Construction and Mitigation Procedures
POD	Plan of Development
Project	Mountain Valley Pipeline Project
ROW	right-of-way
Transco	Transcontinental Gas Pipe Line Company, LLC
USACE	U.S. Army Corps of Engineers
Weston and Gauley Turnpike	Weston and Gauley Bridge Turnpike Trail

¹ Jefferson National Forest refers to the southern portion of the current George Washington & Jefferson National Forests throughout this document. Originally two separate national forests, the JNF and the George Washington National Forest were administratively combined in 1995 and are administered as a single national forest unit.

Mountain Valley Pipeline Project Timber Removal Plan

1.0 INTRODUCTION

Mountain Valley Pipeline, LLC (MVP or Mountain Valley), a joint venture between EQM Midstream Partners, LP; NextEra Capital Holdings, Inc.; Con Edison Gas Midstream LLC; WGL Midstream; and RGC Midstream, LLC (collectively referred to as MVP), was issued a Certificate of Public Convenience and Necessity (Certificate) from the Federal Energy Regulatory Commission (FERC) on October 13, 2017, pursuant to Section 7(c) of the Natural Gas Act authorizing it to construct and operate the proposed Mountain Valley Pipeline Project (Project) located in 17 counties in West Virginia and Virginia. The Project is an approximately 303-mile, 42-inch-diameter natural gas pipeline to provide timely, cost-effective access to the growing demand for natural gas for use by local distribution companies, industrial users, and power generation in the Mid-Atlantic and southeastern markets, as well as potential markets in the Appalachian region.

The pipeline extends from the existing Equitrans, L.P. transmission system and other natural gas facilities in Wetzel County, West Virginia to Transcontinental Gas Pipe Line Company, LLC's (Transco) Zone 5 compressor station 165 in Pittsylvania County, Virginia. In addition to the pipeline, the Project includes approximately 171,600 horsepower of compression at three compressor stations along the route, as well as measurement, regulation, and other ancillary facilities required for the safe and reliable operation of the pipeline. The pipeline is designed to transport up to 2.0 million dekatherms per day of natural gas.

A 3.5-mile long segment of the Project crosses portions of the Jefferson National Forest (JNF) in Monroe County in southern West Virginia and in Giles, Craig, and Montgomery counties in southwestern Virginia. The JNF is managed by the U.S. Forest Service (FS) of the U.S. Department of Agriculture. Another 60-foot segment of the Project crosses the Weston and Gauley Bridge Turnpike Trail (Weston and Gauley Turnpike) in Braxton County, West Virginia, which is administered by the U.S. Army Corps of Engineers (USACE). Approval to cross land managed by two or more federal agencies is the responsibility of the U.S. Department of the Interior, Bureau of Land Management (BLM) through issuance of a Right-of-Way Grant. Project-wide construction environmental compliance is the responsibility of the FERC. The FS and USACE will also ensure compliance across lands managed or administered by those agencies. Because the majority of federal lands crossed are managed by the FS, this plan focuses on the JNF, noting any additional or different requirements that are specific to the crossing of the Weston and Gauley Turnpike.

Construction of the Project segment that crosses the Weston and Gauley Turnpike was completed in 2018. Construction of the Project segments across the JNF began in 2018 but were not completed and progress is on hold due to a July 27, 2018 order by the U.S. Court of Appeals for the Fourth Circuit vacating and remanding the Right-of-Way Grant and a subsequent Stop Work Order issued by FERC.

The FS will be responsible for enforcement of the terms and conditions of the BLM's right-of-way Grant on National Forest System lands during the term of the Right-of-Way Grant for the Mountain Valley Pipeline project. Compliance will be monitored on the JNF portion of this project by the FS Project Manager and the Authorized Officer's designated compliance monitors. FS will have stop work authority per terms outlined in the BLM Right-of-Way Grant. FS will also have stop work authority if unsafe work conditions are encountered during construction.

The Project has potential to impact sensitive environmental resources and, as a result, environmental protection measures have been developed to minimize potential impacts on these resources and will be applied, as applicable, to the Project.

2.0 PRE-PROJECT CONDITIONS

Several forested/woodland communities are found near the 3.5-mile crossings of the JNF, including mixed mesophytic forests, conifer-northern hardwood forests, dry-mesic oak forests, dry and dry-mesic oak-pine forests, dry and xeric oak forests, woodlands, as well as xeric pine and pine-oak forests and woodlands. The following FS Management Prescriptions are crossed by the Project on the JNF: 4A (*Appalachian National Scenic Trail Corridor*); 4J (*Urban/Suburban Interface*), 6C (*Old-Growth Forest Communities Associated with Disturbance*); and 8A1 (*Mix of Successional Habitats in Forested Landscapes*). A timber cruise was conducted in October 2017 (discussed in more detail within Section 3.0). However, based on existing mapping, approximately 51.6 acres of forested/woodland areas within the JNF would be impacted during initial ROW clearing, which includes approximately 44.1 acres of land that are within Management Prescriptions identified as suitable for timber production (see Table 1).

Table 1		
Estimated FS Management Prescription Areas Impacted by the MVP Project on the Jefferson National Forest		
Management Prescription a/	Construction Impacts (acres)	Permanent Operational Impacts (acres)
Prescriptions containing areas that are suitable for timber production		
4J	14.1	5.8
8A1	30.0	12.3
Prescriptions containing areas that are not suitable for timber production		
4A	2.3	1.6
6C	5.2	2.0
Grand Total	51.6	21.7
a/ 4J = Urban/Suburban Interface 8A1 = Mix of Successional Habitats in Forested Landscapes 4A = Appalachian National Scenic Trail Corridor 6C = Old-Growth Forest Communities Associated with Disturbance		

MVP conducted preliminary tree surveys of the Project Area on the JNF (MVP 2016). A total of 35 plots within the JNF were surveyed in order to determine the dominant species of trees present, tree age (based on tree core samples), estimated trees per acre, as well as the height and basal area of measured trees. The Project’s tree survey report (MVP 2016) contains more details regarding the methods used during these initial surveys. Figures displaying the location of the 35 survey plots as well as the results of these surveys are provided in Attachment I-1. As shown in Attachment I-1, the density of trees identified along the Project’s route ranged from 0.49 to 114.59 trees per acre, and the age of trees within the plots ranged from 35 to 250 years. Tree species identified during these surveys included various species of oak (e.g., *Quercus alba*, *Q. arboretum*, *Q. coccinea*, *Q. montana*, *Q. velutina*), pine (e.g., *Pinus echinata*, *P. pungens*, *P. strobus*, *P. virginiana*), hickory (e.g., *Carya glabra*, *C. ovata*, *C. tomentosa*), maple (e.g., *Acer pensylvanicum* and *A. rubrum*), birch (*Betula lenta*), hemlock (*Tsuga canadensis*), black cherry (*Prunus*

serotina), tulip poplar (*Liriodendron tulipifera*), black tupelo (*Nyssa sylvatica*), magnolia (*Magnolia acuminata*), sassafras (*Sassafras albidum*), and sourwood (*Oxydendrum arboretum*).

3.0 TIMBER CRUISE

A detailed timber cruise within the Project workspace was conducted by the FS in October 2017. The timber cruise was conducted to determine the location, volumes, and species compositions of the timber to be removed from the JNF as part of the Project. Following completion of the timber cruise, a final appraisal was to be conducted by the FS and a Timber Removal Contract developed.

4.0 TIMBER REMOVAL

Tree felling of the entire Project workspace across the JNF occurred between February and April 2018. Clearing activities were completed in accordance with the Timber Removal Plan that was in place at the time (Appendix I of the November 30, 2017 Plan of Development). Some felled trees remain in place and have not been removed from the ROW as a result of the Stop Work Order issued by FERC.

The following subsections provide general details regarding how timber was cleared and was, or will be, removed from the Project workspace on the JNF.

4.1 General Construction

Prior to initiation of timber clearing and construction on the JNF, all Project personnel received environmental training. Training emphasized the need to comply with all environmental laws and regulations, including all Project-specific permitting documents. The roles and responsibilities of all pertinent parties, flagging/staking methodology, and disturbance limits were some of the major topics covered in the training (see Appendix C, N, and Z of the current Plan of Development [POD]).

Trees have been felled within the pipeline's 125-foot-wide construction right-of-way (which has been narrowed to 75 feet wide in some locations) and temporary workspaces, and any remaining vegetation was, or will be, cleared prior to the continuation of construction. All areas cleared were marked with paint and staked by the civil survey crew prior to the start of clearing operations. As depicted in Figure 7-1 of the POD to meet objectives for scenery, this marking included retention of trees within the construction right-of-way along an undulating, scalloped line to avoid parallel edges to the corridor. Also, in accordance with the invasive species plan, MVP arranged a location in which a JNF designated employee could examine and certify that equipment is clean and permitted to be used on FS property. Some trees remain where felled and some have been stacked along the right-of-way. Once construction re-starts, remaining felled trees will be windrowed on the ROW and brush and slash will be utilized in downslope areas of the right-of-way and/or removed from the area in accordance with FS requirements and the scenery management discussed in the POD.

During tree clearing operations, MVP worked with the BLM and FS to acquire approval of two variances (VA-MVP-001 and VA-MVP-003) that allowed for the retrieval of trees that had fallen away from the right-of-way.

Non-merchantable brush and slash was retained on site to provide a level of erosion control until actual pipeline construction begins, at which time it was windrowed to the edge of the right-of-way along Brush and Sinking Creek Mountains. During windrowing along Brush Mountain, it was determined that several timber piles were stacked outside of the Project ROW. MVP worked with the BLM and FS to acquire

approval of variances VA-MVP-006 that allowed construction to pull these windrows back onto the ROW. Windrowing of non-merchantable brush and slash along the right-of-way will result in habitat for many types of wildlife including: rabbits and other small mammals, ruffed grouse, song birds and reptiles and provide food for insects. The windrows can also serve as escape cover from predators as well as locations for nesting and shelter from inclement weather. The windrows should be restricted to 8' tall, 20' wide, and 100' long with a 50' break between piles in order to provide fire breaks and wildlife crossings. Non-merchantable brush and slash has also been utilized in downslope areas of the right-of-way and access roads to aide in soil stabilization and erosion control. Layering of brush and slash can promote physical protection to the downslope areas of the right-of-way. Additionally, the layering can provide long-term support for revegetation in downslope areas of the right-of-way. Any remaining non-merchantable timber that cannot be windrowed will be chipped into trucks and removed from the site.

In roadless areas, non-merchantable brush and slash was either stacked as described above within the approved 125-foot construction right-of-way or removed from the area. The FS monitored all timber felling activities to ensure compliance with the timber removal contract provisions through standard timber sale administration procedures throughout timber removal activities.

Additionally, MVP employed Environmental Inspectors to monitor environmental compliance during timber removal activities. Both the FS Contract Administration Team and MVP Environmental Inspectors were responsible for: 1) monitoring compliance with mitigating measures required by the Project's wildlife, migratory bird, and aquatic mitigation plans, permits, clearances, certificates, and other approvals of an environmental nature that are issued for the Project; 2) evaluating the contractor's implementation of the environmental mitigation measures required by the FERC Certificate, federal right-of-way grants, and any agreements made between MVP and the FS; 3) issuing stop-activity orders and corrective actions to maintain environmental compliance; 4) documenting compliance with environmental requirements; and 5) preparing required status reports for submittal to the FERC environmental staff and the FS.

Erosion control measures from the FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures) were and will continue to be implemented within the disturbance areas, and erosion controls maintained throughout construction and restoration (see Appendix C of the POD). Appendices C through AA of the POD contain a description of the measures and Best Management Practices to be implemented on the JNF to avoid or minimize impacts during the initial clearing of timber and construction of the Project.

4.2 Timber Clearing Methods

Timber was felled by hand with chain saws. Come-a-longs and rope were used for control of leaning stems. Skidders, forwarders, and loaders were used to stage different timber products to be windrowed or cut to length, hauled and sold. Yarders were not used.

MVP has compensated the FS for all merchantable timber cut on the JNF, based on the market value of the timber determined during the appraisal completed by the FS, as well as agreements made between MVP and the FS. The compensation occurred prior to the clearing of any timber. All merchantable timber cut from the portion of the Project across Sinking and Brush Mountains was cut and removed from the JNF per the FS specification and requirements outlined in the FS Handbook, agreements made with MVP, and the JNF Land and Resource Management Plan. Timber cut from the segment of the Project on Peters Mountain remains where it fell due to the Stop Work Order issued by FERC.

4.3 Timber Hauling

In order to minimize disturbance to the JNF and reduce the extent of work areas required, timber hauling routes and landing areas coincide with the construction ROW, access roads, and staging areas approved for use for construction, to the extent practical. The merchantable timber from Brush Mountain was staged at Craig Creek Road ATWS 1057. The logs from Sinking Creek Mountain were staged and hauled from where the ROW crosses Craig Creek Road. These areas are shown on the figures provided in Attachment I-2.

5.0 SCHEDULE

Clearing of timber on the JNF occurred between February and April 2018. The start of clearing was coordinated with the FS following the timber cruise, appraisal, timber sale contract excitation, boundary painting, right-of-way grant and notice to proceed issuance.

6.0 PLAN UPDATES

This Timber Removal Plan outlines MVP's commitments to the FS regarding how remaining timber removal will be conducted on the JNF. Work within the JNF and communication with the FS is ongoing, and it is anticipated that additional recommendations will be provided by the FS in response to this plan.

7.0 LITERATURE CITED

MVP (Mountain Valley Pipeline, LLC). 2016. Tree Surveys Within the Jefferson National Forest for the Mountain Valley Pipeline Project in Monroe County, West Virginia and Giles, and Montgomery Counties, Virginia. April 2016.

ATTACHMENT I-1
2016 TREE SURVEY PLOT LOCATIONS AND SURVEY RESULTS
(from MVP 2016)



Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: West Virginia County: Monroe

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 1 Plot ID: 00 Percent Slope: 30 Trees Per Acre: 70.40 Site Index: <40

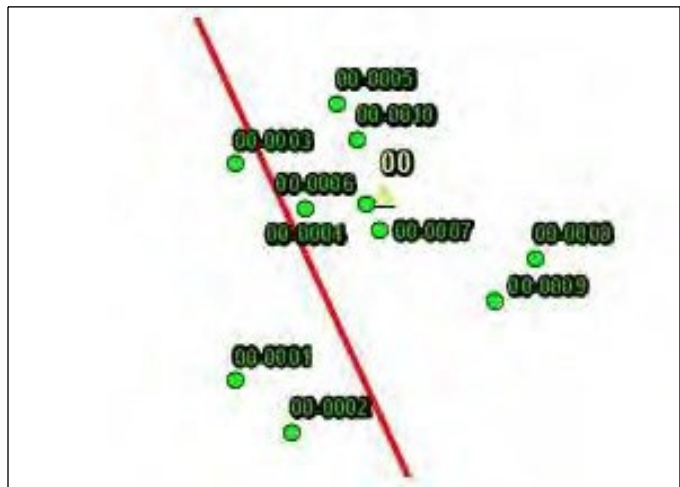
Comments: _____

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/01/2016	00-0009	<i>Quercus montana</i>	15	Alive	45	n/a	1.23	
03/01/2016	00-0003	<i>Quercus coccinea</i>	19	Alive	50	n/a	1.97	
03/01/2016	00-0005	<i>Quercus coccinea</i>	21	Alive	50	n/a	2.41	
03/01/2016	00-0002	<i>Quercus coccinea</i>	20	Alive	55	n/a	2.18	
03/01/2016	00-0007	<i>Quercus alba</i>	10	Alive	35	n/a	0.55	
03/01/2016	00-0001	<i>Quercus coccinea</i>	21	Alive	53	130	2.41	Core Sample Taken
03/01/2016	00-0010	<i>Quercus montana</i>	14	Dead	25	n/a	1.07	Snag
03/01/2016	00-0008	<i>Quercus montana</i>	17	Alive	45	n/a	1.58	
03/01/2016	00-0004	<i>Quercus montana</i>	13	Alive	40	n/a	0.92	
03/01/2016	00-0006	<i>Quercus coccinea</i>	21	Alive	55	n/a	2.41	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles

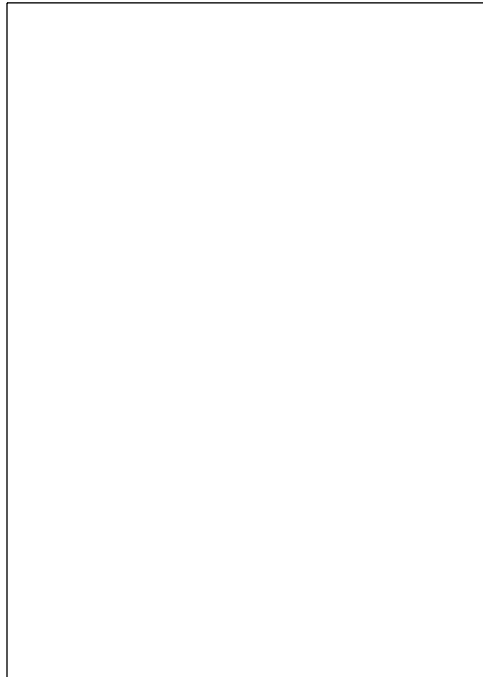
Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 2 Plot ID: 01 Percent Slope: 15 Trees Per Acre: 68.97 Site Index: <20

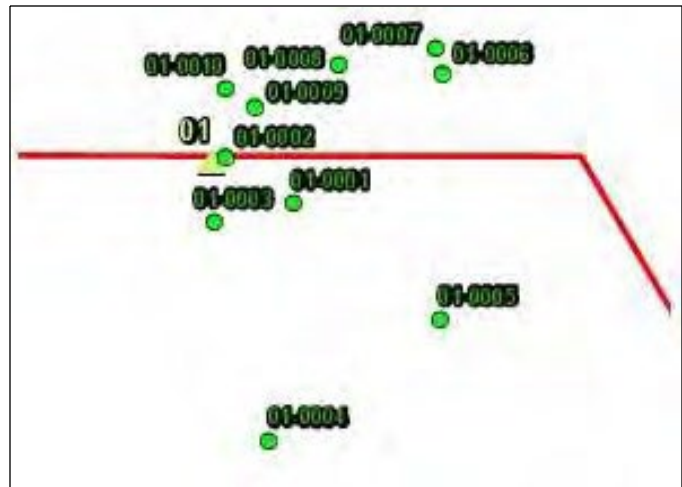
Comments: Located on ridge

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/01/2016	01-0002	<i>Quercus alba</i>	17	Alive	40	n/a	1.58	
03/01/2016	01-0010	<i>Betula lenta</i>	12	Alive	40	n/a	0.79	
03/01/2016	01-0001	<i>Quercus alba</i>	18	Alive	40	n/a	1.77	
03/01/2016	01-0009	<i>Quercus coccinea</i>	38	Alive	45	n/a	7.88	
03/01/2016	01-0008	<i>Carya ovata</i>	14	Alive	45	n/a	1.07	
03/01/2016	01-0007	<i>Quercus coccinea</i>	12	Alive	45	n/a	0.79	
03/01/2016	01-0006	<i>Quercus coccinea</i>	19	Alive	50	n/a	1.97	
03/01/2016	01-0005	<i>Quercus alba</i>	18	Dead	40	n/a	1.77	Snag
03/01/2016	01-0004	<i>Quercus alba</i>	17	Alive	45	250	1.58	Core Sample Taken
03/01/2016	01-0003	<i>Quercus alba</i>	17	Dead	40	n/a	1.58	Snag

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 3 Plot ID: 02 Percent Slope: 25 Trees Per Acre: 272.30 Site Index: <30

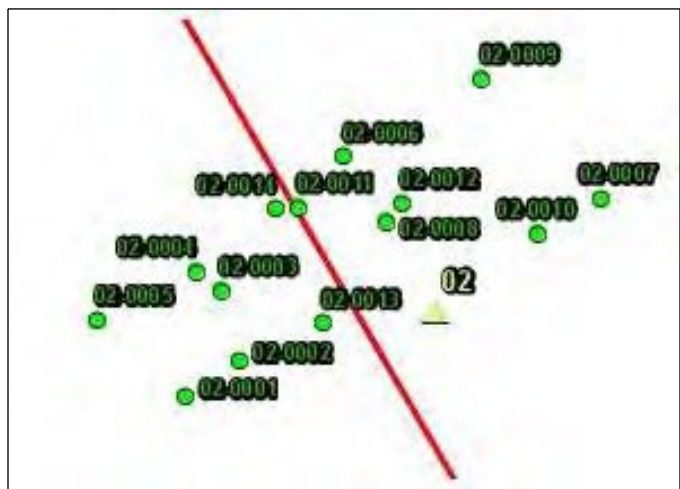
Comments: _____

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/01/2016	02-0013	<i>Quercus montana</i>	7	Alive	40	n/a	0.27	
03/01/2016	02-0012	<i>Quercus montana</i>	9	Alive	35	n/a	0.44	
03/01/2016	02-0010	<i>Quercus montana</i>	13	Alive	40	n/a	0.92	
03/01/2016	02-0009	<i>Nyssa sylvatica</i>	12	Alive	35	n/a	0.79	
03/01/2016	02-0008	<i>Quercus alba</i>	9	Alive	35	n/a	0.44	
03/01/2016	02-0014	<i>Quercus alba</i>	4	Alive	25	n/a	0.09	
03/01/2016	02-0007	<i>Pinus echinata</i>	17	Dead	20	n/a	1.58	Snag
03/01/2016	02-0006	<i>Quercus alba</i>	14	Alive	45	n/a	1.07	
03/01/2016	02-0005	<i>Quercus montana</i>	17	Alive	50	n/a	1.58	
03/01/2016	02-0011	<i>Quercus montana</i>	9	Alive	40	105	0.44	Core Sample Taken
03/01/2016	02-0004	<i>Quercus montana</i>	20	Alive	55	n/a	2.18	
03/01/2016	02-0003	<i>Quercus montana</i>	21	Alive	50	n/a	2.41	Leaning
03/01/2016	02-0002	<i>Acer rubrum</i>	9	Alive	40	n/a	0.44	
03/01/2016	02-0001	<i>Quercus montana</i>	19	Alive	50	n/a	1.97	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 4 Plot ID: 03 Percent Slope: 18 Trees Per Acre: 240.19 Site Index: 30 - 40

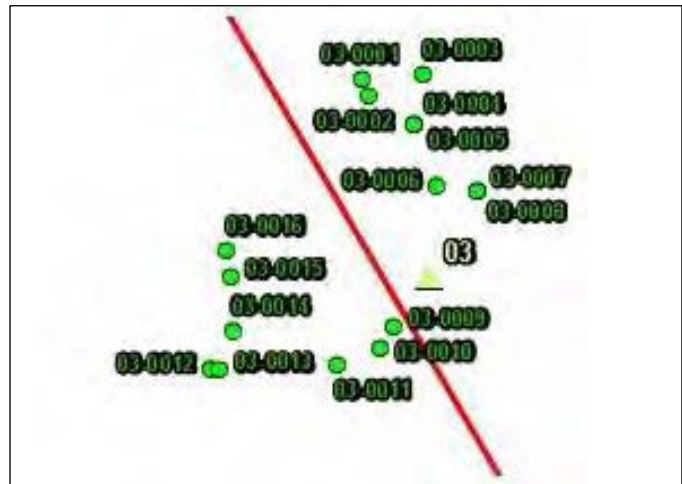
Comments: _____

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/01/2016	03-0015	<i>Sassafras albidum</i>	11	Dead	35	n/a	0.66	Snag
03/01/2016	03-0011	<i>Acer rubrum</i>	8	Alive	55	n/a	0.35	
03/01/2016	03-0013	<i>Quercus montana</i>	12	Alive	55	82	0.79	Core Sample Taken
03/01/2016	03-0010	<i>Quercus alba</i>	20	Alive	65	n/a	2.18	
03/01/2016	03-0014	<i>Sassafras albidum</i>	11	Alive	40	n/a	0.66	
03/01/2016	03-0009	<i>Quercus montana</i>	14	Alive	65	n/a	1.07	
03/01/2016	03-0008	<i>Quercus montana</i>	13	Alive	60	n/a	0.92	
03/01/2016	03-0007	<i>Sassafras albidum</i>	7	Partially alive	35	n/a	0.27	
03/01/2016	03-0006	<i>Sassafras albidum</i>	7	Alive	35	n/a	0.27	
03/01/2016	03-0001	<i>Quercus coccinea</i>	15	Alive	70	n/a	1.23	
03/01/2016	03-0005	<i>Quercus montana</i>	12	Alive	65	n/a	0.79	
03/01/2016	03-0004	<i>Quercus montana</i>	10	Alive	65	n/a	0.55	
03/01/2016	03-0012	<i>Quercus alba</i>	13	Alive	55	127	0.92	Core Sample Taken
03/01/2016	03-0003	<i>Quercus montana</i>	13	Alive	70	n/a	0.92	
03/01/2016	03-0016	<i>Sassafras albidum</i>	8	Alive	35	n/a	0.35	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 5 Plot ID: 04 Percent Slope: 15 Trees Per Acre: 91.16 Site Index: 45

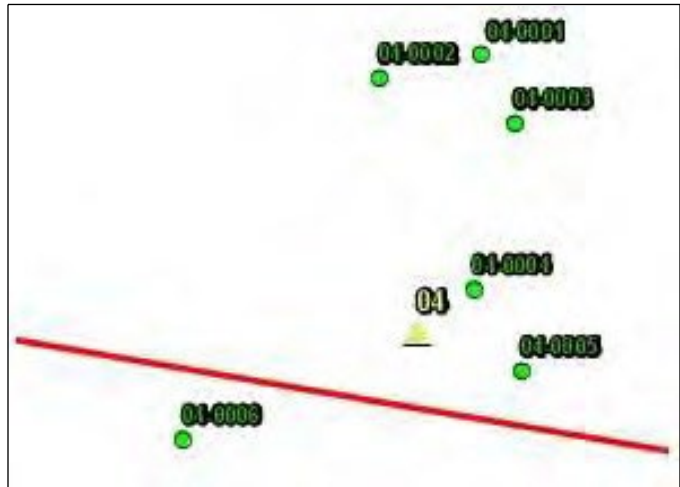
Comments: _____

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/01/2016	04-0006	<i>Quercus montana</i>	10	Alive	50	n/a	0.55	
03/01/2016	04-0005	<i>Acer rubrum</i>	7	Alive	40	n/a	0.27	
03/01/2016	04-0004	<i>Quercus montana</i>	11	Alive	60	88	0.66	Core Sample Taken
03/01/2016	04-0003	<i>Quercus montana</i>	12	Alive	55	n/a	0.79	
03/01/2016	04-0002	<i>Quercus montana</i>	13	Alive	60	n/a	0.92	
03/01/2016	04-0001	<i>Quercus coccinea</i>	14	Alive	66	n/a	1.07	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 6 Plot ID: 05 Percent Slope: 12 Trees Per Acre: 140.74 Site Index: 40 - 55

Comments: _____

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/01/2016	05-0008	<i>Quercus montana</i>	12	Alive	60	n/a	0.79	
03/01/2016	05-0007	<i>Pinus virginiana</i>	12	Alive	55	n/a	0.79	
03/01/2016	05-0006	<i>Pinus virginiana</i>	13	Alive	55	n/a	0.92	
03/01/2016	05-0005	<i>Nyssa sylvatica</i>	5	Alive	30	n/a	0.14	
03/01/2016	05-0004	<i>Pinus virginiana</i>	9	Alive	50	n/a	0.44	
03/01/2016	05-0003	<i>Pinus virginiana</i>	12	Alive	60	116	0.79	Core Sample Taken
03/01/2016	05-0002	<i>Quercus montana</i>	17	Alive	65	141	1.58	Core Sample Taken
03/01/2016	05-0001	<i>Quercus montana</i>	19	Alive	68	n/a	1.97	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 6 Plot ID: 06 Percent Slope: 10 Trees Per Acre: 140.74 Site Index: n/a

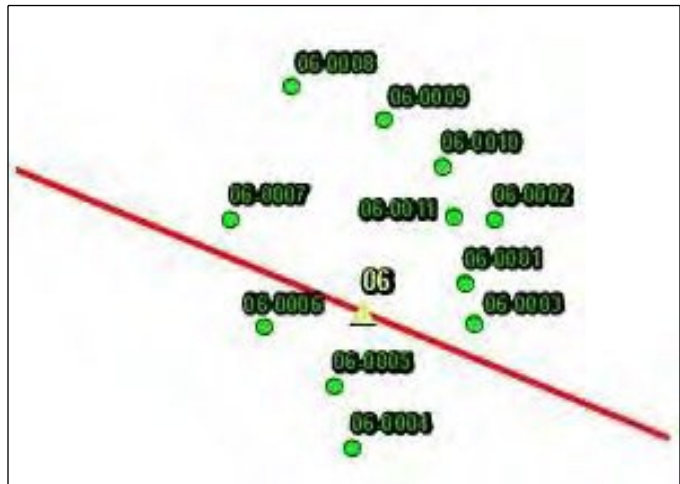
Comments: No tree cores taken; same stand as plot 05

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/02/2016	06-0011	<i>Quercus montana</i>	6	Alive	25	n/a	0.20	
03/02/2016	06-0010	<i>Quercus montana</i>	7	Alive	35	n/a	0.27	
03/02/2016	06-0009	<i>Quercus montana</i>	12	Alive	50	n/a	0.79	
03/02/2016	06-0008	<i>Quercus montana</i>	16	Alive	55	n/a	1.40	
03/02/2016	06-0007	<i>Quercus montana</i>	20	Alive	60	n/a	2.18	
03/02/2016	06-0006	<i>Quercus montana</i>	13	Alive	55	n/a	0.92	
03/02/2016	06-0005	<i>Quercus montana</i>	12	Alive	55	n/a	0.79	
03/02/2016	06-0004	<i>Quercus montana</i>	20	Alive	60	n/a	2.18	
03/02/2016	06-0003	<i>Pinus virginiana</i>	15	Alive	50	n/a	1.23	
03/02/2016	06-0002	<i>Quercus montana</i>	13	Alive	50	n/a	0.92	
03/02/2016	06-0001	<i>Quercus montana</i>	16	Alive	53	n/a	1.40	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 7 Plot ID: 07 Percent Slope: 15 Trees Per Acre: 437.69 Site Index: 35 - 40

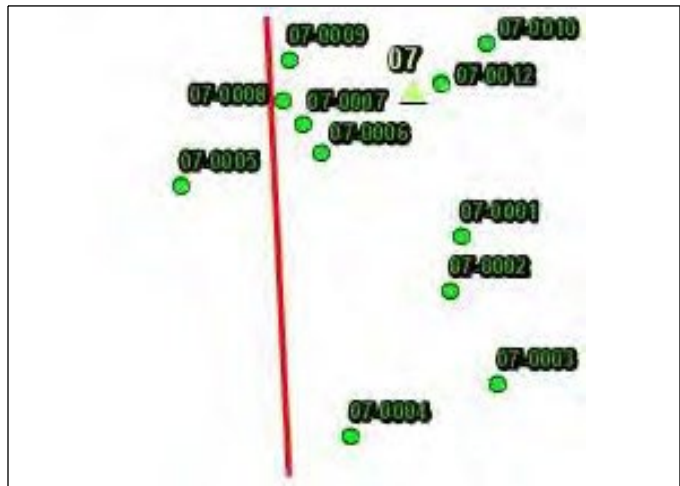
Comments: _____

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/02/2016	07-0012	<i>Nyssa sylvatica</i>	3	Alive	25	n/a	0.05	
03/02/2016	07-0008	<i>Acer rubrum</i>	5	Alive	35	n/a	0.14	
03/02/2016	07-0007	<i>Acer rubrum</i>	5	Alive	25	n/a	0.14	
03/02/2016	07-0006	<i>Acer rubrum</i>	6	Alive	40	n/a	0.20	
03/02/2016	07-0005	<i>Quercus coccinea</i>	16	Alive	55	n/a	1.40	
03/02/2016	07-0010	<i>Nyssa sylvatica</i>	6	Alive	40	n/a	0.20	
03/02/2016	07-0004	<i>Quercus montana</i>	11	Alive	50	100	0.66	Core Sample Taken
03/02/2016	07-0003	<i>Quercus alba</i>	15	Alive	60	n/a	1.23	
03/02/2016	07-0002	<i>Quercus montana</i>	7	Alive	45	n/a	0.27	
03/02/2016	07-0001	<i>Quercus coccinea</i>	11	Alive	54	95	0.66	Core Sample Taken
03/02/2016	07-0009	<i>Acer rubrum</i>	6	Alive	40	n/a	0.20	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles

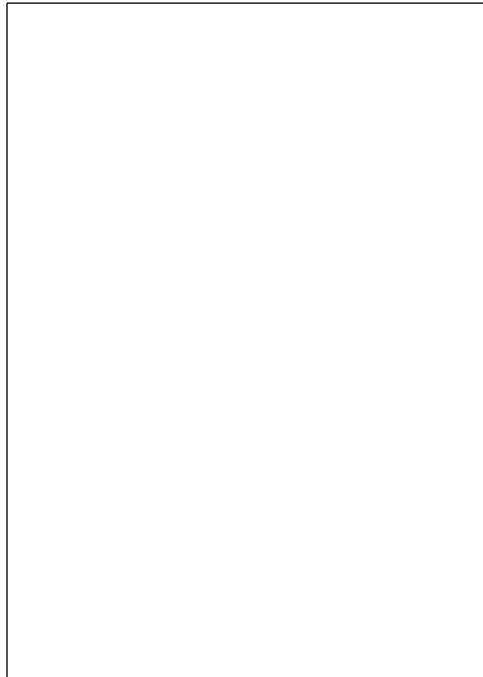
Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 9 Plot ID: 08 Percent Slope: 10 Trees Per Acre: 180.66 Site Index: 40 - 50

Comments: _____

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/02/2016	08-0010	<i>Quercus coccinea</i>	15	Alive	65	n/a	1.23	
03/02/2016	08-0009	<i>Quercus alba</i>	17	Alive	70	n/a	1.58	
03/02/2016	08-0008	<i>Carya tomentosa</i>	11	Alive	70	n/a	0.66	
03/02/2016	08-0007	<i>Quercus coccinea</i>	12	Alive	60	76	0.79	Core Sample Taken
03/02/2016	08-0006	<i>Carya tomentosa</i>	5	Alive	25	n/a	0.14	
03/02/2016	08-0005	<i>Oxydendrum arboreum</i>	5	Alive	25	n/a	0.14	
03/02/2016	08-0004	<i>Quercus coccinea</i>	16	Alive	60	n/a	1.40	
03/02/2016	08-0003	<i>Quercus alba</i>	14	Alive	65	90	1.07	Core Sample Taken
03/02/2016	08-0002	<i>Quercus coccinea</i>	9	Dead	50	n/a	0.44	Snag
03/02/2016	08-0001	<i>Quercus coccinea</i>	17	Alive	67	n/a	1.58	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 10 Plot ID: 09 Percent Slope: 15 Trees Per Acre: 89.43 Site Index: 50 - 60

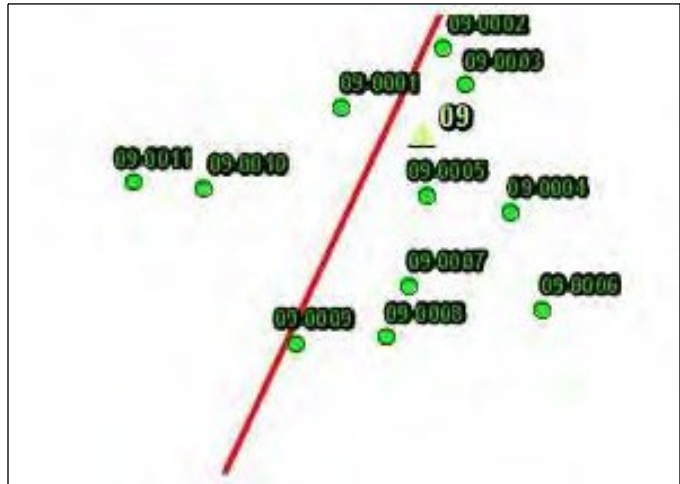
Comments: _____

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/02/2016	09-0003	<i>Quercus coccinea</i>	18	Alive	70	n/a	1.77	
03/02/2016	09-0009	<i>Quercus alba</i>	13	Alive	65	n/a	0.92	
03/02/2016	09-0001	<i>Quercus coccinea</i>	20	Alive	75	62	2.18	Core Sample Taken
03/02/2016	09-0008	<i>Quercus rubra</i>	19	Dead	65	n/a	1.97	Snag
03/02/2016	09-0007	<i>Betula lenta</i>	7	Alive	40	n/a	0.27	
03/02/2016	09-0002	<i>Quercus alba</i>	22	Alive	75	n/a	2.64	
03/02/2016	09-0006	<i>Quercus velutina</i>	21	Alive	75	n/a	2.41	
03/02/2016	09-0010	<i>Quercus rubra</i>	14	Alive	65	n/a	1.07	
03/02/2016	09-0011	<i>Quercus rubra</i>	18	Alive	70	95	1.77	Core Sample Taken
03/02/2016	09-0005	<i>Quercus rubra</i>	27	Alive	75	n/a	3.98	
03/02/2016	09-0004	<i>Betula lenta</i>	12	Alive	55	n/a	0.79	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles

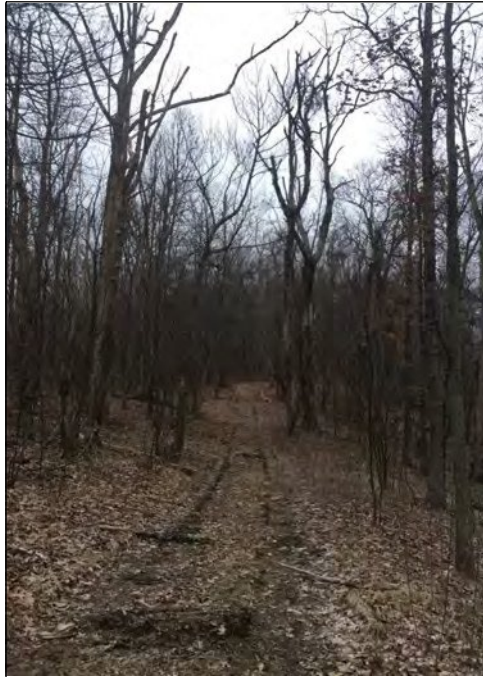
Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 9 Plot ID: 10 Percent Slope: 15 Trees Per Acre: 89.43 Site Index: n/a

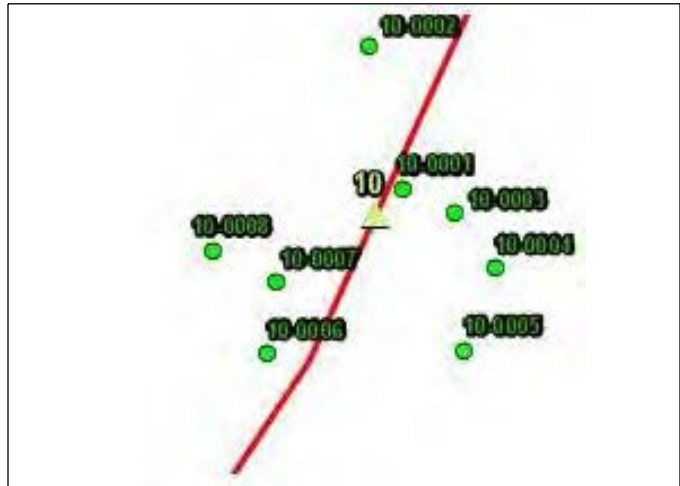
Comments: No cores taken; mostly snags and same stand composition as 09

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/02/2016	10-0008	<i>Quercus coccinea</i>	24	Dead	65	n/a	3.14	Snag
03/02/2016	10-0007	<i>Quercus coccinea</i>	22	Alive	70	n/a	2.64	
03/02/2016	10-0006	<i>Quercus rubra</i>	26	Dead	65	n/a	3.69	Snag
03/02/2016	10-0005	<i>Carya glabra</i>	13	Alive	65	n/a	0.92	
03/02/2016	10-0004	<i>Quercus rubra</i>	14	Dead	55	n/a	1.07	Snag
03/02/2016	10-0003	<i>Acer rubrum</i>	11	Alive	55	n/a	0.66	
03/02/2016	10-0002	<i>Quercus coccinea</i>	27	Dead	65	n/a	3.98	Snag
03/02/2016	10-0001	<i>Quercus coccinea</i>	25	Dead	70	n/a	3.41	Snag

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles
 Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert
 Stand ID: 9 Plot ID: 11 Percent Slope: 20 Trees Per Acre: 89.43 Site Index: n/a

Comments: Similar stand composition to plot 10; no cores taken

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/03/2016	11-0010	<i>Quercus coccinea</i>	15	Alive	75	n/a	1.23	
03/03/2016	11-0009	<i>Acer rubrum</i>	5	Alive	30	n/a	0.14	
03/03/2016	11-0008	<i>Quercus montana</i>	15	Alive	70	n/a	1.23	
03/03/2016	11-0002	<i>Quercus coccinea</i>	26	Alive	90	n/a	3.69	
03/03/2016	11-0001	<i>Quercus coccinea</i>	26	Alive	95	n/a	3.69	
03/03/2016	11-0007	<i>Quercus coccinea</i>	36	Alive	70	n/a	7.07	
03/03/2016	11-0006	<i>Quercus coccinea</i>	23	Dead	75	n/a	2.89	Snag
03/03/2016	11-0005	<i>Acer pensylvanicum</i>	8	Alive	25	n/a	0.35	
03/03/2016	11-0004	<i>Quercus montana</i>	9	Alive	65	n/a	0.44	
03/03/2016	11-0003	<i>Quercus montana</i>	14	Alive	70	n/a	1.07	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 10 Plot ID: 12 Percent Slope: 20 Trees Per Acre: 141.51 Site Index: 50 - 60

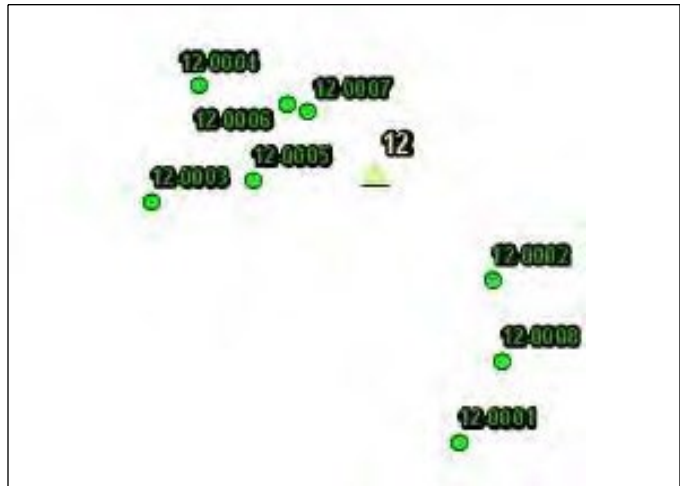
Comments: Sparse remnant mixed oak canopy; hemlock canopy and subcanopy present along stream; thick rhododendron understory

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/04/2016	12-0008	<i>Tsuga canadensis</i>	8	Dead	40	n/a	0.35	Snag
03/04/2016	12-0007	<i>Tsuga canadensis</i>	14	Alive	50	n/a	1.07	Top broken
03/04/2016	12-0006	<i>Quercus velutina</i>	9	Alive	55	n/a	0.44	
03/04/2016	12-0005	<i>Acer rubrum</i>	7	Alive	55	n/a	0.27	
03/04/2016	12-0004	<i>Quercus velutina</i>	18	Alive	70	n/a	1.77	
03/04/2016	12-0003	<i>Quercus velutina</i>	17	Alive	75	105	1.58	Core Sample Taken
03/04/2016	12-0002	<i>Acer rubrum</i>	7	Alive	35	n/a	0.27	Leaning
03/04/2016	12-0001	<i>Tsuga canadensis</i>	14	Alive	75	62	1.07	Core Sample Taken

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 10 Plot ID: 13 Percent Slope: 25 Trees Per Acre: 141.51 Site Index: n/a

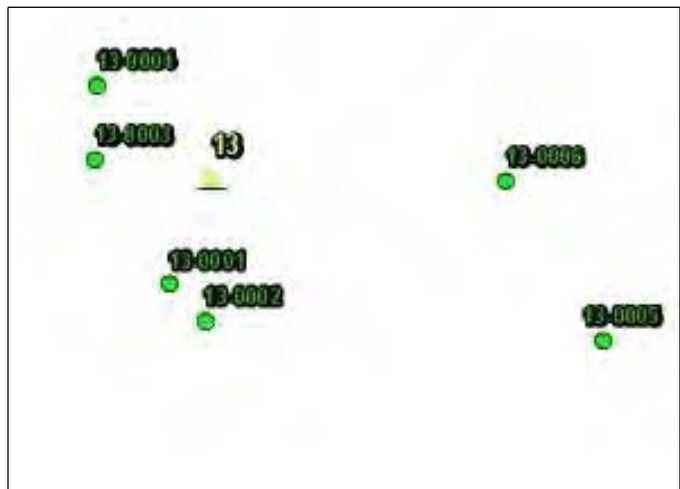
Comments: No cores taken; Thick rhododendron in understory; uneven-aged stand with mixed oak canopy and mixed mesophytic subcanopy

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/04/2016	13-0006	<i>Quercus montana</i>	13	Alive	55	n/a	0.92	
03/04/2016	13-0005	<i>Tsuga canadensis</i>	5	Alive	20	n/a	0.14	
03/04/2016	13-0004	<i>Quercus velutina</i>	24	Alive	55	n/a	3.14	Top broken
03/04/2016	13-0003	<i>Acer rubrum</i>	7	Alive	25	n/a	0.27	
03/04/2016	13-0002	<i>Quercus alba</i>	18	Alive	75	n/a	1.77	
03/04/2016	13-0001	<i>Acer rubrum</i>	5	Alive	30	n/a	0.14	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 11 Plot ID: 14 Percent Slope: 20 Trees Per Acre: 137.51 Site Index: 51

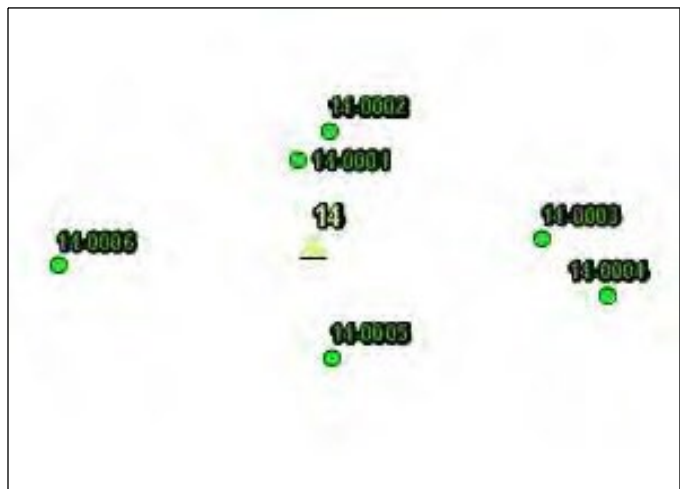
Comments: _____

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/04/2016	14-0006	<i>Oxydendrum arboreum</i>	8	Alive	40	n/a	0.35	
03/04/2016	14-0005	<i>Nyssa sylvatica</i>	5	Alive	30	n/a	0.14	
03/04/2016	14-0004	<i>Nyssa sylvatica</i>	8	Alive	40	n/a	0.35	
03/04/2016	14-0003	<i>Nyssa sylvatica</i>	10	Alive	50	n/a	0.55	
03/04/2016	14-0002	<i>Quercus velutina</i>	15	Alive	70	95	1.23	Core Sample Taken
03/04/2016	14-0001	<i>Quercus montana</i>	21	Alive	75	n/a	2.41	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 12 Plot ID: 15 Percent Slope: 10 Trees Per Acre: 112.26 Site Index: 57 - 58

Comments: _____

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/04/2016	15-0011	<i>Quercus montana</i>	14	Alive	70	n/a	1.07	
03/04/2016	15-0006	<i>Quercus coccinea</i>	19	Alive	70	n/a	1.97	
03/04/2016	15-0005	<i>Quercus montana</i>	7	Alive	40	n/a	0.27	
03/04/2016	15-0004	<i>Acer rubrum</i>	10	Alive	55	n/a	0.55	
03/04/2016	15-0003	<i>Quercus alba</i>	11	Alive	55	n/a	0.66	
03/04/2016	15-0002	<i>Quercus alba</i>	14	Alive	65	n/a	1.07	
03/04/2016	15-0009	<i>Quercus coccinea</i>	15	Alive	70	n/a	1.23	
03/04/2016	15-0008	<i>Quercus montana</i>	23	Alive	75	n/a	2.89	
03/04/2016	15-0007	<i>Quercus coccinea</i>	16	Alive	80	95	1.40	Core Sample Taken
03/04/2016	15-0010	<i>Quercus coccinea</i>	15	Dead	30	n/a	1.23	Snag
03/04/2016	15-0001	<i>Quercus montana</i>	20	Alive	80	100	2.18	Core Sample Taken

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 13 Plot ID: 16 Percent Slope: 15 Trees Per Acre: 42.10 Site Index: 73

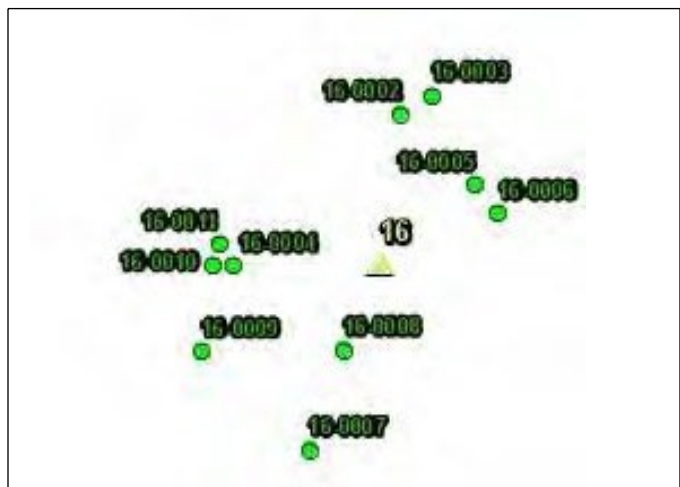
Comments: _____

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/04/2016	16-0011	<i>Quercus rubra</i>	28	Alive	125	n/a	4.28	
03/04/2016	16-0010	<i>Magnolia acuminata</i>	19	Alive	95	n/a	1.97	
03/04/2016	16-0009	<i>Quercus rubra</i>	21	Alive	80	n/a	2.41	
03/04/2016	16-0006	<i>Quercus rubra</i>	23	Alive	100	88	2.89	Core Sample Taken
03/04/2016	16-0005	<i>Magnolia acuminata</i>	20	Alive	110	120	2.18	Core Sample Taken
03/04/2016	16-0003	<i>Quercus montana</i>	23	Alive	110	n/a	2.89	
03/04/2016	16-0002	<i>Quercus rubra</i>	34	Alive	130	n/a	6.30	
03/04/2016	16-0004	<i>Betula lenta</i>	13	Alive	90	n/a	0.92	
03/04/2016	16-0007	<i>Quercus rubra</i>	27	Alive	90	n/a	3.98	
03/04/2016	16-0008	<i>Quercus rubra</i>	15	Alive	75	n/a	1.23	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles

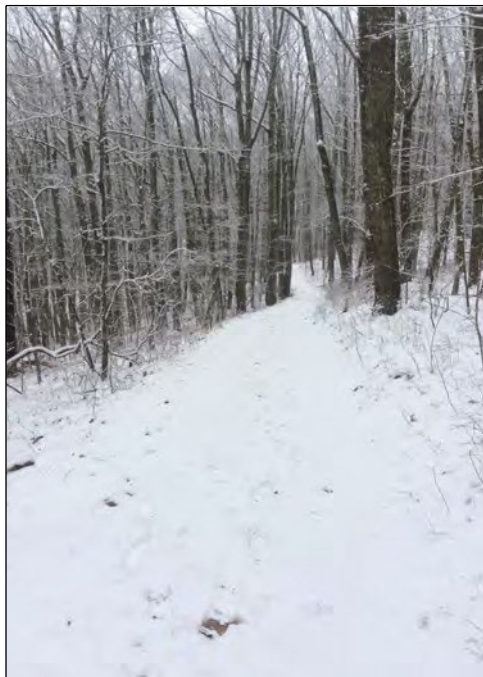
Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 14 Plot ID: 17 Percent Slope: 20 Trees Per Acre: 117.03 Site Index: n/a

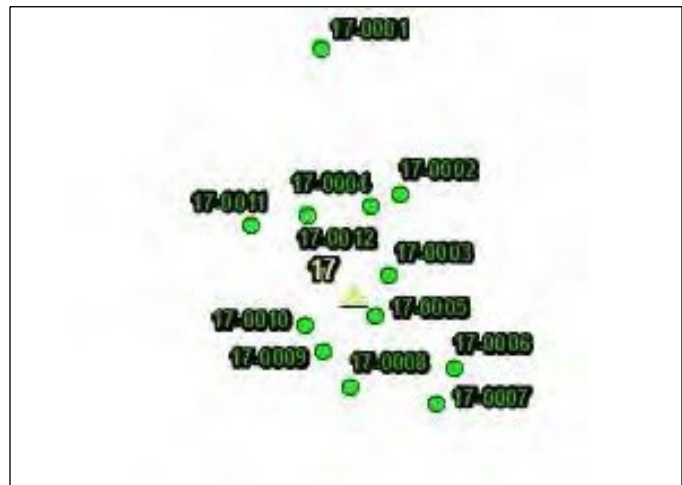
Comments: No cores taken; similar stand composition to plot 18

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/04/2016	17-0010	<i>Quercus montana</i>	9	Alive	60	n/a	0.44	
03/04/2016	17-0009	<i>Quercus montana</i>	9	Alive	60	n/a	0.44	
03/04/2016	17-0008	<i>Quercus montana</i>	20	Alive	80	n/a	2.18	
03/04/2016	17-0007	<i>Quercus montana</i>	13	Alive	75	n/a	0.92	
03/04/2016	17-0006	<i>Quercus montana</i>	12	Alive	70	n/a	0.79	
03/04/2016	17-0005	<i>Acer rubrum</i>	8	Alive	60	n/a	0.35	
03/04/2016	17-0004	<i>Quercus montana</i>	11	Alive	60	n/a	0.66	
03/04/2016	17-0003	<i>Quercus montana</i>	9	Alive	55	n/a	0.44	
03/04/2016	17-0011	<i>Quercus montana</i>	12	Alive	70	n/a	0.79	
03/04/2016	17-0002	<i>Quercus montana</i>	13	Alive	60	n/a	0.92	
03/04/2016	17-0001	<i>Quercus coccinea</i>	15	Alive	80	n/a	1.23	
03/04/2016	17-0012	<i>Oxydendrum arboreum</i>	12	Alive	65	n/a	0.79	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 14 Plot ID: 18 Percent Slope: 20 Trees Per Acre: 117.03 Site Index: 50

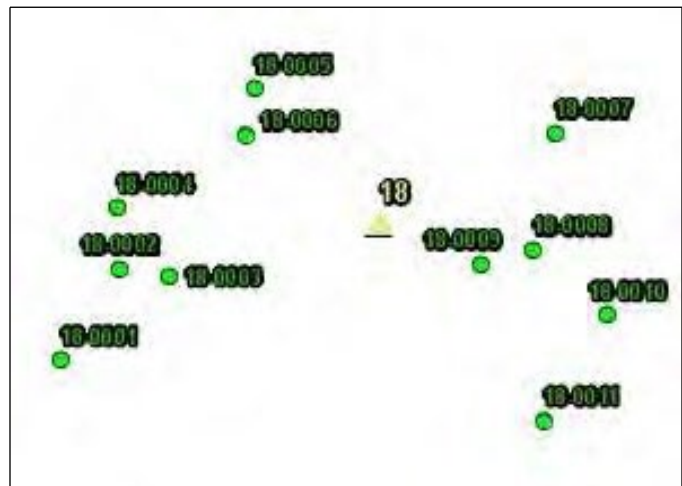
Comments: _____

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/03/2016	18-0009	<i>Quercus montana</i>	14	Alive	70	n/a	1.07	
03/03/2016	18-0008	<i>Quercus montana</i>	19	Alive	75	n/a	1.97	
03/03/2016	18-0007	<i>Quercus montana</i>	32	Alive	85	n/a	5.58	
03/03/2016	18-0006	<i>Quercus montana</i>	23	Alive	80	n/a	2.89	
03/03/2016	18-0005	<i>Quercus velutina</i>	17	Alive	75	90	1.58	Core Sample Taken
03/03/2016	18-0004	<i>Quercus velutina</i>	12	Alive	70	n/a	0.79	
03/03/2016	18-0003	<i>Quercus montana</i>	12	Alive	65	n/a	0.79	
03/03/2016	18-0010	<i>Quercus montana</i>	17	Alive	75	130	1.58	Core Sample Taken
03/03/2016	18-0002	<i>Quercus velutina</i>	19	Alive	85	n/a	1.97	
03/03/2016	18-0001	<i>Quercus coccinea</i>	34	Alive	85	n/a	6.30	
03/03/2016	18-0011	<i>Quercus coccinea</i>	16	Alive	75	n/a	1.40	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 15 Plot ID: 19 Percent Slope: 15 Trees Per Acre: 398.97 Site Index: 60

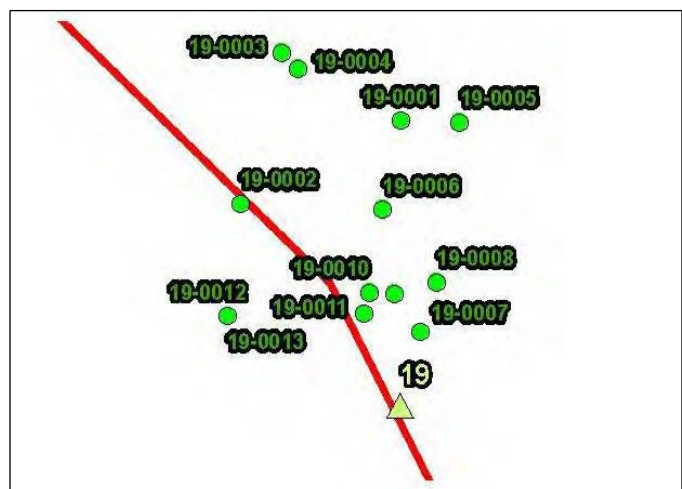
Comments: _____

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/03/2016	19-0011	<i>Quercus montana</i>	11	Dead	55	n/a	0.66	Snag
03/03/2016	19-0010	<i>Quercus montana</i>	11	Dead	60	n/a	0.66	Snag
03/03/2016	19-0009	<i>Acer rubrum</i>	7	Alive	40	n/a	0.27	
03/03/2016	19-0008	<i>Oxydendrum arboreum</i>	5	Alive	25	n/a	0.14	
03/03/2016	19-0007	<i>Quercus velutina</i>	14	Dead	35	n/a	1.07	Snag
03/03/2016	19-0006	<i>Quercus montana</i>	6	Dead	10	n/a	0.20	Snag
03/03/2016	19-0005	<i>Acer rubrum</i>	5	Alive	20	n/a	0.14	
03/03/2016	19-0004	<i>Quercus montana</i>	10	Dead	50	n/a	0.55	Snag
03/03/2016	19-0012	<i>Acer rubrum</i>	11	Alive	60	50	0.66	Core Sample Taken
03/03/2016	19-0003	<i>Quercus montana</i>	14	Dead	55	n/a	1.07	Snag
03/03/2016	19-0013	<i>Acer rubrum</i>	13	Alive	65	n/a	0.92	
03/03/2016	19-0002	<i>Nyssa sylvatica</i>	4	Alive	20	n/a	0.09	
03/03/2016	19-0001	<i>Acer rubrum</i>	10	Alive	55	n/a	0.55	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County: Giles

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 16 Plot ID: 20 Percent Slope: 20 Trees Per Acre: 288.81 Site Index: 63 - 72

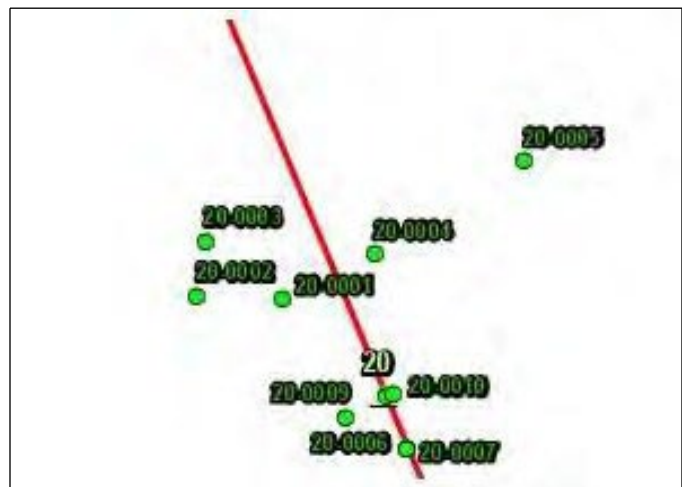
Comments: _____

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/03/2016	20-0001	<i>Quercus alba</i>	17	Alive	80	67	1.58	Core Sample Taken
03/03/2016	20-0010	<i>Prunus serotina</i>	4	Alive	25	n/a	0.09	
03/03/2016	20-0009	<i>Prunus serotina</i>	6	Alive	45	n/a	0.20	
03/03/2016	20-0008	<i>Prunus serotina</i>	6	Alive	40	n/a	0.20	
03/03/2016	20-0007	<i>Liriodendron tulipifera</i>	11	Alive	65	n/a	0.66	
03/03/2016	20-0006	<i>Liriodendron tulipifera</i>	8	Alive	55	n/a	0.35	
03/03/2016	20-0005	<i>Quercus alba</i>	27	Alive	85	n/a	3.98	
03/03/2016	20-0002	<i>Quercus velutina</i>	19	Alive	80	82	1.97	Core Sample Taken
03/03/2016	20-0004	<i>Acer rubrum</i>	17	Alive	70	n/a	1.58	
03/03/2016	20-0003	<i>Quercus montana</i>	11	Alive	80	60	0.66	Core Sample Taken

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County Montgomery
 Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert
 Stand ID: 17 Plot ID: 21 Percent Slope: 30 Trees Per Acre: 120.31 Site Index: 37 - 50

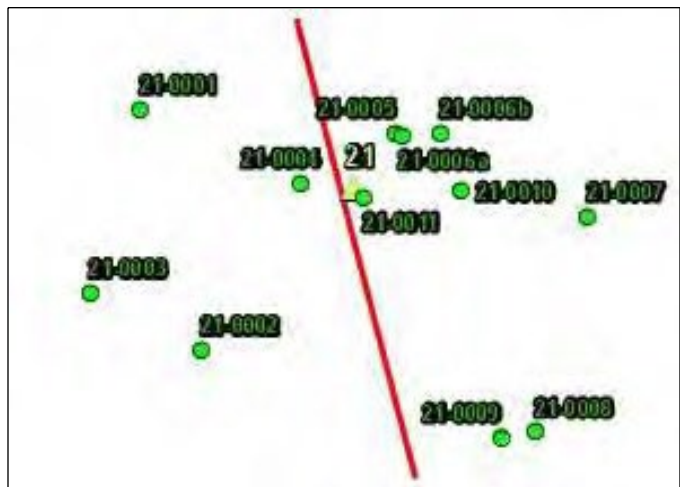
Comments: Plot moved downslope to avoid boulders; also moved eastward to match centerline flagging

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/05/2016	21-0009	<i>Quercus montana</i>	13	Dead	45	n/a	0.92	Snag
03/05/2016	21-0008	<i>Quercus montana</i>	25	Dead	30	n/a	3.41	Snag
03/05/2016	21-0007	<i>Carya tomentosa</i>	13	Alive	65	n/a	0.92	
03/05/2016	21-0006b	<i>Nyssa sylvatica</i>	8	Alive	45	n/a	0.35	
03/05/2016	21-0006a	<i>Carya tomentosa</i>	10	Alive	40	n/a	0.55	Leaning
03/05/2016	21-0005	<i>Quercus velutina</i>	10	Alive	55	n/a	0.55	
03/05/2016	21-0004	<i>Quercus velutina</i>	10	Alive	55	n/a	0.55	
03/05/2016	21-0003	<i>Quercus montana</i>	14	Alive	70	n/a	1.07	
03/05/2016	21-0002	<i>Quercus velutina</i>	19	Alive	75	n/a	1.97	
03/05/2016	21-0001	<i>Quercus velutina</i>	21	Alive	75	147	2.41	Core Sample Taken
03/05/2016	21-0011	<i>Carya tomentosa</i>	12	Alive	60	125	0.79	Core Sample Taken
03/05/2016	21-0010	<i>Quercus montana</i>	10	Alive	45	n/a	0.55	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County Montgomery

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 17 Plot ID: 22 Percent Slope: 20 Trees Per Acre: 120.31 Site Index: n/a

Comments: No cores taken; similar stand composition to plot 21

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/05/2016	22-0009	<i>Quercus montana</i>	19	Alive	70	n/a	1.97	
03/05/2016	22-0008	<i>Quercus montana</i>	11	Alive	60	n/a	0.66	
03/05/2016	22-0007	<i>Quercus montana</i>	7	Alive	45	n/a	0.27	
03/05/2016	22-0006	<i>Acer rubrum</i>	10	Alive	55	n/a	0.55	
03/05/2016	22-0005	<i>Oxydendrum arboreum</i>	8	Alive	30	n/a	0.35	
03/05/2016	22-0004	<i>Carya tomentosa</i>	11	Alive	65	n/a	0.66	
03/05/2016	22-0003	<i>Quercus velutina</i>	19	Alive	80	n/a	1.97	
03/05/2016	22-0010	<i>Pinus virginiana</i>	18	Alive	80	n/a	1.77	Bear claw marks
03/05/2016	22-0002	<i>Pinus virginiana</i>	18	Alive	85	n/a	1.77	
03/05/2016	22-0001	<i>Quercus velutina</i>	21	Alive	75	n/a	2.41	
03/05/2016	22-0011	<i>Quercus alba</i>	25	Alive	75	n/a	3.41	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County Montgomery

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 18 Plot ID: 23 Percent Slope: 15 Trees Per Acre: 36.41 Site Index: 55 - 111

Comments: Spring/stream through plot

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/05/2016	23-0010	<i>Liriodendron tulipifera</i>	23	Alive	125	83	2.89	Core Sample Taken
03/05/2016	23-0009	<i>Liriodendron tulipifera</i>	24	Alive	130	n/a	3.14	
03/05/2016	23-0008	<i>Liriodendron tulipifera</i>	15	Alive	120	n/a	1.23	
03/05/2016	23-0007	<i>Quercus montana</i>	19	Alive	80	n/a	1.97	
03/05/2016	23-0006	<i>Quercus montana</i>	18	Alive	80	137	1.77	Core Sample Taken
03/05/2016	23-0005	<i>Quercus montana</i>	32	Alive	90	n/a	5.58	
03/05/2016	23-0004	<i>Quercus montana</i>	29	Dead	70	n/a	4.59	Snag
03/05/2016	23-0003	<i>Liriodendron tulipifera</i>	41	Alive	125	n/a	9.17	
03/05/2016	23-0002	<i>Liriodendron tulipifera</i>	19	Alive	125	n/a	1.97	
03/05/2016	23-0001	<i>Liriodendron tulipifera</i>	23	Alive	130	n/a	2.89	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County Montgomery

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 19 Plot ID: 24 Percent Slope: 20 Trees Per Acre: 272.60 Site Index: 92

Comments: _____

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/05/2016	24-0010	<i>Acer rubrum</i>	10	Alive	70	n/a	0.55	
03/05/2016	24-0009	<i>Acer rubrum</i>	11	Alive	70	n/a	0.66	
03/05/2016	24-0008	<i>Quercus velutina</i>	8	Alive	65	n/a	0.35	
03/05/2016	24-0007	<i>Quercus velutina</i>	12	Alive	75	35	0.79	Core Sample Taken
03/05/2016	24-0006	<i>Quercus montana</i>	8	Alive	70	n/a	0.35	
03/05/2016	24-0005	<i>Quercus velutina</i>	12	Alive	75	n/a	0.79	
03/05/2016	24-0004	<i>Quercus velutina</i>	12	Alive	70	n/a	0.79	
03/05/2016	24-0011	<i>Betula lenta</i>	4	Alive	40	n/a	0.09	
03/05/2016	24-0003	<i>Quercus velutina</i>	11	Alive	70	n/a	0.66	
03/05/2016	24-0002	<i>Quercus montana</i>	14	Alive	75	n/a	1.07	
03/05/2016	24-0001	<i>Quercus coccinea</i>	14	Alive	80	n/a	1.07	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County Montgomery

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 20 Plot ID: 25 Percent Slope: 15 Trees Per Acre: 201.24 Site Index: 86

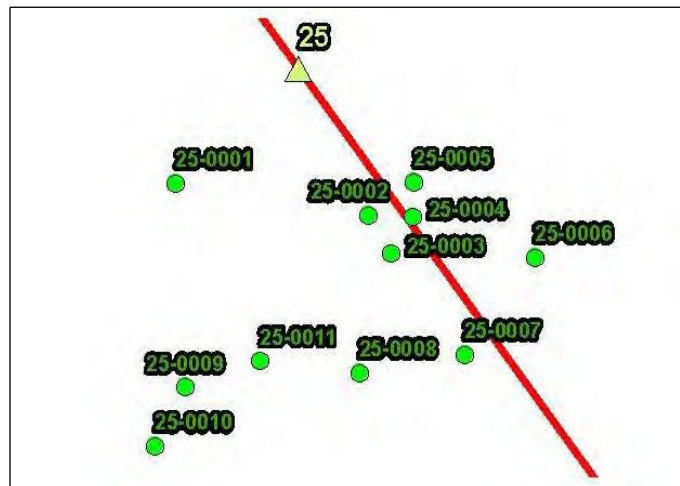
Comments: _____

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/05/2016	25-0009	<i>Liriodendron tulipifera</i>	8	Alive	80	n/a	0.35	
03/05/2016	25-0010	<i>Liriodendron tulipifera</i>	11	Alive	85	n/a	0.66	
03/05/2016	25-0008	<i>Quercus coccinea</i>	9	Alive	80	n/a	0.44	
03/05/2016	25-0007	<i>Liriodendron tulipifera</i>	13	Alive	95	n/a	0.92	
03/05/2016	25-0006	<i>Liriodendron tulipifera</i>	9	Alive	90	n/a	0.44	
03/05/2016	25-0005	<i>Liriodendron tulipifera</i>	8	Alive	70	n/a	0.35	
03/05/2016	25-0004	<i>Liriodendron tulipifera</i>	11	Alive	90	n/a	0.66	
03/05/2016	25-0003	<i>Carya glabra</i>	8	Alive	70	n/a	0.35	
03/05/2016	25-0002	<i>Quercus montana</i>	12	Alive	75	n/a	0.79	
03/05/2016	25-0001	<i>Liriodendron tulipifera</i>	10	Alive	80	40	0.55	Core Sample Taken
03/05/2016	25-0011	<i>Quercus coccinea</i>	11	Alive	85	n/a	0.66	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County Montgomery

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 21 Plot ID: 26 Percent Slope: 2 Trees Per Acre: 208.59 Site Index: 61 - 76

Comments: _____

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/05/2016	26-0010	<i>Quercus coccinea</i>	10	Dead	50	n/a	0.55	Snag
03/05/2016	26-0009	<i>Quercus coccinea</i>	5	Alive	45	n/a	0.14	
03/05/2016	26-0008	<i>Quercus coccinea</i>	12	Alive	85	n/a	0.79	
03/05/2016	26-0007	<i>Pinus strobus</i>	15	Alive	85	n/a	1.23	
03/05/2016	26-0006	<i>Liriodendron tulipifera</i>	8	Alive	70	n/a	0.35	
03/05/2016	26-0005	<i>Liriodendron tulipifera</i>	10	Alive	80	n/a	0.55	
03/05/2016	26-0004	<i>Liriodendron tulipifera</i>	7	Alive	70	n/a	0.27	
03/05/2016	26-0003	<i>Quercus coccinea</i>	11	Alive	75	n/a	0.66	
03/05/2016	26-0002	<i>Quercus coccinea</i>	10	Alive	70	43	0.55	Core Sample Taken
03/05/2016	26-0001	<i>Pinus strobus</i>	11	Alive	75	35	0.66	Core Sample Taken

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County Montgomery

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 22 Plot ID: 27 Percent Slope: 2 Trees Per Acre: 222.00 Site Index: 70

Comments: Core taken: plot moved to centerline flagging

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/06/2016	27-0016	<i>Pinus strobus</i>	21	Alive	100	n/a	2.41	
03/06/2016	27-0011	<i>Pinus strobus</i>	11	Alive	60	n/a	0.66	
03/06/2016	27-0013	<i>Pinus strobus</i>	10	Alive	50	n/a	0.55	
03/06/2016	27-0010	<i>Pinus strobus</i>	6	Alive	45	n/a	0.20	
03/06/2016	27-0009	<i>Pinus strobus</i>	18	Alive	90	n/a	1.77	
03/06/2016	27-0008	<i>Quercus coccinea</i>	14	Alive	90	n/a	1.07	
03/06/2016	27-0007	<i>Liriodendron tulipifera</i>	13	Alive	90	n/a	0.92	
03/06/2016	27-0006	<i>Quercus coccinea</i>	11	Alive	60	n/a	0.66	
03/06/2016	27-0015	<i>Quercus coccinea</i>	18	Alive	70	n/a	1.77	
03/06/2016	27-0005	<i>Pinus strobus</i>	18	Alive	70	n/a	1.77	
03/06/2016	27-0004	<i>Quercus alba</i>	8	Alive	55	n/a	0.35	
03/06/2016	27-0003	<i>Pinus strobus</i>	22	Alive	100	n/a	2.64	
03/06/2016	27-0002	<i>Quercus coccinea</i>	21	Alive	90	n/a	2.41	
03/06/2016	27-0014	<i>Pinus virginiana</i>	9	Dead	50	n/a	0.44	Snag
03/06/2016	27-0012	<i>Pinus strobus</i>	8	Alive	50	n/a	0.35	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County Montgomery

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 23 Plot ID: 28 Percent Slope: 10 Trees Per Acre: 296.51 Site Index: n/a

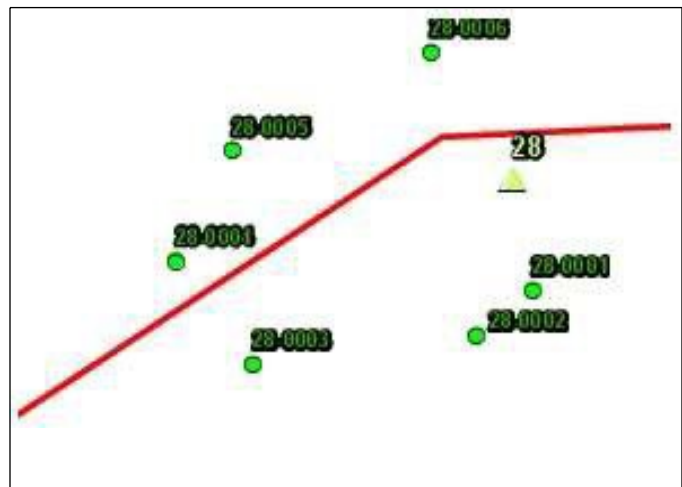
Comments: Moved to centerline flagging

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/06/2016	28-0006	<i>Quercus coccinea</i>	18	Alive	65	n/a	1.77	
03/06/2016	28-0005	<i>Quercus alba</i>	7	Alive	40	n/a	0.27	
03/06/2016	28-0004	<i>Quercus coccinea</i>	13	Alive	55	n/a	0.92	
03/06/2016	28-0003	<i>Acer rubrum</i>	3	Dead	25	n/a	0.05	
03/06/2016	28-0002	<i>Quercus coccinea</i>	13	Dead	60	n/a	0.92	
03/06/2016	28-0001	<i>Quercus coccinea</i>	16	Alive	75	n/a	1.40	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County Montgomery

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 23 Plot ID: 29 Percent Slope: 15 Trees Per Acre: 296.51 Site Index: 55

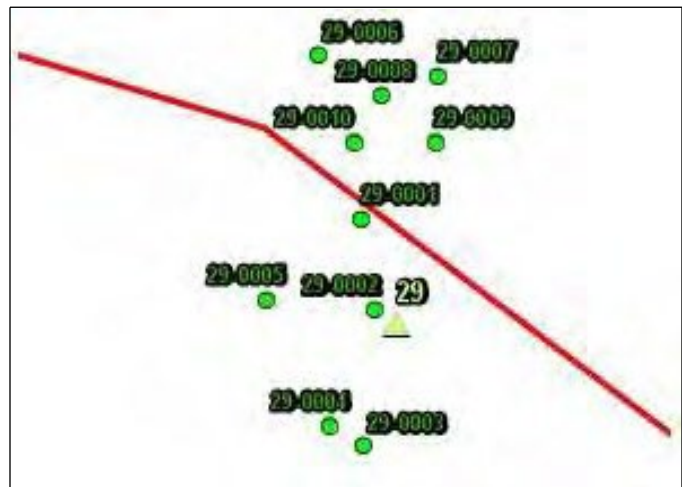
Comments: _____

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/06/2016	29-0006	<i>Quercus coccinea</i>	21	Alive	70	n/a	2.41	
03/06/2016	29-0004	<i>Quercus montana</i>	10	Alive	60	n/a	0.55	
03/06/2016	29-0003	<i>Quercus coccinea</i>	17	Alive	70	n/a	1.58	
03/06/2016	29-0005	<i>Quercus montana</i>	10	Alive	60	n/a	0.55	
03/06/2016	29-0002	<i>Quercus montana</i>	9	Alive	35	n/a	0.44	
03/06/2016	29-0001	<i>Quercus coccinea</i>	19	Alive	70	81	1.97	Core Sample Taken
03/06/2016	29-0010	<i>Quercus montana</i>	7	Alive	50	n/a	0.27	
03/06/2016	29-0009	<i>Quercus coccinea</i>	18	Alive	70	n/a	1.77	
03/06/2016	29-0008	<i>Quercus coccinea</i>	12	Alive	65	n/a	0.79	
03/06/2016	29-0007	<i>Quercus coccinea</i>	17	Alive	80	n/a	1.58	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County Montgomery
 Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert
 Stand ID: 24 Plot ID: 30 Percent Slope: 2 Trees Per Acre: 588.89 Site Index: <30

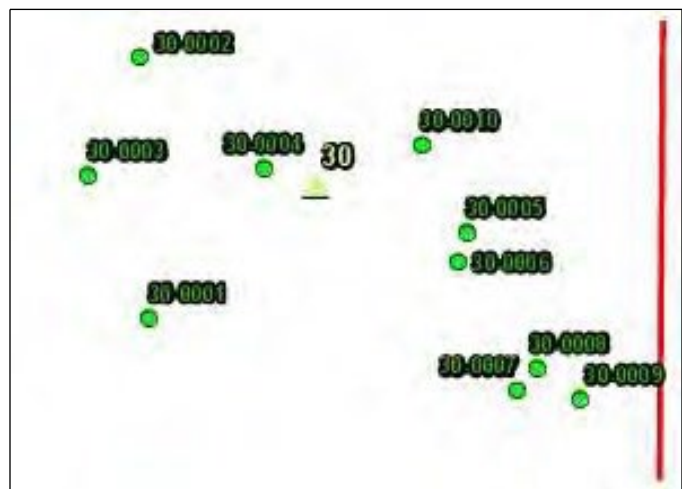
Comments: Moved to where flagging occurs

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/06/2016	30-0007	<i>Quercus montana</i>	7	Alive	30	n/a	0.27	
03/06/2016	30-0005	<i>Quercus montana</i>	8	Alive	30	75	0.35	Core Sample Taken
03/06/2016	30-0004	<i>Quercus montana</i>	4	Alive	25	n/a	0.09	
03/06/2016	30-0003	<i>Quercus montana</i>	5	Alive	25	n/a	0.14	
03/06/2016	30-0002	<i>Quercus montana</i>	6	Alive	25	n/a	0.20	
03/06/2016	30-0001	<i>Pinus pungens</i>	7	Alive	25	n/a	0.27	
03/06/2016	30-0006	<i>Quercus montana</i>	7	Alive	30	n/a	0.27	
03/06/2016	30-0010	<i>Quercus montana</i>	4	Alive	20	n/a	0.09	
03/06/2016	30-0009	<i>Quercus coccinea</i>	7	Alive	35	n/a	0.27	
03/06/2016	30-0008	<i>Quercus montana</i>	4	Alive	15	n/a	0.09	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County Montgomery

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 25 Plot ID: 31 Percent Slope: 15 Trees Per Acre: 422.65 Site Index: n/a

Comments: No cores taken; similar stand conditions to plot 34

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/06/2016	31-0009	<i>Nyssa sylvatica</i>	4	Alive	15	n/a	0.09	
03/06/2016	31-0008	<i>Pinus pungens</i>	8	Alive	40	n/a	0.35	
03/06/2016	31-0007	<i>Pinus pungens</i>	12	Alive	50	n/a	0.79	
03/06/2016	31-0006	<i>Pinus pungens</i>	13	Alive	50	n/a	0.92	
03/06/2016	31-0005	<i>Pinus pungens</i>	5	Alive	30	n/a	0.14	
03/06/2016	31-0004	<i>Quercus coccinea</i>	8	Alive	50	n/a	0.35	
03/06/2016	31-0003	<i>Quercus coccinea</i>	9	Alive	50	n/a	0.44	
03/06/2016	31-0016	<i>Quercus montana</i>	10	Alive	50	n/a	0.55	
03/06/2016	31-0015	<i>Quercus montana</i>	10	Alive	50	n/a	0.55	
03/06/2016	31-0014	<i>Quercus montana</i>	11	Alive	50	n/a	0.66	
03/06/2016	31-0002	<i>Pinus pungens</i>	11	Alive	45	n/a	0.66	
03/06/2016	31-0013	<i>Quercus montana</i>	11	Alive	50	n/a	0.66	
03/06/2016	31-0011	<i>Pinus pungens</i>	10	Alive	50	n/a	0.55	
03/06/2016	31-0001	<i>Pinus pungens</i>	11	Alive	40	n/a	0.66	
03/06/2016	31-0012	<i>Pinus pungens</i>	10	Alive	50	n/a	0.55	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County Montgomery

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 25 Plot ID: 32 Percent Slope: 25 Trees Per Acre: 422.65 Site Index: n/a

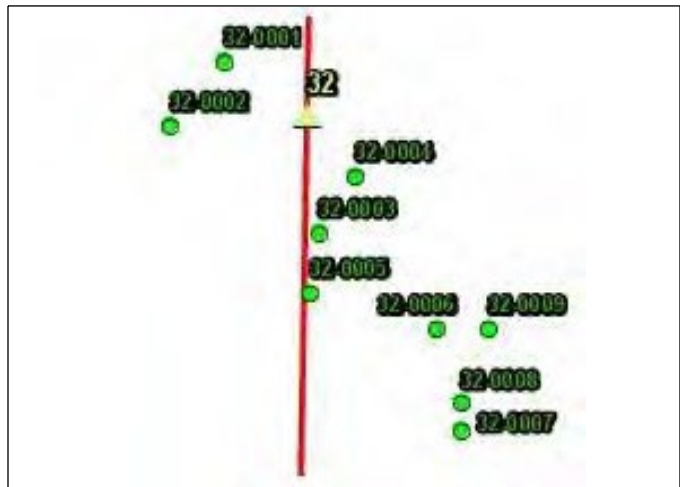
Comments: No cores taken; same stand

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/06/2016	32-0008	<i>Quercus montana</i>	8	Alive	30	n/a	0.35	
03/06/2016	32-0007	<i>Quercus montana</i>	8	Alive	30	n/a	0.35	
03/06/2016	32-0006	<i>Nyssa sylvatica</i>	2	Alive	15	n/a	0.02	
03/06/2016	32-0005	<i>Quercus coccinea</i>	8	Alive	35	n/a	0.35	
03/06/2016	32-0004	<i>Quercus montana</i>	12	Alive	35	n/a	0.79	
03/06/2016	32-0003	<i>Quercus montana</i>	3	Alive	15	n/a	0.05	
03/06/2016	32-0002	<i>Quercus montana</i>	4	Alive	20	n/a	0.09	
03/06/2016	32-0001	<i>Pinus pungens</i>	10	Dead	20	n/a	0.55	Snag
03/06/2016	32-0009	<i>Quercus montana</i>	12	Alive	35	n/a	0.79	

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County Montgomery

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 25 Plot ID: 33 Percent Slope: 30 Trees Per Acre: 422.65 Site Index: n/a

Comments: Plot moved to reflect centerline flagging

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/06/2016	33-0008	<i>Quercus montana</i>	8	Alive	15	n/a	0.35	
03/06/2016	33-0007	<i>Quercus montana</i>	8	Alive	20	n/a	0.35	
03/06/2016	33-0006	<i>Quercus montana</i>	4	Alive	10	n/a	0.09	
03/06/2016	33-0005b	<i>Quercus montana</i>	7	Alive	15	n/a	0.27	
03/06/2016	33-0005a	<i>Quercus montana</i>	6	Alive	15	n/a	0.20	
03/06/2016	33-0004	<i>Quercus montana</i>	7	Alive	25	n/a	0.27	
03/06/2016	33-0003	<i>Quercus montana</i>	11	Alive	25	n/a	0.66	
03/06/2016	33-0002	<i>Pinus pungens</i>	10	Alive	30	n/a	0.55	
03/06/2016	33-0001	<i>Pinus pungens</i>	11	Alive	25	62	0.66	Core Sample Taken

Plot Photo



Tree Location Map





Tree Plot Survey Data

Project Number: 593.02 Project Name: MVP - JNF Tree Survey 2016 State: Virginia County Montgomery

Permitted Staff: Valerie Clarkston Field Technician: Doug Gilbert

Stand ID: 25 Plot ID: 34 Percent Slope: 15 Trees Per Acre: 422.65 Site Index: 40

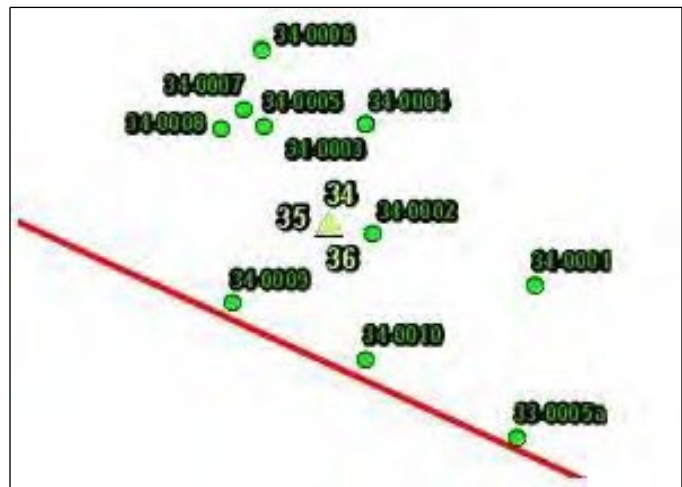
Comments: Moved based on centerline flagging

Date	Tree ID	Tree Species	Tree DBH	Tree Status	Tree Height	Estimated Tree Age	Tree Basal Area (SqFt)	Comments
03/06/2016	34-0009	<i>Quercus montana</i>	16	Alive	50	n/a	1.40	
03/06/2016	34-0008	<i>Quercus montana</i>	7	Alive	30	n/a	0.27	
03/06/2016	34-0007	<i>Quercus montana</i>	5	Alive	25	n/a	0.14	
03/06/2016	34-0006	<i>Quercus montana</i>	19	Alive	55	n/a	1.97	
03/06/2016	34-0005	<i>Quercus montana</i>	14	Alive	55	n/a	1.07	
03/06/2016	34-0004	<i>Quercus montana</i>	11	Alive	50	n/a	0.66	
03/06/2016	34-0003	<i>Quercus montana</i>	9	Alive	20	n/a	0.44	
03/06/2016	34-0002	<i>Quercus montana</i>	10	Alive	50	n/a	0.55	
03/06/2016	34-0001	<i>Quercus montana</i>	11	Alive	50	75	0.66	Core Sample Taken
03/06/2016	34-0010	<i>Pinus pungens</i>	9	Alive	50	n/a	0.44	

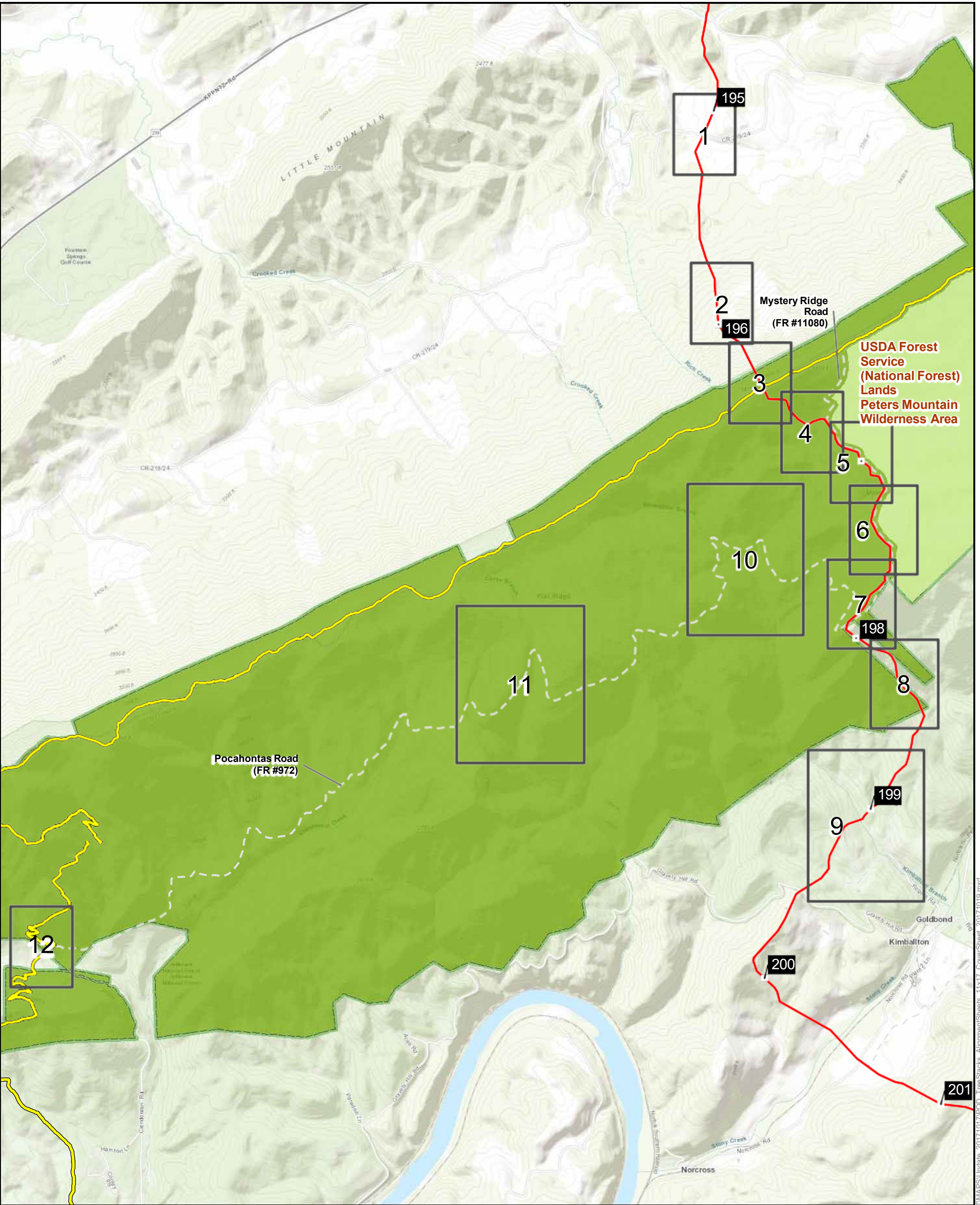
Plot Photo



Tree Location Map

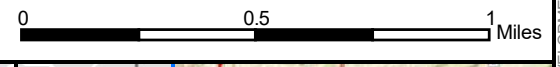


**ATTACHMENT I-2
FIGURES DISPLAYING TIMBER HAULING ROUTES AND LANDING
AREAS**



Mountain Valley Pipeline Project

NAD 1983 UTM 17N 1:26,000

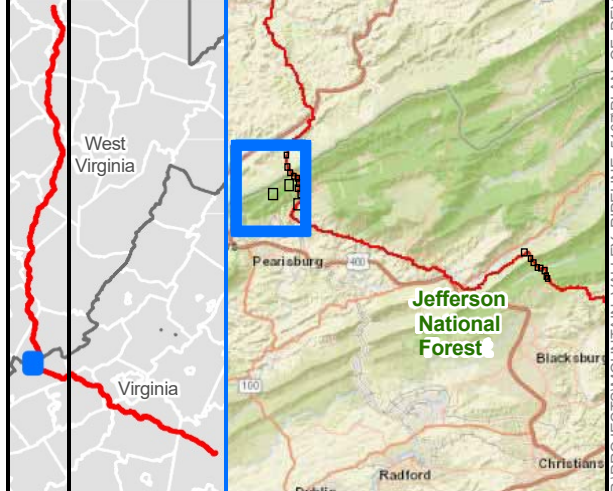


Tree Stack and Access Map Index North

October 2017

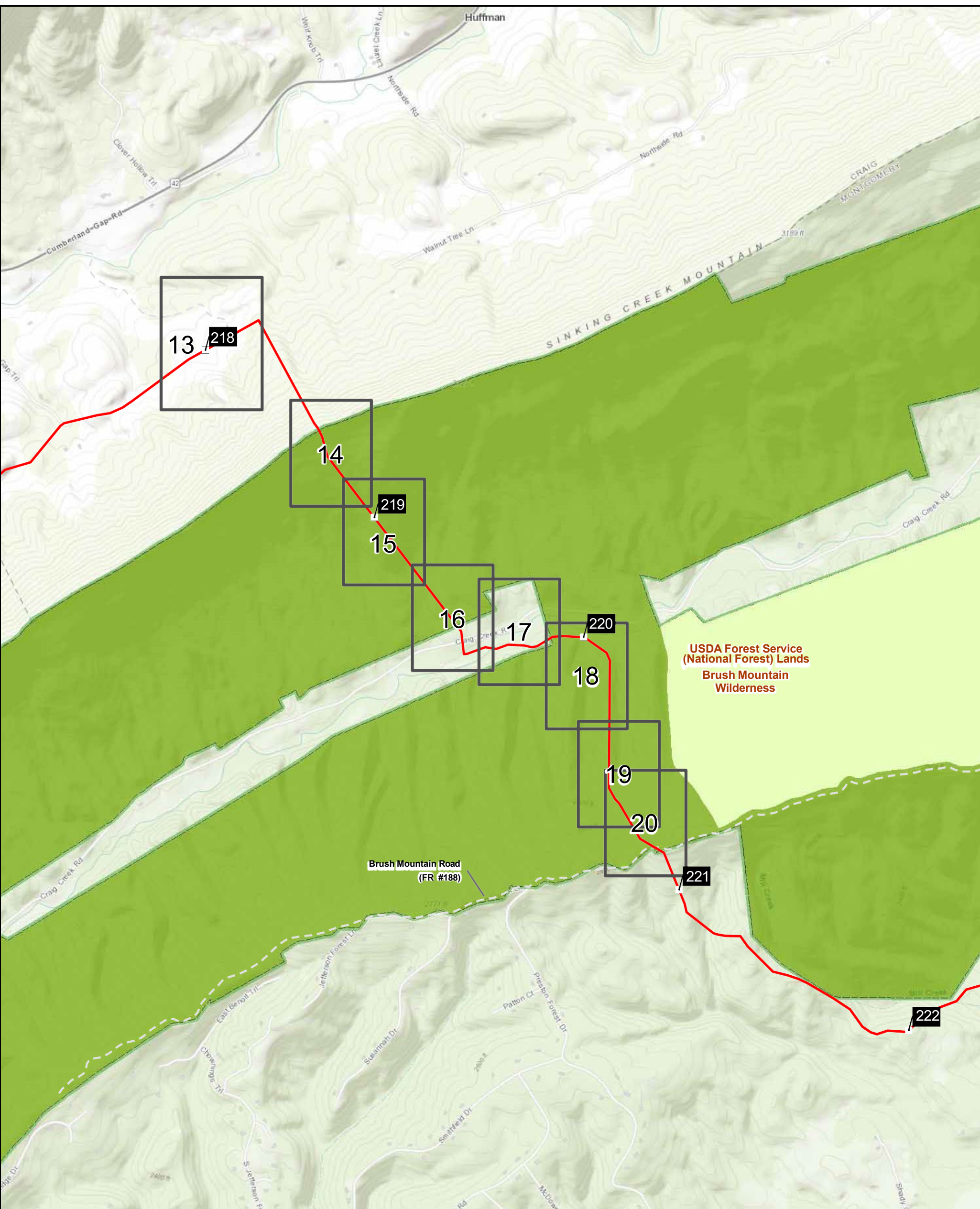
Legend

- Map Sheet Index
- Milepost
- Proposed Route
- Appalachian National Scenic Trail (ANST)
- Road
- Wilderness Area
- USDA Forest Service (National Forest) Lands



Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

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Mountain Valley Pipeline Project

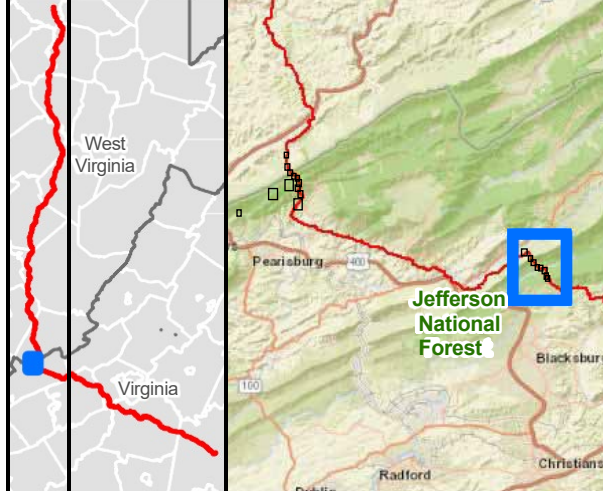
NAD 1983 UTM 17N 1:20,000 0 0.375 0.75 Miles

Tree Stack and Access Map Index South

October 2017

Legend

- Map Sheet Index
- Milepost
- Proposed Route
- Appalachian National Scenic Trail (ANST)
- Road
- Wilderness Area
- USDA Forest Service (National Forest) Lands



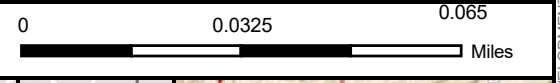
Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

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Mountain Valley Pipeline Project

NAD 1983 UTM 17N 1:1,800



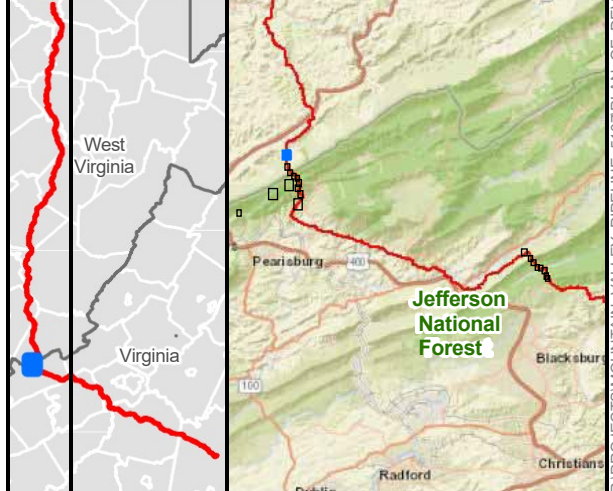
Tree Stack and Access
Page 1 of 20

October 2017

Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

Legend

- Mile
- Tenth-mile
- Proposed Route
- Appalachian National Scenic Trail (ANST)
- 50foot Contour (NED10m)
- 10foot Contour (NED10m)
- Road
- Permanent Impact
- Temporary Impact
- Timber Load-Out Area
- Timber Staging Area
- Access Point



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Mountain Valley Pipeline Project

Tree Stack and Access
Page 2 of 20

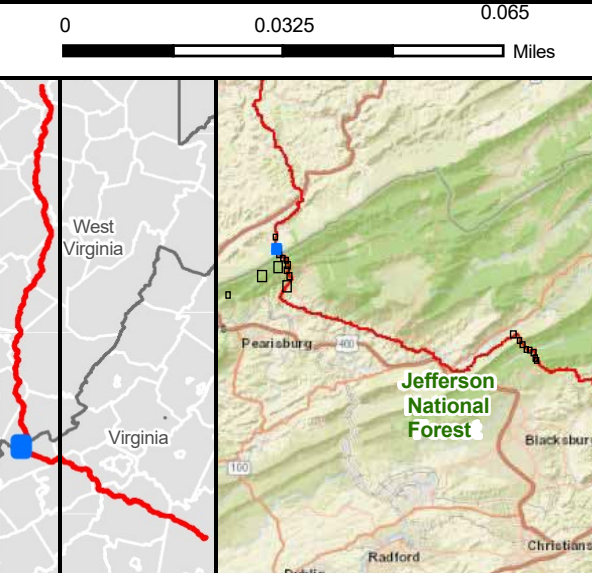
October 2017

Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

NAD 1983 UTM 17N 1:1,800

Legend

- Mile
- Tenth-mile
- Proposed Route
- Appalachian National Scenic Trail (ANST)
- 50foot Contour (NED10m)
- 10foot Contour (NED10m)
- Road
- Permanent Impact
- Temporary Impact
- Timber Load-Out Area
- Timber Staging Area
- Access Point



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Mountain Valley Pipeline Project



Tree Stack and Access
Page 3 of 20

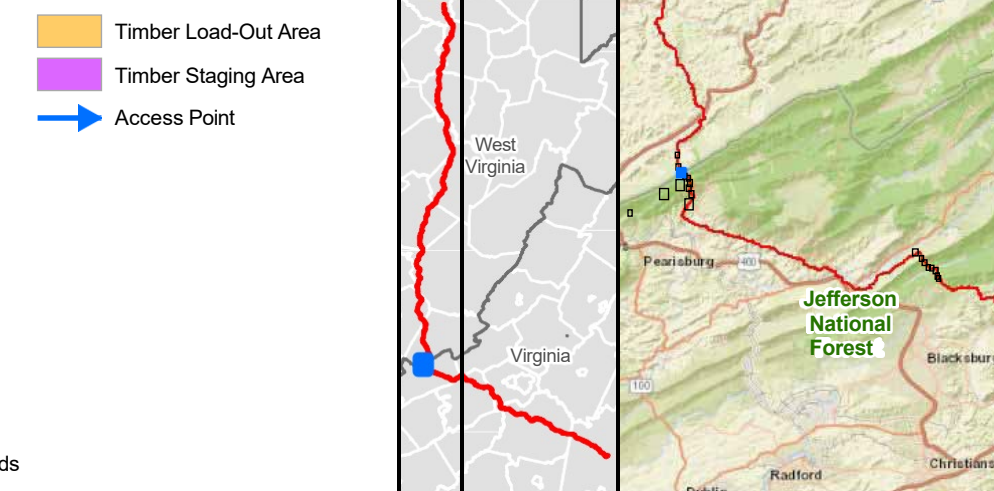
October 2017

Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

NAD 1983 UTM 17N 1:1,800

- Legend**
- Mile
 - Tenth-mile
 - Proposed Route
 - Appalachian National Scenic Trail (ANST)
 - 50foot Contour (NED10m)
 - 10foot Contour (NED10m)
 - Road
 - Permanent Impact
 - Temporary Impact
 - USDA Forest Service (National Forest) Lands
 - Timber Load-Out Area
 - Timber Staging Area
 - Access Point

0 0.0325 0.065 Miles



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Mountain Valley Pipeline Project

Tree Stack and Access
Page 4 of 20

October 2017

Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

NAD 1983 UTM 17N 1:1,800

Legend

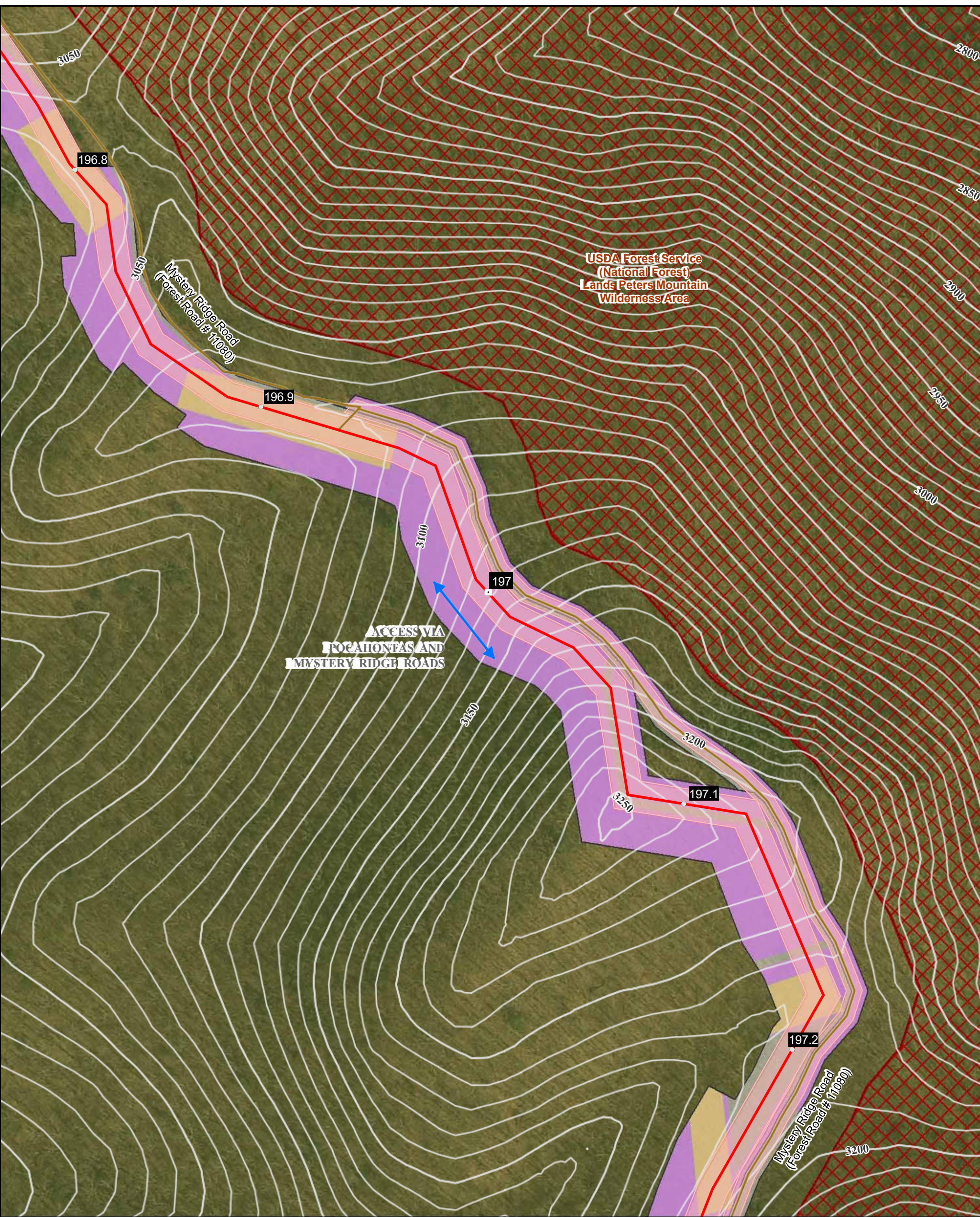
- Mile
- Tenth-mile
- Proposed Route
- Appalachian National Scenic Trail (ANST)
- 50foot Contour (NED10m)
- 10foot Contour (NED10m)
- Road
- Permanent Impact
- Temporary Impact
- USDA Forest Service (National Forest) Lands

0 0.0325 0.065 Miles

- Peters Mountain Wilderness
- Timber Load-Out Area
- Timber Staging Area
- Access Point

West Virginia
Virginia
Jefferson National Forest
Pearisburg
Blacksville
Radford
Christiansburg

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Mountain Valley Pipeline Project

Tree Stack and Access
Page 5 of 20

October 2017

Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

NAD 1983 UTM 17N 1:1,800

Legend

- Mile
- Tenth-mile
- Proposed Route
- Appalachian National Scenic Trail (ANST)
- 50foot Contour (NED10m)
- 10foot Contour (NED10m)
- Road
- Permanent Impact
- Temporary Impact
- USDA Forest Service (National Forest) Lands

0 0.0325 0.065 Miles

- Peters Mountain Wilderness
- Timber Load-Out Area
- Timber Staging Area
- Access Point

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Mountain Valley Pipeline Project

Tree Stack and Access
Page 6 of 20

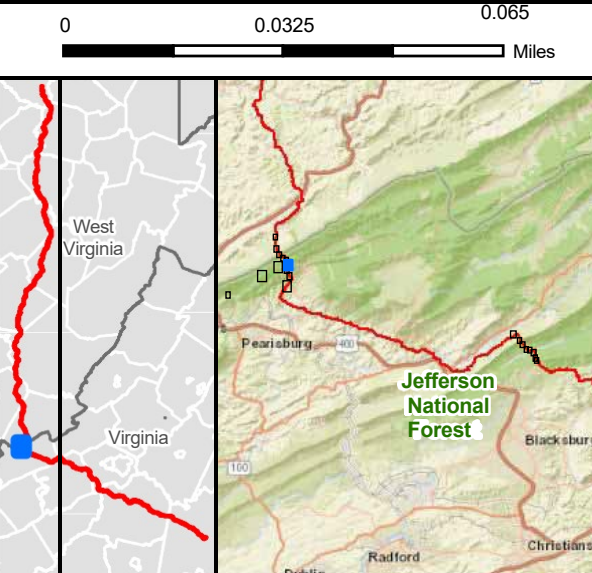
October 2017

Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

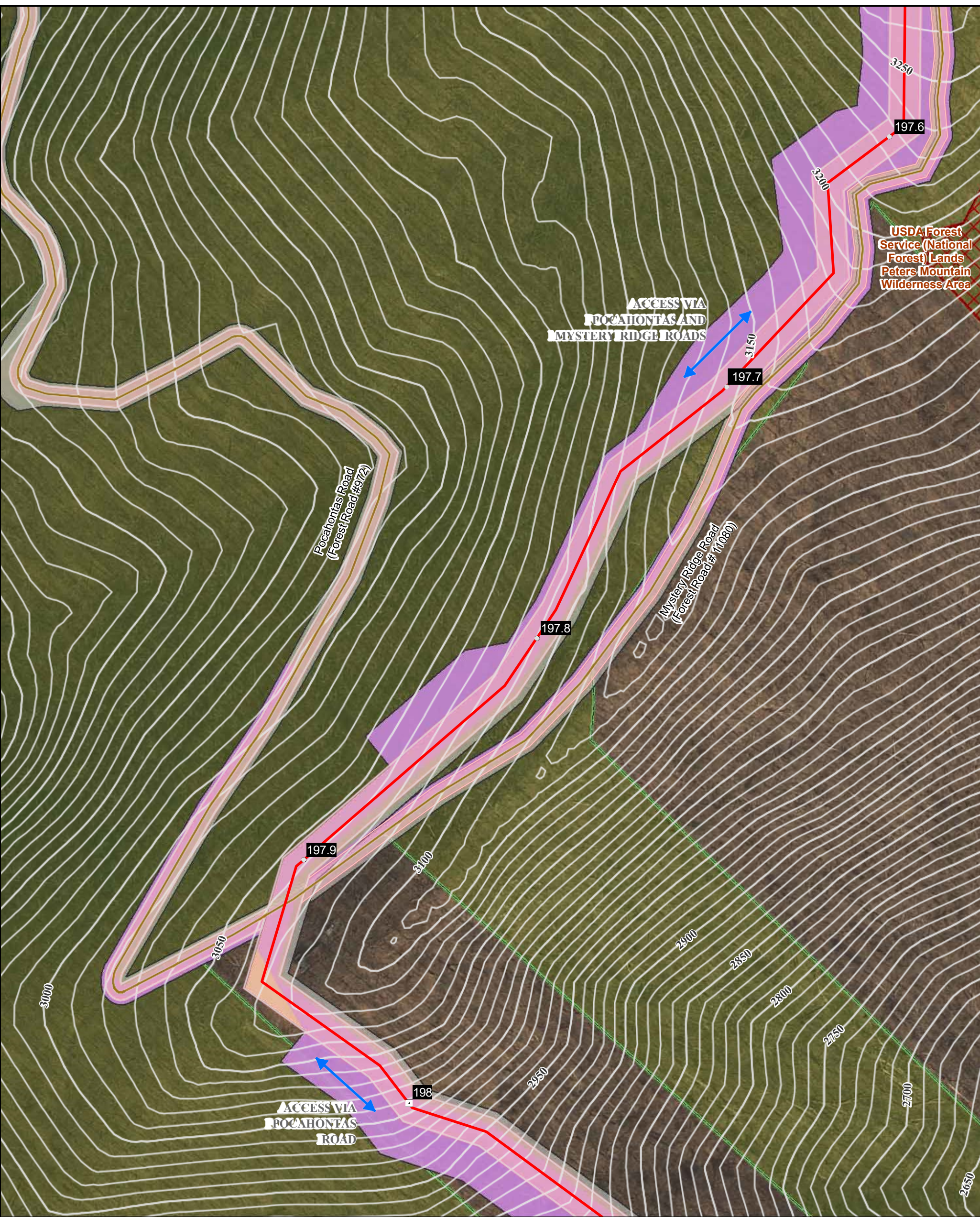
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Legend

- Mile
- Tenth-mile
- Proposed Route
- Appalachian National Scenic Trail (ANST)
- 50foot Contour (NED10m)
- 10foot Contour (NED10m)
- Road
- Permanent Impact
- Temporary Impact
- USDA Forest Service (National Forest) Lands
- Peters Mountain Wilderness
- Timber Load-Out Area
- Timber Staging Area
- Access Point



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Mountain Valley Pipeline Project

Tree Stack and Access
Page 7 of 20

October 2017

Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

NAD 1983 UTM 17N 1:1,800

0 0.0325 0.065 Miles

Legend	
	Mile
	Tenth-mile
	Proposed Route
	Appalachian National Scenic Trail (ANST)
	50foot Contour (NED10m)
	10foot Contour (NED10m)
	Road
	Permanent Impact
	Temporary Impact
	USDA Forest Service (National Forest) Lands
	Peters Mountain Wilderness
	Timber Load-Out Area
	Timber Staging Area
	Access Point

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Mountain Valley Pipeline Project

Tree Stack and Access
Page 8 of 20

October 2017

Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

NAD 1983 UTM 17N 1:1,800

Legend

- Mile
- Tenth-mile
- Proposed Route
- Appalachian National Scenic Trail (ANST)
- 50foot Contour (NED10m)
- 10foot Contour (NED10m)
- Road
- Permanent Impact
- Temporary Impact
- USDA Forest Service (National Forest) Lands
- Timber Load-Out Area
- Timber Staging Area
- Access Point

0 0.0325 0.065 Miles

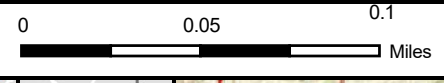
West Virginia
Virginia
Pearisburg
Jefferson National Forest
Radford
Christiansburg

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Mountain Valley Pipeline Project

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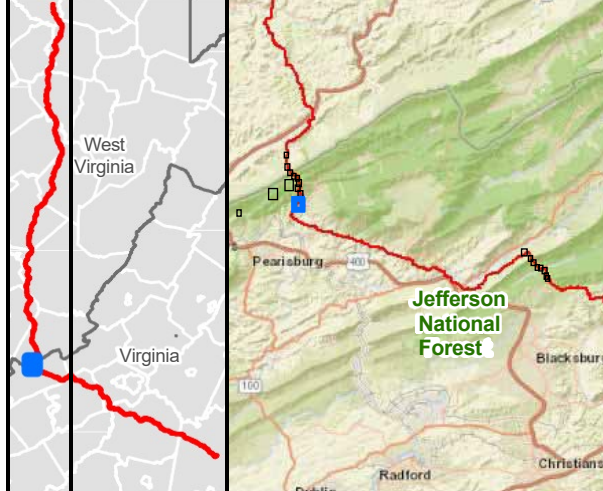


Tree Stack and Access
Page 9 of 20

October 2017

Legend

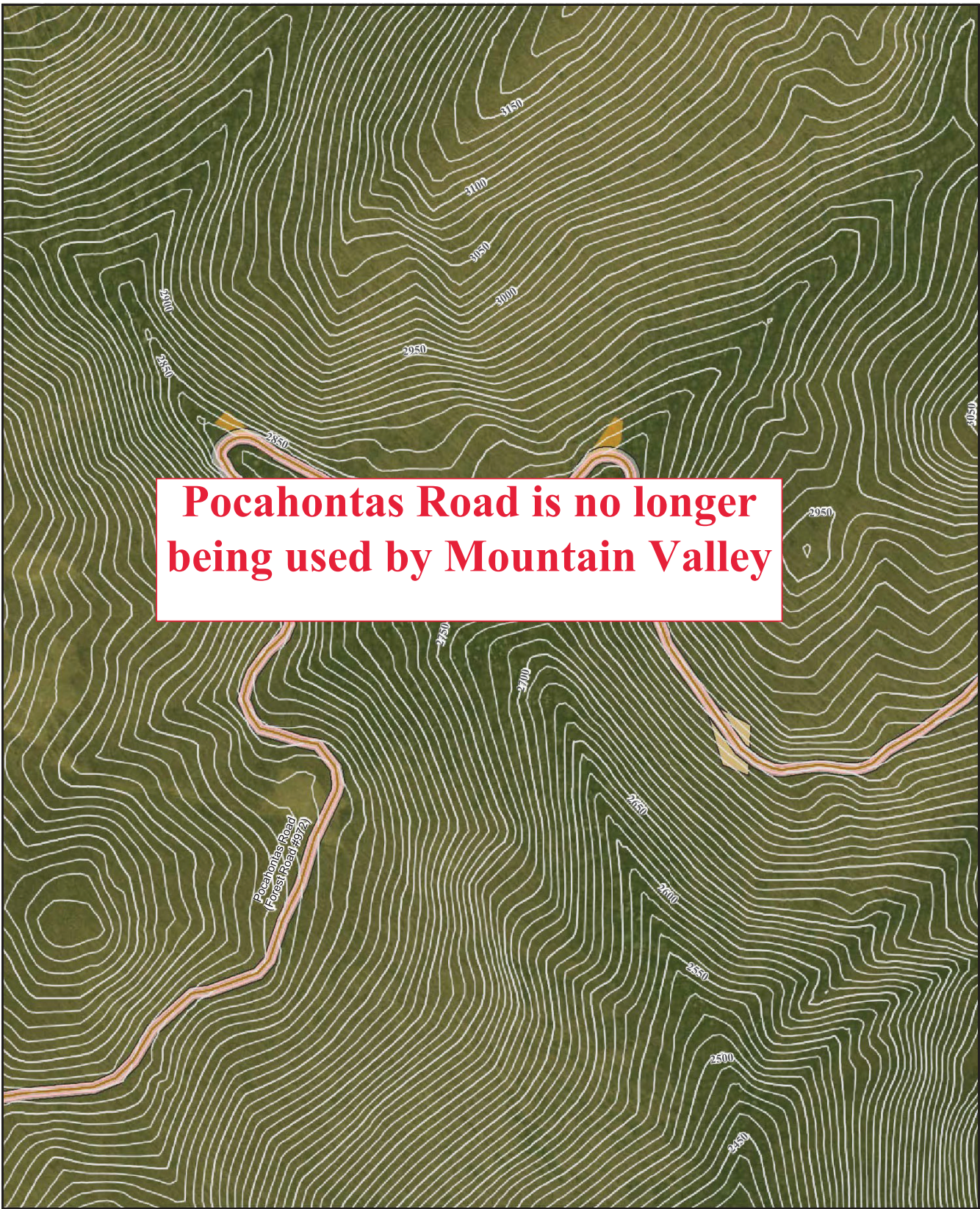
- Mile
- Tenth-mile
- Proposed Route
- Appalachian National Scenic Trail (ANST)
- 50foot Contour (NED10m)
- 10foot Contour (NED10m)
- Road
- Permanent Impact
- Temporary Impact
- USDA Forest Service (National Forest) Lands
- Timber Load-Out Area
- Timber Staging Area
- Access Point



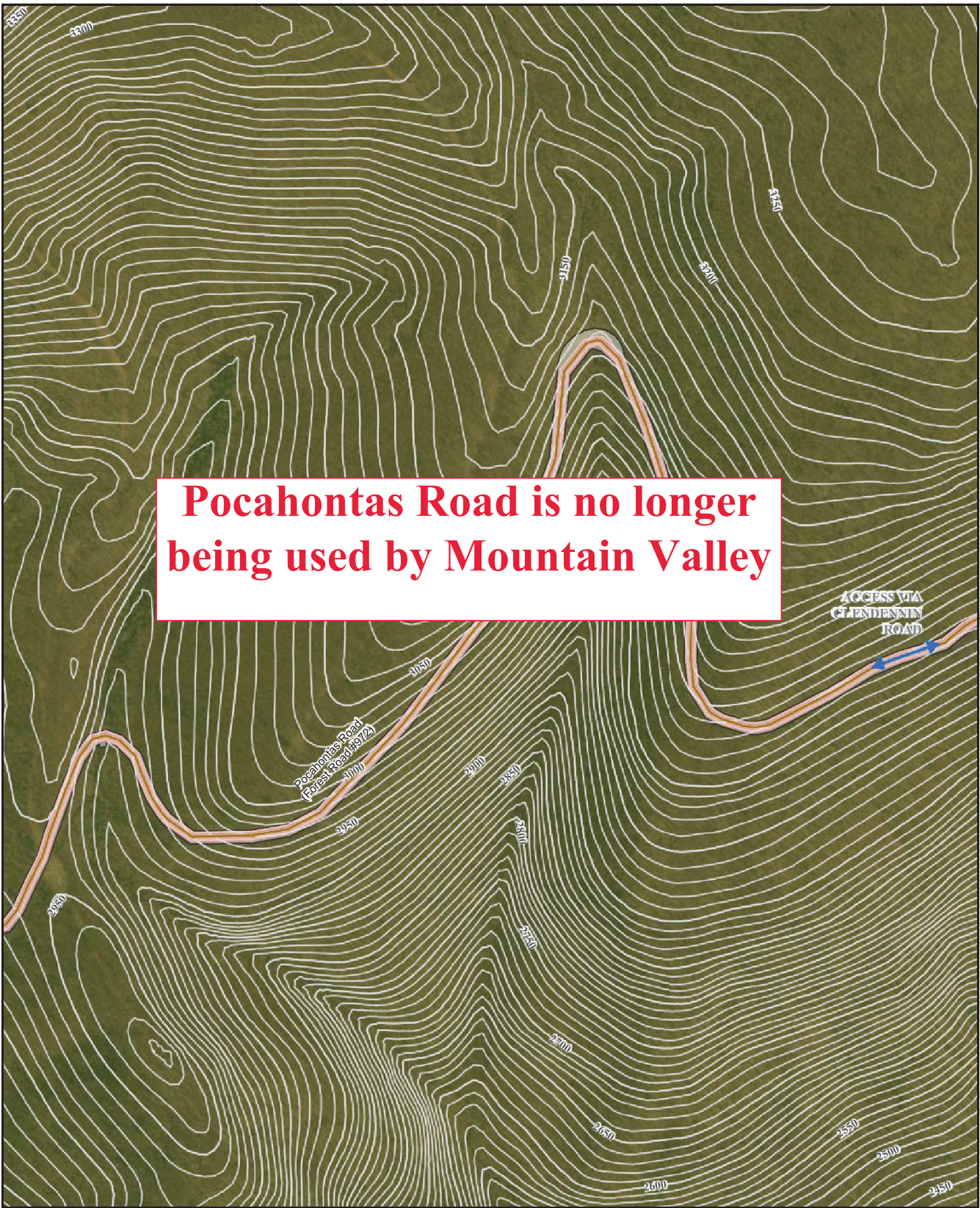
Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

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Pocahontas Road is no longer being used by Mountain Valley



Mountain Valley Pipeline Project		NAD 1983 UTM 17N 1:3,400	0 0.05 0.1 Miles
<p>Tree Stack and Access Page 10 of 20</p> <p>October 2017</p>	Legend		
	<ul style="list-style-type: none"> Mile Tenth-mile Proposed Route Appalachian National Scenic Trail (ANST) 50foot Contour (NED10m) 10foot Contour (NED10m) Road Permanent Impact Temporary Impact USDA Forest Service (National Forest) Lands 	<ul style="list-style-type: none"> Timber Load-Out Area Timber Staging Area Access Point 	
Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.			



Pocahontas Road is no longer being used by Mountain Valley

Mountain Valley Pipeline Project

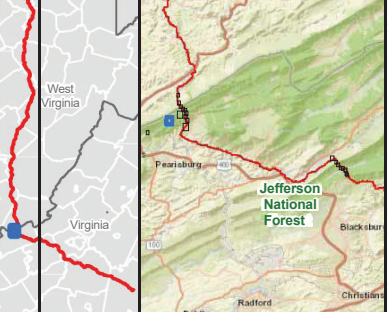
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Tree Stack and Access
Page 11 of 20

October 2017

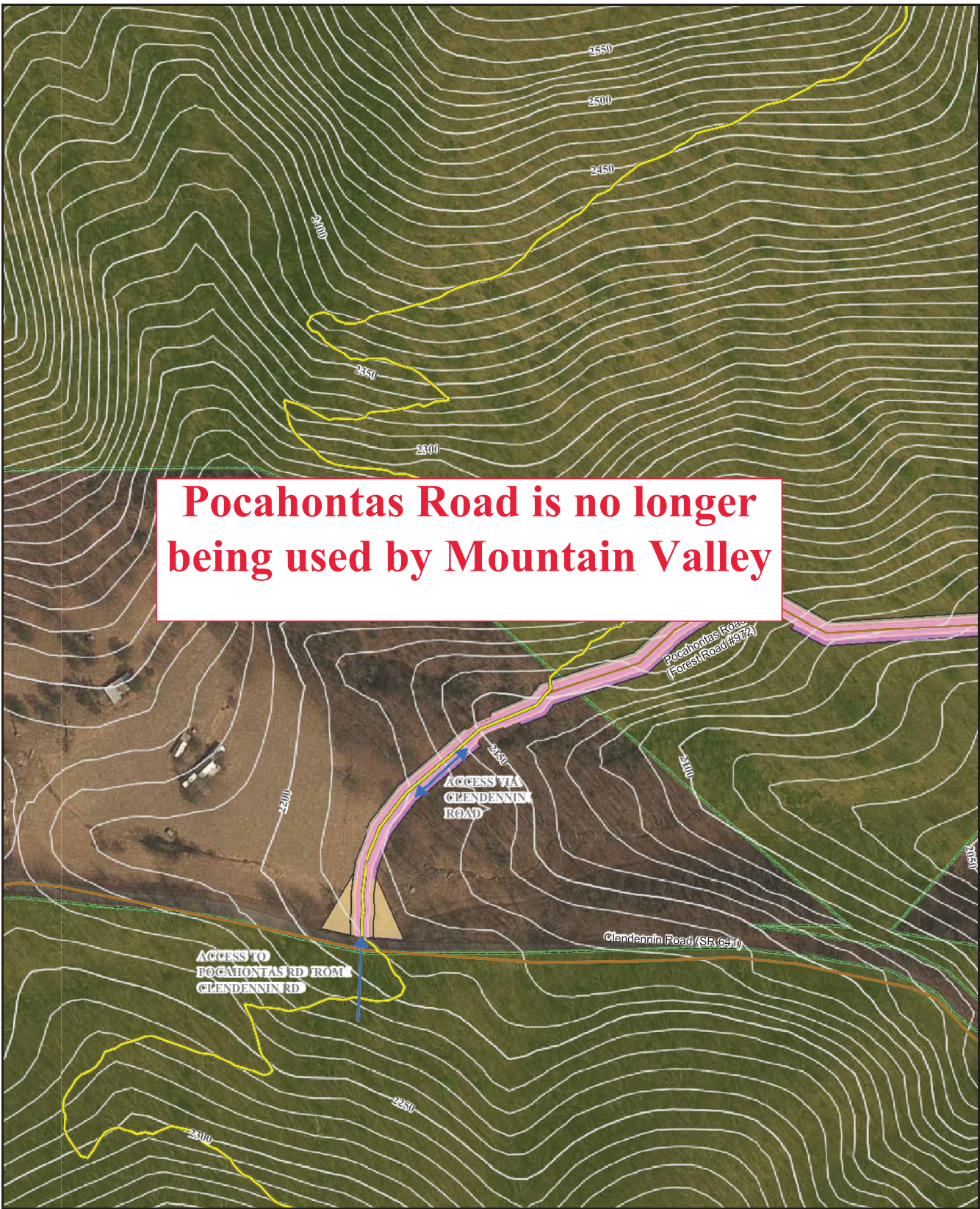
- Legend**
- Mile
 - Tenth-mile
 - Proposed Route
 - Appalachian National Scenic Trail (ANST)
 - 50foot Contour (NED10m)
 - 10foot Contour (NED10m)
 - Road
 - Permanent Impact
 - Temporary Impact
 - USDA Forest Service (National Forest) Lands
 - Timber Load-Out Area
 - Timber Staging Area
 - Access Point



Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

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Pocahontas Road is no longer being used by Mountain Valley



Mountain Valley Pipeline Project

NAD 1983 UTM 17N 1:1,800

0 0.0325 0.065 Miles

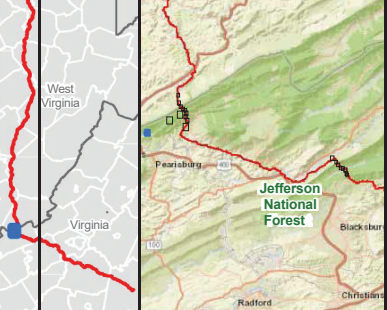


Tree Stack and Access
Page 12 of 20

October 2017

Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

- Legend**
- Mile
 - Tenth-mile
 - Proposed Route
 - Appalachian National Scenic Trail (ANST)
 - 50foot Contour (NED10m)
 - 10foot Contour (NED10m)
 - Road
 - Permanent Impact
 - Temporary Impact
 - USDA Forest Service (National Forest) Lands
 - Timber Load-Out Area
 - Timber Staging Area
 - Access Point





Mountain Valley Pipeline Project

Tree Stack and Access
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October 2017

Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

NAD 1983 UTM 17N 1:2,200

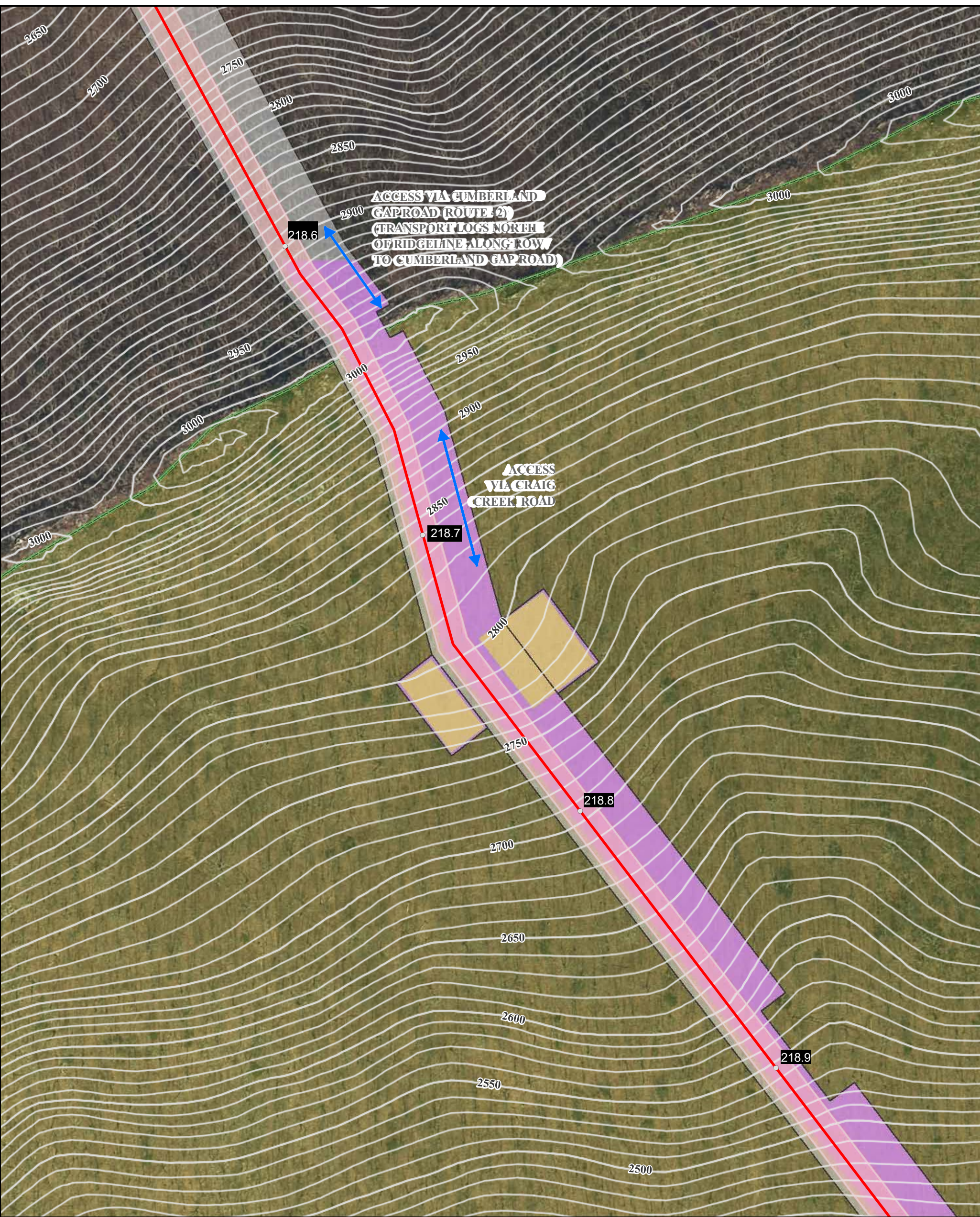
Legend

- Mile
- Tenth-mile
- Proposed Route
- Appalachian National Scenic Trail (ANST)
- 50foot Contour (NED10m)
- 10foot Contour (NED10m)
- Road
- Permanent Impact
- Temporary Impact

0 0.0425 0.085 Miles

- Timber Load-Out Area
- Timber Staging Area
- Access Point

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Mountain Valley Pipeline Project

Tree Stack and Access
Page 14 of 20

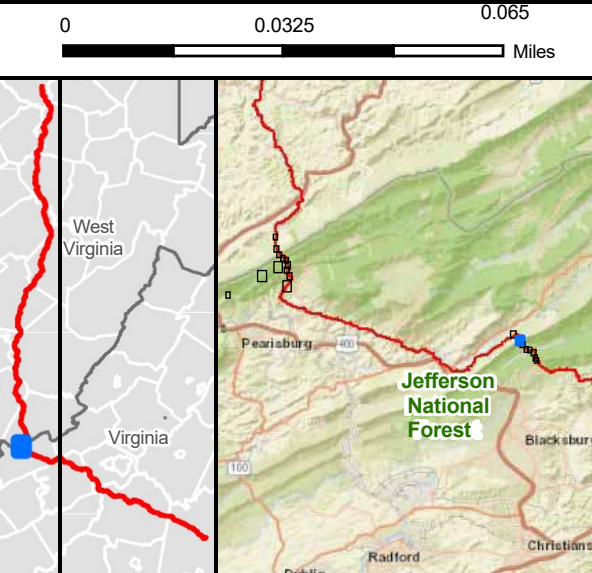
October 2017

Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

NAD 1983 UTM 17N 1:1,800

Legend

- Mile
- Tenth-mile
- Proposed Route
- Appalachian National Scenic Trail (ANST)
- 50foot Contour (NED10m)
- 10foot Contour (NED10m)
- Road
- Permanent Impact
- Temporary Impact
- USDA Forest Service (National Forest) Lands
- Timber Load-Out Area
- Timber Staging Area
- Access Point



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Mountain Valley Pipeline Project

Tree Stack and Access
Page 15 of 20

October 2017

Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

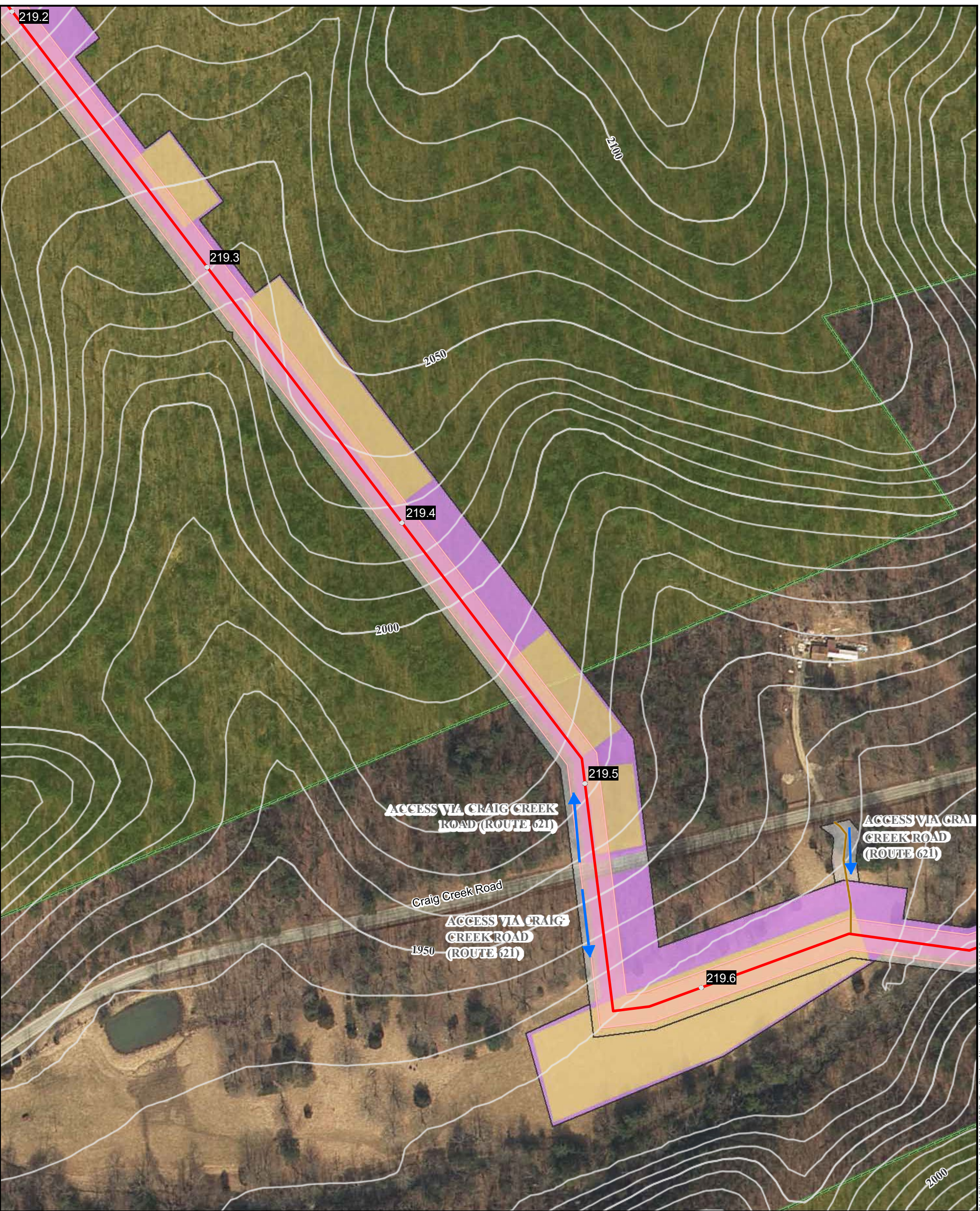
NAD 1983 UTM 17N 1:1,800

0 0.0325 0.065 Miles

Legend

- Mile
- Tenth-mile
- Proposed Route
- Appalachian National Scenic Trail (ANST)
- 50foot Contour (NED10m)
- 10foot Contour (NED10m)
- Road
- Permanent Impact
- Temporary Impact
- USDA Forest Service (National Forest) Lands
- Timber Load-Out Area
- Timber Staging Area
- Access Point

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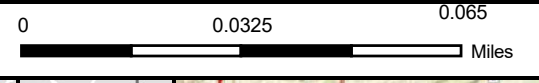
Mountain Valley Pipeline Project

Tree Stack and Access
Page 16 of 20

October 2017

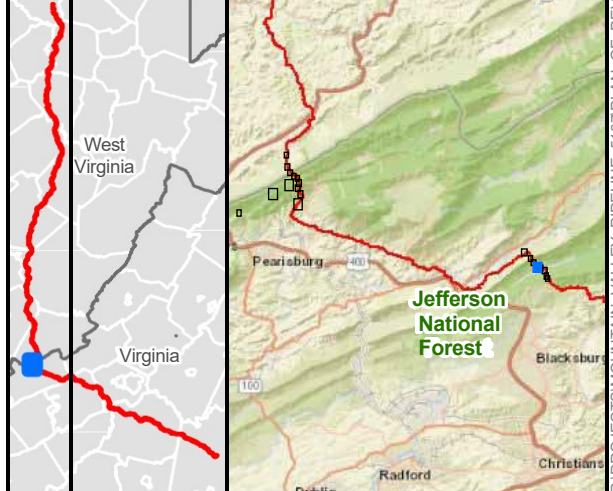
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NAD 1983 UTM 17N 1:1,800

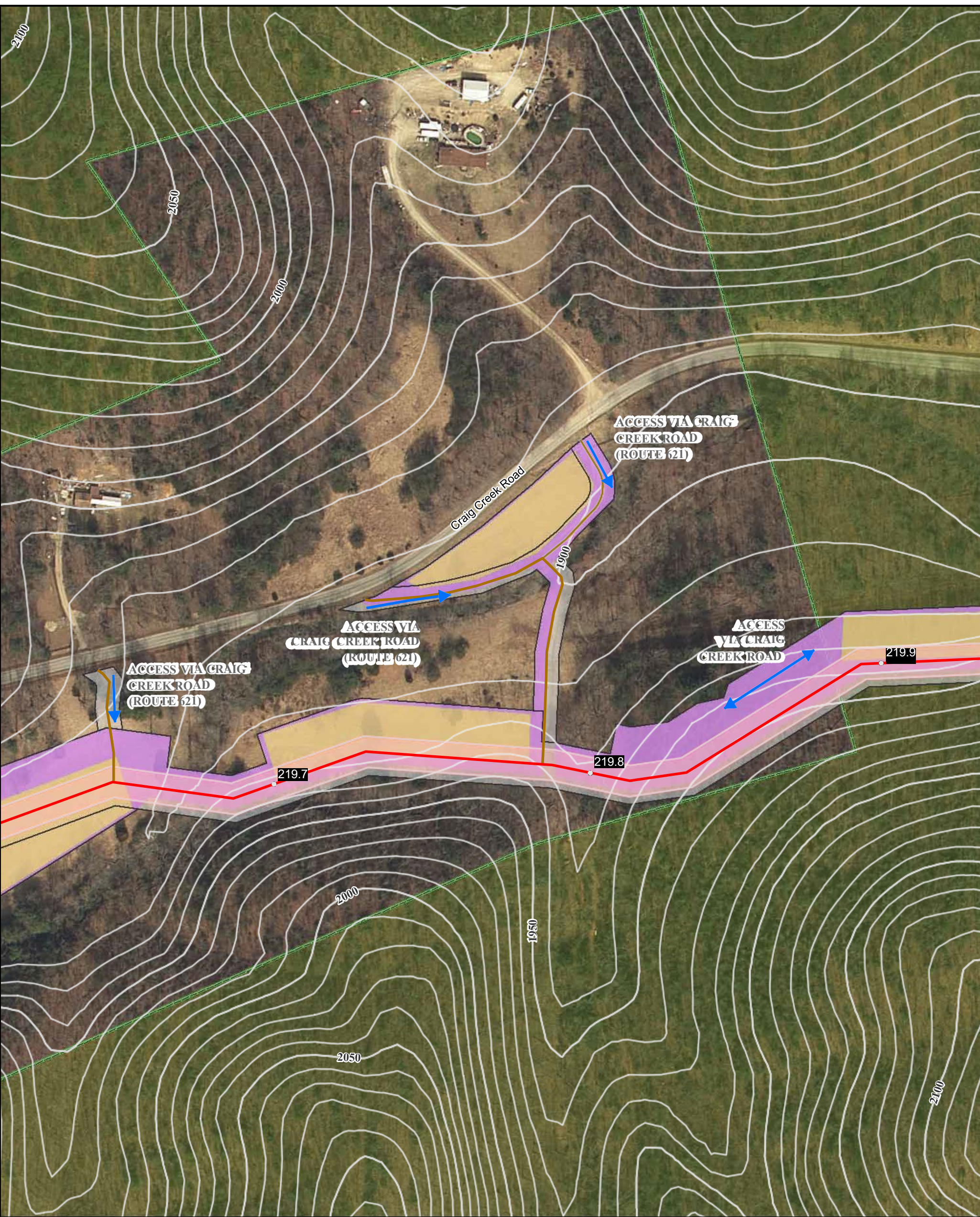


Legend

- Mile
- Tenth-mile
- Proposed Route
- Appalachian National Scenic Trail (ANST)
- 50foot Contour (NED10m)
- 10foot Contour (NED10m)
- Road
- Permanent Impact
- Temporary Impact
- USDA Forest Service (National Forest) Lands
- Timber Load-Out Area
- Timber Staging Area
- Access Point

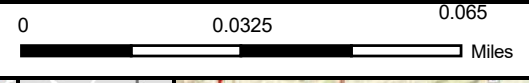


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Mountain Valley Pipeline Project

NAD 1983 UTM 17N 1:1,800

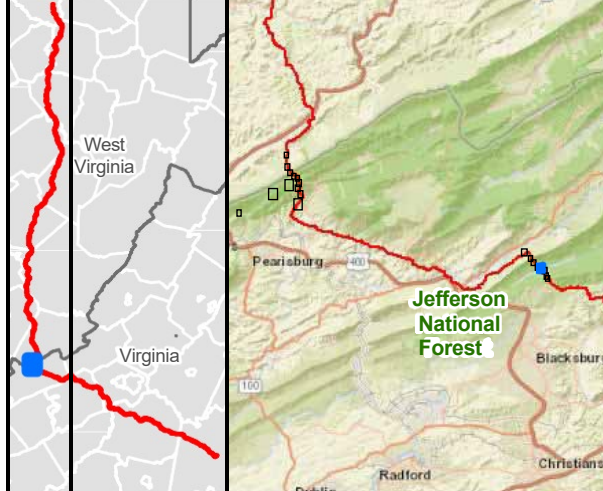


Tree Stack and Access
Page 17 of 20

October 2017

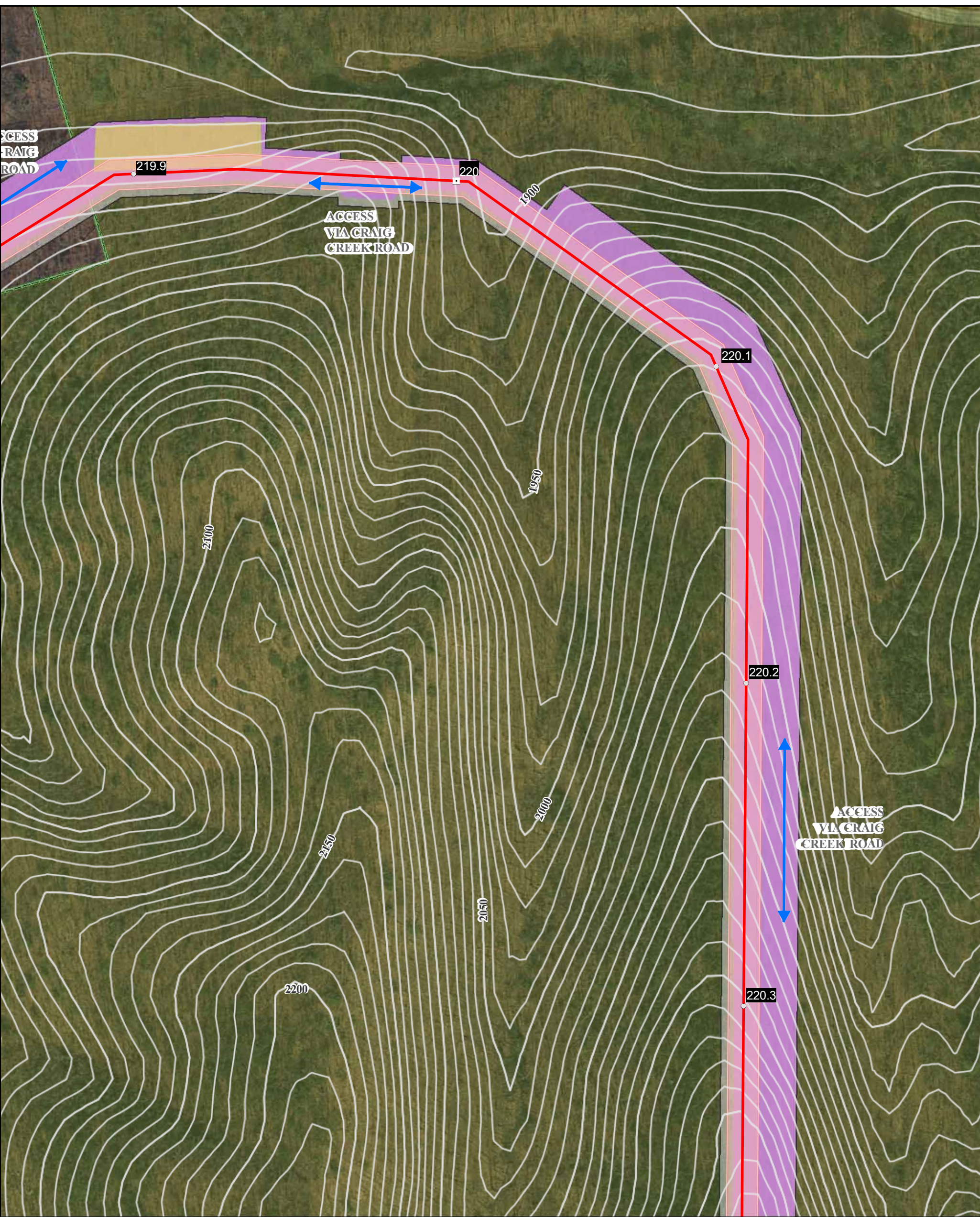
Legend

- Mile
- Tenth-mile
- Proposed Route
- Appalachian National Scenic Trail (ANST)
- 50foot Contour (NED10m)
- 10foot Contour (NED10m)
- Road
- Permanent Impact
- Temporary Impact
- USDA Forest Service (National Forest) Lands
- Timber Load-Out Area
- Timber Staging Area
- Access Point



Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

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Mountain Valley Pipeline Project

Tree Stack and Access
Page 18 of 20

October 2017

Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

NAD 1983 UTM 17N 1:1,800

0 0.0325 0.065 Miles

Legend

- Mile
- Tenth-mile
- Proposed Route
- Appalachian National Scenic Trail (ANST)
- 50foot Contour (NED10m)
- 10foot Contour (NED10m)
- Road
- Permanent Impact
- Temporary Impact
- USDA Forest Service (National Forest) Lands
- Timber Load-Out Area
- Timber Staging Area
- Access Point

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Mountain Valley Pipeline Project

Tree Stack and Access
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October 2017

Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

NAD 1983 UTM 17N 1:1,800

0 0.0325 0.065 Miles

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USDA Forest Service (National Forest) Lands
Brush Mountain Wilderness Area



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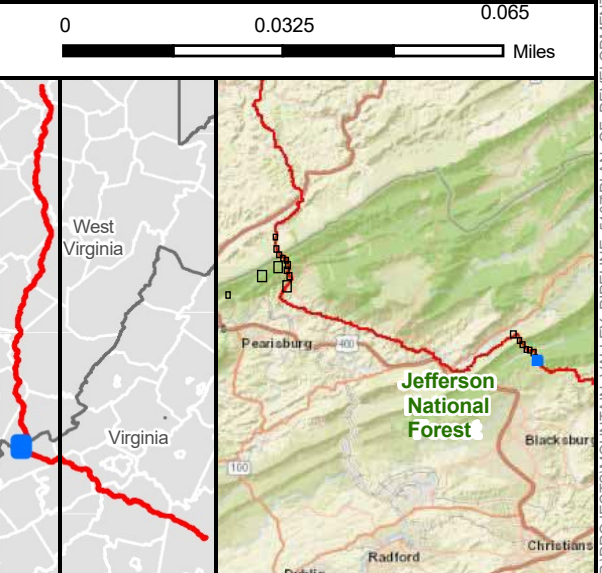
October 2017

Data Sources: ESRI Streaming Data, 2014, ESRI, 2014, Ventyx, 2014.

NAD 1983 UTM 17N 1:1,800

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