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December 16, 2016

Joby P. Timm
Forest Supervisor
George Washington and Jefferson National Forests
United States Forest Service
5162 Valleypointe Parkway
Roanoke, VA 24019

Re: Mountain Valley Pipeline, LLC
FERC Docket No. CP16-10-000
Responses to Information Request

Dear Mr. Timm:

On November 15, 2016, the United States Forest Service (“Forest Service”) submitted an information request with respect to Mountain Valley Pipeline, LLC’s (“Mountain Valley”) certificate application in FERC Docket No. CP16-10-000. Mountain Valley submits herewith responses to the Forest Service’s information request.

If you have any questions, please do not hesitate to contact me at (412) 553-5786 or meggerding@eqt.com. Thank you.

Respectfully submitted,

Mountain Valley Pipeline, LLC

A handwritten signature in blue ink, appearing to read "Matthew Eggerding".

Matthew Eggerding
Counsel, Midstream

Attachments

cc: FERC Docket No. CP16-10-000 and service list
Jennifer Adams, Forest Service
Paul Friedman, FERC
Lavinia DiSanto, Cardno, Inc.
Doug Mooneyhan, Cardno, Inc.

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

**Responses to United States Forest Service
Information Request Dated November 15, 2016**

Request:

1. The Upland Erosion Control, Revegetation, and Maintenance Plan (Plan) provided by the Federal Energy Regulatory Commission (FERC) requires topsoil segregation in “areas at the landowner’s or land managing agency’s request” (IV(B)(1)(d)). FERC’s Plan also allows for the construction right-of-way to be expanded to accommodate topsoil segregation (IV(A)(2)). The FS requires segregation of all topsoil, regardless of depth, on all National Forest System (NFS) lands that would be affected by the proposed Mountain Valley Pipeline Project (MVP Project). Statements in the draft Plan of Development for the proposed MVP Project address topsoil segregation. Because the proposal neither includes topsoil segregation nor a proposed extra width of the construction right-of-way to accommodate topsoil segregation, effects due to the segregation activity and extra width may not be analyzed in the Environmental Impact Statement (EIS). Activities implemented on NFS lands must be disclosed to the public and discussed in the EIS or a supplemental analysis, sufficient to support a decision on the proposed project. Therefore, please update the MVP Project proposal with FERC to include topsoil segregation long the entire length of the proposed route on NFS lands to ensure the effects would be analyzed in the EIS. Clarify whether topsoil segregation could be accomplished within the 125-foot-wide construction right-of-way. If it is not possible to accomplish topsoil segregation within a 125-foot-wide right-of-way, update your proposal to include the necessary width of the construction right-of-way.

Response:

While FERC’s Upland Erosion Control, Revegetation, and Maintenance Plan (“Plan”) allows the construction right-of-way to be expanded by up to 25 feet to accommodate topsoil segregation, the Plan also states the “[p]roject use of these additional limited areas is subject to landowner or land management agency approval and compliance with all applicable survey and permit requirements.” Mountain Valley will perform topsoil segregation in all areas of disturbance on National Forest Service lands within the requested 125-foot construction right-of-way. Mountain Valley is not requesting additional right-of-way width for topsoil segregation. As such, incremental impacts from performing topsoil segregation are not expected. Mountain Valley acknowledges that any request for additional workspace outside of the limits of disturbance approved by FERC and the Forest Service for the purposes of topsoil segregation would be subject to further Forest Service approval.

Previously, in Resource Report 1 submitted to FERC on October 23, 2015, Mountain

Valley included a drawing that depicted typical construction practices that included topsoil segregation. That typical drawing is attached here as Attachment USFS 111516-1.

Further, Mountain Valley is preparing drawings in response to the Forest Service's data request issued October 24, 2016. Those drawings depict topsoil segregation within the 125-foot construction right-of-way.

Respondent: Megan Neylon
Position: Environmental Permit Supervisor
Phone Number: 724-873-3645
Date: December 16, 2016

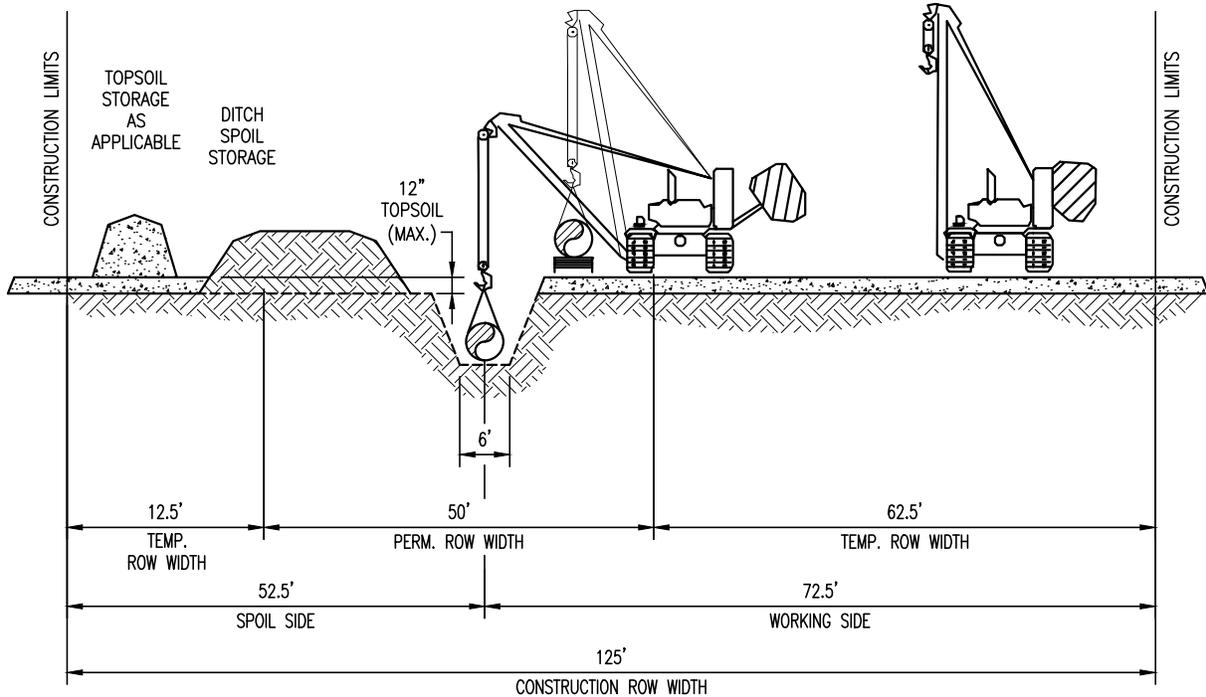
**Mountain Valley Pipeline, LLC
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**Responses to the United States Forest Service
Information Request Dated November 15, 2016**

Attachment USFS 111516-1

WORKING AREA

TRAVEL AREA



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.

DRAWING ASSUMES TYPE "B" SOIL

DRAWN	JDM	DATE	11/14/14
CHECKED	RRR	DATE	10/01/15
APP'D	RLM	DATE	10/01/15
SCALE	N.T.S.	SHEET	1 OF 1
JOB NO.			
PROJECT ID:			
PXXXX			



DESIGN ENGINEERING

TYPICAL CONSTRUCTION DETAIL

MAINLINE CONSTRUCTION
NON-PARALLEL CONSTRUCTION
WITH TOP SOIL SEGREGATION

DRAWING NO.

MVP-2

REV.

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

**Responses to United States Forest Service
Information Request Dated November 15, 2016**

Request:

2. If the proposed MVP Project is approved, the Forest Service may require herbicide use along the permanent right-of-way to control non-native invasive plant species. The potential effects of the herbicide use must be disclosed to the public and analyzed in the EIS or in a supplemental analysis. To ensure that herbicide use is analyzed in the EIS and to avoid supplemental analysis at a later time, please update the MVP Project proposal with FERC to incorporate herbicide use.

Response:

Mountain Valley will use herbicides on National Forest Service lands as requested by the Forest Service. Mountain Valley has developed a draft Herbicide Use Plan (Attachment USFS 111516-2) and will continue to work with the Forest Service to finalize the Plan.

Respondent: Megan Neylon
Position: Environmental Permit Supervisor
Phone Number: 724-873-3645
Date: December 16, 2016

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

**Responses to United States Forest Service
Information Request Dated November 15, 2016**

Attachment USFS 111516-2

Draft Herbicide Use Plan

Mountain Valley Pipeline Project

Prepared by:



December 2016

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Draft Mountain Valley Pipeline Project Herbicide Use Plan

1.0 INTRODUCTION

Mountain Valley Pipeline, LLC (MVP), a joint venture between EQT Midstream Partners, LP and affiliates of NextEra Energy, Inc., Con Edison Gas Midstream LLC, WGL Holdings, Inc., Vega Energy Partners, Ltd., and RGC Midstream, LLC (collectively referred to as MVP), is seeking a Certificate of Public Convenience and Necessity (Certificate) 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 Mountain Valley Pipeline Project (Project) located in 17 counties in West Virginia and Virginia. MVP plans to construct 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 (LDCs), industrial users and power generation in the Mid-Atlantic and southeastern markets, as well as potential markets in the Appalachian region. Construction is anticipated to begin in 2017 and conclude in the fourth quarter 2018. Construction on National Forest System lands will occur in 2018.

The proposed pipeline will extend 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 will include approximately 171,600 horsepower of compression at three compressor stations currently planned 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 3.4-mile long segment of the Project will cross 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 Forest Service of the U.S. Department of Agriculture (USFS). Another 60-foot segment, (i.e., the Weston Gauley Bridge Turnpike Trail [Weston Gauley Turnpike] in Braxton County, West Virginia, administered by the U.S. Army Corps of Engineers [USACE]), will be crossed by the pipeline. 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 will be the responsibility of the FERC. The USFS 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 USFS, this Plan focuses on the JNF. Where USACE measures would substantively differ for the crossing of the Weston Gauley Turnpike, they are pointed out. If BLM requirements differ, they are pointed out.

The USFS will be responsible for enforcement of the terms and conditions of the BLM's Right-of-Way Grant and the USFS Special Use Authorization (SUA) on National Forest

System lands during the term of the Right-of-Way Grant/SUA, respectively. On the JNF, compliance will be monitored by the USFS Project Manager and compliance monitors designated by the Authorized Officer.

The FERC will utilize a third-party Compliance Inspection Contractor (CIC) contracted to MVP to act on behalf of the agency to provide Project-wide construction oversight and monitor compliance. The CIC will inspect and monitor preconstruction activities and enforce requirements related to the National Historic Preservation Act (NHPA), the Endangered Species Act (ESA), and other applicable laws and regulations. The Project will adhere to all federal, state, and local permits. The CIC will coordinate with the USFS Project Manager and designated compliance monitors.

1.1 Plan Purpose

The Project has the 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 (see the Plan of Development [POD]). The purpose of this Plan is to provide measures to be utilized by the FERC, USFS, and other applicable management agencies, the CIC, and the construction contractor to ensure protection of the environment.

Prior to the start of tree clearing and construction of the pipeline, all equipment will be examined for cleanliness and approved for use on the ROW by an individual designated by the JNF¹; these inspections would occur at locations selected by the USFS outside of the JNF (see the *Exotic and Invasive Species Control Plan* for more details). Excavation for pipeline placement exposes the topsoil surface to potential entrance of exotic, noxious, and/or invasive plant species. This can occur either by physical transport onto the exposed soil site by way of equipment, machinery or vehicles, through windborne dissemination of seeds of exotic or invasive species from the surrounding area, or by introduction of seeds or plant parts contained in mulch or straw bales. In addition, storing top soil can spread an existing weed population to other areas in the right-of-way. To avoid and minimize the potential for the introduction of these seeds to the Project corridor, MVP will apply the management strategies outlined in this Plan to control exotic, noxious, and invasive plant species.

This Plan was developed to identify how herbicide used to control noxious weed and invasive species will be implemented for the MVP Project on the JNF. Federal and State policies require that measures be taken to control the spread of noxious weeds. Noxious weeds have the potential to invade areas disturbed by construction and may spread along the cleared areas of the pipeline right-of-way. Soil disturbance may also allow weed seed already present to germinate and grow.

Several laws, regulations, and policies govern the management of noxious weeds on public lands. Under the Noxious Weed Act of 1974 (7 U.S.C. §§ 2801-2814, January 3, 1975, as amended 1988 and 1994.), federal agencies are charged with the responsibility

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.

to identify and control invasive plant species that are harmful to public health, land, or other resources. This Plan is consistent with the 2004 Land and Resource Management Plan for the JNF and USDA Forest Service stipulations regarding herbicide use.

The purpose of this Plan is to prescribe methods to prevent and control the spread of noxious weeds and invasive species (hereinafter referred to as weeds) during and following construction of the MVP Project on the JNF. MVP and its contractors will be responsible for carrying out the methods described in this Plan.

This Plan is applicable to the installation of the pipeline and ancillary facilities within the temporary construction right-of-way, permanent operational right-of-way, staging areas, access roads, and any other disturbed areas associated with the MVP Project on the JNF.

1.2 Objectives

The objectives of this Herbicide Use Plan include:

1. Conduct all herbicide-use activities using an integrated pest management approach to improve overall treatment effectiveness and to reduce health risks for both humans and the environment.
2. Conduct all herbicide-use activities in full compliance with applicable Federal laws, regulations, and policies. Relevant State and local laws pertaining to the use of herbicides will be followed when not in conflict with Forest Service management authorities and objectives.
3. Require that all herbicide-use activities conducted by MVP personnel and their contractors on National Forest System lands, or other areas administered by the Forest Service, be in compliance with applicable EPA pesticide label restrictions and other applicable Federal and State laws and regulations including the Federal and State laws and regulations that apply to personnel training and licensing.
4. Require that all personnel who use any herbicide in terrestrial or aquatic areas of the National Forest System be trained in the proper, safe, and effective use of the respective pesticides being applied for the management activity. Herbicide-use training and certification will be accomplished through an appropriate EPA-approved State program.
5. Incorporate pertinent herbicide-use policy and related handbook guidance into all management activities on the National Forest System lands, waters, or facilities administered by the Forest Service.

2.0 WEED INVENTORY

MVP has conducted field studies, file searches, and weed consultations to identify existing weed infestations along the pipeline right-of-way and adjacent extra workspaces, along new or improved access roads, and within ancillary facility locations where clearing will be required on federal land crossed by the Project. To identify weeds that potentially

occur within the proposed Project area and known locations of weed infestations crossed by the proposed project, MVP consulted with the Forest Service, and county weed control departments. Early identification of existing infestations is intended to help minimize the spread of weeds by identifying sites where preventative measures could be implemented prior to the start of construction. Information resulting from identification before, during, and after construction, including species identified within or adjacent to the project area, locations of infestations, and extent of infestations, will be coordinated with the JNF.

Table 2-1 lists the weeds that are known to occur or have the potential to occur along the proposed pipeline route as identified through agency consultations.

Table 2-1. Exotic and Invasive Species with the Potential to Occur Along the Project Right-of-Way

Common Name	Scientific Name	Growth Form	Typical Habitat(s)
Amur Honeysuckle	<i>Lonicera maackii</i>	Shrub	Pastures, fields, forest, forest edges, roadsides
Autumn Olive	<i>Elaeagnus umbellata</i>	Shrub	Pastures, fields, roadsides
Asian Bittersweet	<i>Celastrus orbiculata</i>	Vine	Fields, forest edges, roadsides, grasslands
Beefsteak Plant	<i>Perilla frutescens</i>	Herb	Roadsides
Bell's Honeysuckle	<i>Lonicera bella</i>	Shrub	Fields, pastures, forest edge, roadsides
Bishop's Goutweed	<i>Aegopodium podagraria</i>	Herb	Forests
Border Privet	<i>Ligustrum obtusifolium</i>	Shrub	Old fields, forest gaps
Bradford Pear	<i>Pyrus calleryana</i>	Tree	Full sun, orchards, parks, roadsides, yards, forest edge
Brittle Naiad	<i>Najas minor</i>	Herb	Ponds, streams, lakes, wetlands
Bull Thistle	<i>Cirsium vulgare</i>	Herb	Pastures, fields
Bush Honeysuckles	<i>Lonicera spp.</i>	Shrub	Pastures, fields, forest edges, roadsides
Butter-and-Eggs	<i>Linaria vulgaris</i>	Herb	Fields, pastures, roadsides, disturbed areas
Canada Bluegrass	<i>Poa compressa</i>	Grass	Fields, pastures, forest edge, wet sites, forest openings, waste areas
Canada Thistle	<i>Cirsium arvense</i>	Herb	Pastures, fields
Celandine	<i>Chelidonium majus var. majus</i>	Herb	Fields, roadsides, waste areas, dry to moist woodlands
Cheatgrass	<i>Bromus tectorum</i>	Grass	Pastures, fields
Chinese Bushclover	<i>Lespedeza cuneata</i>	Herb	Roadsides, rights-of-way, old fields, pasture, woodlands
Chinese Privet	<i>Ligustrum sinense</i>	Shrub	Pastures, fields, forest, forest edges, roadsides
Chinese Wisteria	<i>Wisteria sinensis</i>	Woody Vine	Forest, forest edges, roadsides, disturbed areas
Chinese Yam	<i>Dioscorea oppositifolia</i>	Vine	Streambanks, floodplain forests
Cinnamon Vine	<i>Dioscorea polystachya</i>	Vine	Forests, woodlands, thickets
Colonial Bent-grass	<i>Agrostis capillaris</i>	Grass	Pastures, fields
Common Buckthorn	<i>Rhamnus catharticus</i>	Shrub	Wetlands, old fields
Common Chickweed	<i>Stellaria media</i>	Herb	Fields, floodplain forests, disturbed areas, waste areas
Common Privet	<i>Ligustrum vulgare</i>	Shrub	Forests, fields, rights-of-way

Table 2-1. Exotic and Invasive Species with the Potential to Occur Along the Project Right-of-Way (continued)

Common Name	Scientific Name	Growth Form	Typical Habitat(s)
Common Reed	<i>Phragmites australis</i>	Grass	Wetlands
Common Sheep Sorrel	<i>Rumex acetosella</i>	Herb	Fields, roadsides, disturbed areas, waste areas
Common Velvetgrass	<i>Holcus lanatus</i>	Grass	Meadows, wetlands, riparian areas
Cork Tree	<i>Phellodendron japonicum</i>	Tree	Residential, parks, open woodlands, roadsides
Crown Vetch	<i>Coronilla varia</i>	Herb	Pastures, fields
Curled Thistle	<i>Carduus crispus</i>	Herb	Pastures, fields
Curlyleaf Pondweed	<i>Potamogeton crispus</i>	Herb	Wetlands, ponds, lakes
Cut-leaf Teasel	<i>Dipsacus laciniatus</i>	Herb	Fields, pastures, roadsides, waste areas
Dame's Rocket	<i>Hesperis matronalis</i>	Herb	Fields, forest edges
Drooping Star of Bethlehem	<i>Ornithogalum nutans</i>	Herb	Fields, floodplains, waste areas
English Ivy	<i>Hedera helix</i>	Vine	Forests, disturbed areas
Eurasian Water-milfoil	<i>Myriophyllum spicatum</i>	Herb	Aquatic ponds, ditches, wetlands
European Barberry	<i>Berberis vulgaris</i>	Shrub	Forests, wetlands, pastures
European Privet	<i>Ligustrum vulgare</i>	Shrub	Pastures, fields, forests, forest edges, roadsides, streams
European Stinging Nettle	<i>Urtica dioica</i>	Herb	Stream edges, marsh, meadows, moist woodlands
Field Hawkweed	<i>Hieracium caespitosum</i>	Herb	Fields, pastures, prairies, waste areas, disturbed areas
Fiveleaf Akebia	<i>Akebia quinata</i>	Vine	Forests
Fuller's Teasel	<i>Dipsacus fullonum</i>	Herb	Riparian areas, meadows, fields, forest openings, disturbed areas
Garden Yellow-rocket	<i>Barbarea vulgaris</i>	Herb	Pastures, fields, roadsides, moist meadows
Garlic Mustard	<i>Alliaria petiolata</i>	Herb	Forests
Giant Hogweed	<i>Heracleum mantegazzianum</i>	Herb	Right-of-ways, riverbanks, ditches
Glossy Buckthorn	<i>Frangula alnus</i>	Shrub	Wetlands, old fields
Goatsrue	<i>Galaga officinalis</i>	Herb	Pastures, streambanks
Goldern Bamboo	<i>Phyllostachys aurea</i>	Grass	Roadsides, disturbed areas, forest openings, forest edge
Great Mullein	<i>Verbascum thapsus</i>	Herb	Fields, meadows, forests, roadsides, disturbed areas
Ground Ivy	<i>Glechoma hederacea</i>	Herb	Open forests, disturbed areas, waste areas, lawn
Guelder Rose	<i>Viburnum opulus</i>	Shrub	Forests, wetlands, fields
Gypsy-flower	<i>Cynoglossum officinale</i>	Herb	Fields, pastures, forest edge, roadsides, disturbed areas
Hairy Cat's Ear	<i>Hypochaeris radicata</i>	Herb	Fields, pastures, grasslands, roadsides, disturbed areas
Hydrilla	<i>Hydrilla verticillata</i>	Herb	Wetlands, ponds
Indian-strawberry	<i>Duchesnea indica</i>	Herb	Fields, prairies, open woodlands, disturbed areas
Ivy-leaved Speedwell	<i>Veronica hederifolia</i>	Herb	Fields, forest edge, roadsides, disturbed areas
Japanese Barberry	<i>Berberis thunbergii</i>	Shrub	Forests, wetlands, pastures

Table 2-1. Exotic and Invasive Species with the Potential to Occur Along the Project Right-of-Way (continued)

Common Name	Scientific Name	Growth Form	Typical Habitat(s)
Japanese Bromegrass	<i>Bromus japonicus</i>	Grass	Pastures, fields
Japanese Honeysuckle	<i>Lonicera japonica</i>	Vine	Forests, wetlands, fields
Japanese Hops	<i>Humulus japonicus</i>	Vine	Roadsides, streambanks, drainage ditch, meadows, disturbed areas, waste areas
Japanese Knotweed	<i>Polygonum cuspidatum</i>	Shrubby herb	Wetlands, streambanks, roadsides
Japanese Spiraea	<i>Spiraea japonica</i>	Shrub	Fields, forest openings
Japanese Stilt Grass	<i>Microstegium vimineum</i>	Grass	Pastures, fields, forests, wetlands
Jetbead	<i>Rhodotypos scandens</i>	Shrub	Forests, forest edge, roadsides
Jimsonweed	<i>Datura stramonium</i>	Herb	Pastures, fields
Johnson Grass	<i>Sorghum halepense</i>	Grass	Fields, wetlands, open forests
Kentucky Bluegrass	<i>Poa pratensis</i> ssp. <i>pratensis</i>	Grass	Fields, grasslands, forest edge
Kudzu	<i>Pueraria lobata</i>	Vine	Forests
Lesser Burdock	<i>Arctium minus</i>	Herb	Fields, meadows, disturbed areas
Lesser Celandine	<i>Ranunculus ficaria</i> var. <i>bulbifera</i>	Herb	Forests
Lesser Periwinkle	<i>Vinca minor</i>	Vine	Fields, forest edge, forest openings
Linden Arrowwood	<i>Viburnum dilatatum</i>	Shrub	Forests, wetlands, disturbed areas
Long-bristled Smartweed	<i>Persicaria longisetata</i>	Herb	Lawns, roadsides, wet meadows, waste areas
Maiden Grass	<i>Miscanthus sinensis</i>	Grass	Pastures, fields
Marsh Dewflower	<i>Murdannia keisak</i>	Herb	Wetlands
Meadow Brome	<i>Bromus commutatus</i>	Grass	Pastures, fields
Meadow Fescue	<i>Schedonorus pratensis</i>	Grass	Pastures, fields
Mile-a-minute Vine	<i>Polygonum perfoliatum</i>	Vine	Fields, forest edges, roadsides, ditches
Mimosa	<i>Albizia julibrissin</i>	Tree	Forest edges, residential areas, roadsides
Moneywort	<i>Lysimachia nummularia</i>	Herb	Moist forests, streambanks, wet meadows, wetlands, roadsides, fields
Multiflora Rose	<i>Rosa multiflora</i>	Shrub	Pastures, fields, forest edges
Musk Thistle	<i>Carduus nutans</i>	Herb	Pastures, fields
Nodding Plumeless-thistle	<i>Carduus nutans</i> ssp. <i>marcolepis</i>	Herb	Disturbed sites, waste areas, roadsides
Norway Maple	<i>Acer platanoides</i>	Tree	Forests
Oriental Bittersweet	<i>Celastrus orbiculatus</i>	Vine	Forest edges, old fields
Oriental Lady's Thumb	<i>Polygonum caespitosum</i> var. <i>longisetum</i>	Herb	Wetlands, floodplain forests, upland forests
Oxeye Daisy	<i>Leucanthemum vulgare</i>	Herb	Fields, pastures, grasslands, roadsides, disturbed areas
Parrot Feather	<i>Myriophyllum aquaticum</i>	Herb	Wetlands, ponds
Perennial Ryegrass	<i>Lolium perenne</i> ssp. <i>multiflorum</i>	Grass	Pastures, fields
Plumeless Thistle	<i>Carduus acanthoides</i>	Herb	Pastures, fields, roadsides
Poison-hemlock	<i>Conium maculatum</i>	Herb	Fields, pastures, roadsides, forest edge, degraded wetlands and prairies
Porcelain Berry	<i>Ampelopsis brevipedunculata</i>	Vine	Forests, stream banks, old fields

Table 2-1. Exotic and Invasive Species with the Potential to Occur Along the Project Right-of-Way (continued)

Common Name	Scientific Name	Growth Form	Typical Habitat(s)
Poverty Brome	<i>Bromus sterilis</i>	Grass	Pastures, fields
Princess Tree	<i>Paulownia tomentosa</i>	Tree	Forests
Purple Crown-vetch	<i>Coronilla varia</i>	Herb	Pastures, fields, roadsides, utility right-of-ways
Purple Loosestrife	<i>Lythrum salicaria</i>	Herb	Aquatic ponds, ditches, wetlands
Reed Canary Grass	<i>Phalaris arundinacea</i>	Grass	Wetlands
Rough Bluegrass	<i>Poa trivialis</i>	Grass	Pastures, fields, roadsides,
Russian Olive	<i>Elaeagnus angustifolia</i>	Shrub	Pastures, fields, roadsides
Rye Brome	<i>Bromus secalinus</i>	Grass	Pastures, fields
Shattercane	<i>Sorghum bicolor</i>	Grass	Pastures, fields
Shrubby Bushclover	<i>Lespedeza bicolor</i>	Shrub	Forest edges, field edges, forest openings
Siberian Elm	<i>Ulmus pumila</i>	Tree	Forests
Small Carpgrass	<i>Arthraxon hispidus</i>	Grass	Wetlands, ponds, streams, river floodplains
Smooth Brome	<i>Bromus inermis</i> ssp. <i>inermis</i> var. <i>inermis</i>	Grass	Fields, Pastures
Spotted Knapweed	<i>Centaurea stoebe</i> ssp. <i>micranthos</i>	Herb	Pastures, fields, roadsides
Star of Bethlehem	<i>Ornithogallum umbellatum</i>	Herb	Forests, fields
Standish's Honeysuckle	<i>Lonicera standishii</i>	Shrub	Fields, pastures, forest edge, roadsides, disturbed areas
St. John's-Wort	<i>Hypericum perforatum</i>	Herb	Fields, pastures, disturbed areas
Stonecrop	<i>Sedum sarmentosum</i>	Herb	Forest, forest edge
Sweetclover	<i>Melilotus officinalis</i>	Herb	Fields, pastures, roadsides, waste areas
Sycamore Maple	<i>Acer Pseudoplatanus</i>	Tree	Forests
Tall Fescue	<i>Schedonorus phoenix</i>	Grass	Pastures, fields
Tartarian Honeysuckle	<i>Lonicera tatarica</i>	Shrub	Pastures, fields, roadsides, utility right-of-ways, forest edge
Tree of Heaven	<i>Ailanthus altissima</i>	Tree	Forests
Viper's Bugloss	<i>Echium vulgare</i>	Herb	Pastures, fields, roadsides, waste areas
Water Chestnut	<i>Trapa natans</i>	Herb	Wetlands
Watercress	<i>Rorippa nasturtium-aquaticum</i>	Herb	Wetlands, streams, springs
Water Shield	<i>Brasenia schreberi</i>	Herb	Ponds, lakes
Wild Carrot	<i>Daucus carota</i>	Herb	Fields, pastures, roadsides, degraded prairie, forest edge
Wild Parsnip	<i>Pastinaca sativa</i>	Herb	Roadsides
Wine Berry	<i>Rubus phoenicolasius</i>	Shrub	Forests, fields
Winged Euonymus	<i>Euonymus alatus</i>	Shrub	Forests
Winter Creeper	<i>Euonymus fortunei</i>	Vine	Forests, fields
Wocheiner knapweed	<i>Centaurea nigrescens</i>	Herb	Fields, pastures, grasslands, field edge, open forests
Yellow Flag	<i>Iris pseudocorus</i>	Herb	Wetlands

Sources: USDA 2015; VDCR-DNH 2015; WVDNR 2009, 2010

3.0 WEED MANAGEMENT

Weeds are spread by a variety of means including pedestrian vectors (e.g., hiking, recreation, etc.), construction equipment, construction and reclamation materials, livestock, and wildlife. Implementation of preventative measures to control the spread of weeds is the most cost effective management approach. The MVP Project will implement weed control management measures that are consistent with the standards and guidelines included in the Land and Resource Management Plan for the JNF regarding noxious weeds and invasive species. MVP will coordinate site-specific treatment measures with the Forest Service when an invasive species is located. Forest-wide Standards for herbicide use are listed below:

FW-94: Method and timing of application are chosen to achieve Project objectives while minimizing effects on non-target vegetation and other environmental elements. Selective treatment is preferred over broadcast treatment.

Application methods from most to least selective are:

- Cut surface treatments;
- Basal stem treatments;
- Directed foliar treatments;
- Soil spot (spot around) treatments;
- Soil spot (spot grid) treatments;
- Manual granular treatments;
- Manual/mechanical broadcast treatments;
- Helicopter treatments.

FW-95: Herbicides and application methods are chosen to minimize risk to human and wildlife health and the environment. No class B, C, or D chemical (See Table 2-6) may be used on any Project without the approval of the Regional Forester. Vegetable oil is used as the herbicide carrier when available and compatible with the proposed application.

JNF Land and Resource Management Plan Table 2-6. Classification of chemical/method combinations when used at typical rates and exposures*

Application Method	Class			
	A	B	C	D
Manual Ground: Cut Surface	Dicamba Glyphosate Imazpyr	Picloram Triclopyr Amine	2, 4-D Amine	
Basal Stem	Diesel Kerosene Limonene	Triclopyr Ester 2, 4-DP	2, 4-D Ester	
Soil Spot	Hexazionone			
Foliar Spray	Fosamine Glyphosate Hexazionone Imazpyr Kerosene	Limonene Picloram Sulfometuron Methyl Triclopyr Amine Triclopyr Ester	2, 4-D Amine 2, 4-D Ester 2, 4-DP	Tebuthiuron
Mechanical ground	Diesel Dicamba Fosamine Glyphosate Hexazionone Imazpyr	Picloram Sulfometuron Methyl Triclopyr Amine Triclopyr Ester 2, 4-DP	2, 4-D Amine 2, 4-D Ester Tebuthiuron	
Aerial	Diesel Fosamine Glyphosate Hexazionone Imazpyr Kerosene	Limonene Picloram Sulfometuron Methyl Triclopyr Amine Triclopyr Ester 2, 4-DP	2, 4-D Amine 2, 4-D Ester Tebuthiuron	

*Reproduced from Table 2-6 of the JNF Land and Resource Management Plan, page 2-28.

FW-96: Areas do not undergo prescribed burning for at least 30 days after herbicide treatment.

FW-97: Aerial application with herbicides is allowed only in utility corridors. Each aerial herbicide application must have an operations plan to ensure that:

- Adequate precautions are taken to protect the crew, including equipment certification and hazard identification;
- Areas to be aerially treated are clearly marked; and
- Methods used to avoid buffers and other sensitive areas are safe and effective.

FW-98: No herbicide is aerially applied within 200 horizontal feet of an open road or designated trail. Buffers are clearly marked before treatment so applicators can easily see and avoid them.

FW-99: No herbicide is aerially applied within 300 feet, nor ground-applied within 60 feet, of any known threatened, endangered, proposed, or sensitive plant, except where its use is necessary to control non-native invasive species

affecting federally listed or sensitive species. Buffers are clearly marked before treatment so applicators can easily see and avoid them.

FW-100: No herbicide is aerially applied within 200 horizontal feet, nor ground-applied within 30 horizontal feet, of lakes, wetlands, perennial or intermittent springs and streams. No herbicide is applied within 100 horizontal feet of any public or domestic water source. Selective treatments (which require added site-specific analysis and use of aquatic labeled pesticides) may occur within these buffers only to prevent significant environmental damage such as nonnative invasive plant infestations. Buffers are clearly marked before treatment, so applicators can easily see and avoid them.

FW-101: With the exception of utility corridor and road rights-of-way, no herbicide is broadcast within 100 feet of private land or 300 feet of a private residence, unless agreed to by the landowner. Buffers are clearly marked so applicators can easily see and avoid them.

FW-102: No soil-active herbicide is applied within 30 feet of the drip line of reserved vegetation (e.g. den trees of hardwood inclusions) or within 30 feet of the drip line of vegetation adjacent to the treated area.

FW-103: Aquifers and public water sources are identified and protected.

FW-104: Application equipment, empty herbicide containers, clothes worn during treatment, and skin are not cleaned in open water or wells. Mixing and cleaning water must come from a public water supply and be transported in separate labeled containers.

FW-105: Herbicide mixing, loading, or cleaning areas in the field are not located within 200 feet of private land, riparian corridors, open water or wells, or other sensitive areas.

FW-106: No herbicide is broadcast on rock outcrops or sinkholes. No soil-active herbicide with a half-life longer than 3 months is broadcast on slopes over 45%, erodible soils, or aquifer recharge zones. Such areas are clearly marked before treatment so applicators can easily see and avoid them.

FW-107: Weather is monitored and the Project is suspended if temperature, humidity, or wind becomes unfavorable as shown in Table 2-7.

JNF Land and Resource Management Plan Table 2-7. Unacceptable Weather Conditions for Herbicide Application*

	Temps Higher Than	Humidity Less Than	Wind (at Target) Greater Than
Ground: Hand (cut surface)	N.A.	N.A.	N.A.
Hand (other)	98F	20%	15 mph
Mechanical (liquid)	95F	30%	10 mph
Mechanical (granular)	N.A.	N.A.	10 mph
Aerial: Granular	N.A.	N.A.	N.A.

*Reproduced from Table 2-7 of the JNF Land and Resource Management Plan, page 2-30.

FW-107: Weather is monitored and the Project is suspended if temperature, humidity, or wind becomes unfavorable as shown in Table 2-7.

MVP will utilize Krenite and Glyphosate herbicides to control invasive species on the MVP right-of-way.

3.1 Preventative Measures

The preventative measures that will be used to prevent the spread of weeds along the MVP Project right-of-way and within ancillary facilities on the JNF are discussed in the Project's *Restoration Plan*. These include:

- The CIC will ensure that equipment is free of soil and debris capable of transporting weed seeds, roots, or rhizomes. An inspector will place a sticker on equipment determined to be free of weeds.
- All Contractor equipment will arrive at the work site clean and weed-free. Prior to inspection, all equipment will be power or high-pressure air washed. In addition, all equipment leaving an area infested with noxious weeds will first be cleaned to limit the spread of noxious weed seeds and propagules.
- The pipeline right-of-way and ancillary facility sites will be examined and treated for invasive prior to the clearing.
- In the construction right-of-way topsoil would be segregated and would not be mixed with spoil material before or during replacement. Once the disturbed areas have been de-compacted as needed, topsoil would be re-distributed over the entire disturbed area from which it was salvaged and re-contoured. Final revegetation would occur within the approved seeding window.
- The contractor will implement reclamation of disturbed lands following construction as outlined in MVP project-specific *Restoration Plan* and the *Exotic and Invasive Species Control Plan*. Continuing revegetation efforts will ensure adequate vegetative cover to prevent the invasion of weeds.
- The contractor will ensure that straw bales, used on the project for sediment barrier installations, or mulch are certified weed-free.
- Equipment will not be sprayed with pre-emergent chemicals as a preventative measure, as these chemicals target a wide range of vegetation. As a result, the use of such chemicals could affect the success of revegetation efforts.

3.2 Treatment Methods

If noxious or invasive species are found in numbers that are significantly different from existing nearby off right-of-way locations, appropriate control measures will be implemented in an attempt to eradicate the identified weed infestations along the right-of-way and to reduce the spread or proliferation of weeds. If a location is discovered, MVP will provide a treatment plan to the USFS that will include a map and any mechanical or herbicides intended for use at that location. The plan will also include a monitoring plan for that area to ensure that the invasive species has been removed and new vegetation has begun to establish. Post-construction control measures may include one or more of the following methods:

- Mechanical methods reliant on the use of equipment to disk or excavate weed populations. If this method is used, subsequent seeding will be conducted to re-establish a desirable vegetative cover, which will stabilize the soils and slow the potential re-invasion of weeds. Seed selection will be based on site-specific conditions, and the appropriate seed mix identified for those conditions, as presented in the Project's *Restoration Plan*.
- Herbicide application is an effective means of reducing the size of weed populations. Herbicide application and handling methods are described in section 5.0 below.

3.3 Education

MVP will provide training to contractors and information regarding weed identification, management, and impacts on agriculture, livestock, and wildlife to their appropriate employees. The critical importance of preventing the spread of weeds in areas not infested and controlling the proliferation of weeds already present will be explained. The importance of adhering to measures to prevent the spread of weeds (e.g., not driving off the cleared right-of-way, cleaning equipment that collect soil and plant seeds, and quickly identifying new infestations of weeds) will be stressed.

4.0 MONITORING

MVP will annually monitor the right-of-way and ancillary facilities that occur on federal land for weeds following construction and reclamation of the Project for a period of two years. Locations of infestations on federal land crossed by the Project, and extent of infestations, will be submitted to the USFS. If species or colonies of species are found, MVP will conduct spot eradication of those species.

5.0 HERBICIDE APPLICATION, HANDLING, SPILLS, AND CLEANUP

Herbicide selection will be consistent with the USFS' stipulations for herbicide use as found in Table 2.6 of the JNF Land and Resource Management Plan (see Section 3 above).

5.1 Herbicide Application and Handling

MVP or its contractor would submit a Pesticide Use Proposal to document their use of herbicide on federally administered lands, as well as a pesticide application report within 24 hours following application. The chemical application will be done by a licensed contractor in accordance with all applicable laws and regulations.

Herbicide label instructions and manufacture guidelines will be strictly adhered to. For example, manufacturer's guidelines recommend that herbicides only be applied under appropriate weather conditions (i.e., periods of low wind speeds, when precipitation is not imminent, etc.), that application sprayers be mounted low to the ground, and that sprayer booms incorporate specialized nozzles designed to produce large droplet sizes with limited drift potential. Adherence to these specifications and manufacturer label directions would minimize the potential for drift or transport of herbicides to off right-of-way areas.

Vehicle-mounted sprayers (e.g., handgun, boom, and injector) will be used primarily in open areas that are readily accessible by vehicle. Hand application methods (e.g., backpack spraying) that target individual plants will be used to treat small scattered weed populations in rough terrain. Calibration checks of equipment will be conducted at the beginning of spraying and periodically thereafter to ensure proper application rates are being achieved.

Herbicides will be transported daily to the Project site with the following provisions:

- Herbicides will be premixed and delivered in returnable/refillable containers and transferred by closed system to application tanks to limit worker and environmental exposure and eliminate the need for disposal of herbicide containers in area landfills.
- Herbicides will be transported in a manner that will prevent tipping or spilling;
- Mixing of surfactants or other additives with water or other carriers and refilling of containers will typically be conducted at road crossings, and no mixing or filling will occur within 200 feet of open or flowing water, wetlands, or other sensitive resources; and
- Mixing and application procedures will be supervised by a licensed commercial applicator, and monitoring will be conducted to ensure that proper mixing, application, cleanup, personal protection and safety procedures are followed;
- All herbicide equipment and containers will be inspected daily for leaks.