

INDIVIDUALS

IND244 – Carl E. Zipper

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mixtures that are comprised predominantly of the allelopathic, exotic, invasive, and competitive tall fescue. Fields-Johnson et al. (2012) describes a "conventional" seeding mix of approximately 100 pounds per acre, which includes 67 pounds per acre of perennial-species seed;⁹⁴ and even those seeding mixtures, which lacked tall fescue, inhibited growth of forest trees that were planted on that mine site.⁹⁵

The ESC Plans, and associated DEIS Appendices N-11 and N-12, are not consistent with the stated intent to mitigate adverse effects to forest resources by enabling regeneration of forest plant communities similar to those of adjacent forests. If implemented as stated, seeding practices "recommended" by the ESC Plan would hinder natural regeneration.

IND244-21

Migratory Bird Conservation Plan (MBC Plan) fails to specify important details, fails to specify convincing rationale for proposed actions, and fails to mitigate adverse effects.

How will "native shrubs" be established? The MBC Plan describes plans to establish "native shrubs" in the temporary work spaces. However, it is inconsistent in describing how that will be done. For example, the plan states [with emphases added]:

*"The temporary impacts in the area between the permanent and temporary ROW and the replanting of native shrubs in these sites, will result in the forest edge shifting as succession occurs."*⁹⁶

*"The remaining area will be replanted with native shrubs. Planting native shrubs is proposed for temporarily impacted forest areas to accelerate succession and to create a "soft" edge between the open ROW and forest."*⁹⁷

*"Native shrubs will be planted in the temporary ROW within forested areas (1,151.13 hectares [2,844.51 ac]). Planting shrubs will expedite forest succession along impacted edges of forests, including the Core Forest Areas."*⁹⁸

but also includes the statement

*"As mentioned above, MVP's seed mix will also include native shrubs in temporarily impacted forest areas ..."*⁹⁹

How will the shrubs be established? By planting (as in bringing live seedlings to the site, and planting those seedlings by the roots holes in the soil) or by including seed in the hydroseeder tank? That question is relevant to the MBC Plan and to mitigation of adverse effects for several reasons. A much wider range of native trees and shrubs are available as seedlings than as seed that is suitable for hydroseeding; hence, hand-planting allows a wider range of species to be established, whereas few species are available as seed suitable for hydroseeding. Also, hand-planting of seedlings provides greater control over establishment densities than does hydroseeding, which in my experience often results in uneven distributions of the hydroseeded

⁹⁴ Fields-Johnson CW et al. (2012) Forest restoration in steep slopes after coal surface mining in Appalachian USA: Soil grading and seeding effects. Forest Ecology and Management. 270: 126–134, Table 1.

⁹⁵ Zipper CE et al. (2016) Establishing hardwood forests on Appalachian mine sites using the Forestry Reclamation Approach, p. 52-72 in: 2016 Powell River Project Research and Education Program Reports, Virginia Tech, http://www.prp.cses.vt.edu/Reports-16/Reports_16.html (a journal submission on this study is in preparation).

⁹⁶ MBC Plan p. 16; p. 49 of 248 in submittal 20161027-5212.

⁹⁷ MBC Plan p. 18; p. 51 of 248 in submittal 20161027-5212.

⁹⁸ MBC Plan p. 20; p. 53 of 248 in submittal 20161027-5212.

⁹⁹ MBC Plan p. 21; p. 54 of 248 in submittal 20161027-5212.

IND244-21

Mountain Valley indicated that they would incorporate native shrub seeds into their seed mix. See the response to IND244-8.

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tree or shrub species over the restoration area because of differing sizes and densities or tree- and shrub seeds, relative to herbaceous seeds that are typically hydroseeded.

Also, what is justification for establishing shrubs and not forest trees? This question is discussed further below.

What species will be established? The MBC Plan states that

“Wildlife managers recommend creation of such an edge to provide a gradual transition between grassland-type habitats and forest. This area can provide nesting and foraging habitat for a number of migratory birds, such as blue-winged warblers and prairie warblers that prefer shrub/scrub habitat and the forest-edge interface.”

However, the MBC Plan provides no basis for selecting “native shrubs” of whatever species are planned for planting or seeding over forest trees for this purpose. This comment is offered while recognizing that black locust (*Robinia pseudoacacia*) is often added to seed mixes, and while noting that heavy cover of black locust can hinder re-establishment of native trees, enable greater light penetration to the herbaceous understory than other native shrub and tree species,¹⁰⁰ and create a thorny thicket that many landowners would likely find to be unfavorable. Perhaps species other than black locust are proposed for seeding? The species being proposed for establishment should be described, and a rationale for seeding such species as an alternative to planting a mixture of native trees similar in composition to adjacent forest should be stated.

What width of transitional “shrub-scrub” habitat is beneficial along the forest edge? And what width will be established? Why is “shrub-scrub” more beneficial in temporary workspaces than a regenerating native forest?

The MBC Plan fails to recognize what has been stated elsewhere the DEIS:

“The Applicants would also allow the rights-of-way adjacent to a 10-foot-wide strip over the pipeline to grow as scrub-shrub habitat so as to provide a more gradual transition between the pipeline corridor and the surrounding forested habitat.”¹⁰¹

The MBC Plan to establish shrub/scrub habitat in temporary workspaces fails to recognize that 40 feet of the 50-foot right-of-way are also planned for shrub/scrub habitat (as stated by the above text); and fails to state why that transition is, apparently, so inadequate that the 75-foot width of temporary workspace within the construction corridor should also require shrub establishment, as an alternative to active establishment within those temporary workspaces of native trees of species similar to the adjacent forest? Or would adverse effects to forest resources be mitigated to a greater extent if forest trees were actively re-established over at least some portion of those areas, if not the entire 75-foot width? These questions are not addressed by the MBC Plan or elsewhere in the DEIS.

¹⁰⁰ Personal experience by the author. As a nitrogen fixing species that presents sparse canopy, black locust creates conditions that are favorable for herbaceous plants, including grasses that compete with native trees. Black locust is also subject to infestation by locust borer (*Megacyllene robiniae*, see <https://www.na.fs.fed.us/spfo/pubs/fidls/locust/locust.htm>) which further reduces leaf canopy late in the growing season.

See also Groninger J et al. (2007) Mine reclamation practices to enhance forest development through natural succession. US Office of Surface Mining, Forest Reclamation Advisory No. 5 (<http://arri.osmre.gov/>), p.3, Box 2.

¹⁰¹ DEIS, p. 4-163 (p. 400 of 781).

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The MBC Plan also states that that the applicant will work with the Wildlife Habitat Council to incorporate

“principals of Integrated Vegetation Management into MVP’s ROW maintenance. Integrated Vegetation Management incorporates seed mix selection, maintenance vegetation scheduling, and selection of mechanical vegetation maintenance techniques to encourage a low ground cover of native species that flower for a long duration of the growing season ... The permanent ROW will be planted with native grasses and forbs resulting in a net increase of 672.32 hectares (1,661.34 ac) of grassland/herbaceous habitat.”¹⁰²

This sequence of statements (e.g., “low ground cover”) is inconsistent with the DEIS statement above that describes “shrub habitat” establishment over most of the right-of-way’s 50-foot width.

Why is scrub/shrub habitat proposed for non-corridor temporary workspaces? Why are these areas not proposed for active reforestation? In discussing “Forest Habitat and Fragmentation”, the MBC Plan states:

“The Project crosses a total of 93 Core Forest Areas (39 in West Virginia; 54 in Virginia) and, following construction, creates 657 fragments (360 in West Virginia; 297 in Virginia) (Table 10, Appendix B) ... Once previously forested, temporary construction areas have regenerated as forest, the total number of fragments will amount to 467.”¹⁰³

How exactly will this effect (reduction of forest fragments by nearly 1/3) occur in response to forest regeneration in temporary workspaces? Since the primary disturbance is a linear corridor, reduction of that corridor’s width through supposed forest regeneration would cause no reduction of forest fragments. Forest areas proposed for disturbance by the initial DEIS issuance totaled 6,496 acres, of which 671 acres (10.3%) are construction access roads and yards.¹⁰⁴ Is the above text based on an assumption that forest plant communities would regenerate in these areas? Or is some other form of logic being invoked to claim this level of fragment reduction? Whatever is the logic behind the claim, that logic should be made clear.

Another element concerning non-corridor temporary workspaces is also not clear: Why are these areas not being reforested directly? Since these areas’ reforestation, apparently has the potential to reduce forest fragmentation by nearly 1/3; since reduction of fragmentation in currently forested areas would improve habitat for migratory birds; and since the DEIS has found that the pipeline would cause adverse effects to forest resources that include forest fragmentation; and since an active and effective reforestation program would accelerate the forest regeneration and forest-fragment reduction: Why have the MBC Plan and DEIS failed to propose active reforestation of non-corridor temporary workspaces? Both the MBC Plan and the DEIS contain much language about establishing scrub/shrub habitat to produce “soft edges” for fragmented forests, but that language has no relevance to those non-corridor temporary workspaces that would eliminate forest gaps if reforested..

If, in fact, the nearly 1/3 reduction of forest fragments claimed to result from forest regeneration within non-corridor temporary workspaces is correct, the logic for requiring an active and effective program to ensure and accelerate forest regeneration in these areas becomes even more compelling.

¹⁰² MBC Plan p. 21; p. 54 of 248 in submittal 20161027-5212.

¹⁰³ MBC Plan, p. 16-17 (submittal 20161027-5212, p. 49-50 of 248).

¹⁰⁴ Data from Table 4.4.2.1 of the September 2016 DEIS document. Although subsequent route revisions have changed these data, such effects are minor and of little consequence to the points being made.

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IND244-22

Are invasive plant controls planned for restored migratory bird habitat? The MBC Plan fails to reference the Invasive and Exotic Species Control Plan. Does the applicant plan to maintain the scrub-shrub habitat in a condition that is free of invasive and exotic plants? I ask that question while noting that autumn olive is a highly invasive shrub that occurs throughout the project area; establishes readily in disturbed areas and along forest edges such as those that would occur for the pipeline corridor in forest areas; produces berries that are consumed readily when available by many bird species; and is spread across the landscape by birds who defecate live seeds after consuming autumn-olive berries.¹⁰⁵ Another shrub-like species that is highly invasive, establishes readily along forest edges and open forests, and disperses similarly is multiflora rose.¹⁰⁶

Autumn olive and multiflora rose are exotic invasive plants that occur in the project area and are favored as food by many species of bird.¹⁰⁷ Have the DEIS, and the MBC Plan, been prepared based on the assumption that establishment of these species, and other exotic invasive plants, would enhance the value of the pipeline corridor as habitat for migratory birds? Or has the MBC Plan been prepared based on an expectation that the corridor's ability to provide habitat for migratory birds would be enhanced by re-establishing a native plant community? The DEIS should be clear. What is the MBC Plan's goal concerning the nativity of plants that would become established in temporary workspaces and the right-of-way corridor?

Both autumn olive and multiflora rose are able to invade forest areas.¹⁰⁸ If they become established in the scrub-shrub habitat described by the MBC Plan, it is reasonable to expect they would disperse into the adjacent forest and, hence, cause adverse effects to forest resources in addition to the direct effects of construction. I use these two species only as examples as other exotic invasive plant species would likely respond similarly to the environmental disturbance plans described by the DEIS. The MBC Plan fails to describe a mechanism to prevent dispersal of highly invasive exotic plants by migratory and other birds throughout the corridor and, by extension, into adjacent forested areas (and onto nearby non-forested properties). Hence, the MBC Plan fails to describe methods for mitigating the adverse effects to forest resources described by the DEIS.

¹⁰⁵ As described by Miller JH et al. (2015) A management guide for invasive plants in southern forests. USDA Forest Service, Southern Research Station General Technical Report SRS-131, autumn olive is "Often planted for ... wildlife food plots and escapes to forest edges and open forests"; these authors advise "Minimize disturbance within miles of where this plant occurs, and anticipate wider occupation when plants are present before disturbance."

As described by Miller JH et al. (2010) A Field Guide for the Identification of Invasive Plants in Southern Forests, US Forest Service Southern Research Station General Technical Report SRS-119, autumn olive is "Shade tolerant. Spreads by animal-dispersed seeds and found as scattered plants in forest openings and open forests, eventually forming dense stands."

¹⁰⁶ As described by Miller JH et al. (2015) A management guide for invasive plants in southern forests. USDA Forest Service, Southern Research Station General Technical Report SRS-131, invasive roses (including multiflora) "colonize by prolific sprouting and stems that root when touching the soil and spread by bird- and mammal-dispersed seeds"; these authors advise "Minimize disturbance within miles of where these plants occur, and anticipate wider occupation if plants are present before disturbance."

As described by Miller JH et al. (2010) A Field Guide for the Identification of Invasive Plants in Southern Forests, US Forest Service, Southern Research Station General Technical Report SRS-119, invasive roses are "often spreading along right-of-ways and invading new forests and forest margins."

¹⁰⁷ US Forest Service, Rosa multiflora. <http://www.fs.fed.us/database/feis/plants/shrub/rosmul/all.html> . US Forest Service, Eleaagnus umbellata, <http://www.fs.fed.us/database/feis/plants/shrub/elaumb/all.html>

¹⁰⁸ US Forest Service, Rosa multiflora. <http://www.fs.fed.us/database/feis/plants/shrub/rosmul/all.html> . US Forest Service, Eleaagnus umbellata, <http://www.fs.fed.us/database/feis/plants/shrub/elaumb/all.html>

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The invasive species plan would apply to the entire right-of-way including migratory bird habitat.

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IND244-23 **More questions: Revegetation seeding**

Although the ESC Plans, and Appendices N-11 and N-12, describe seeding mixes that include exotic plants that would likely inhibit forest regeneration, perhaps it is the “native” seed mixes described elsewhere in the DEIS that would actually be applied? If so, what plant species will be established by seeding? The DEIS fails to specify such. Since revegetation is essential to mitigation of potential environmental effects such as erosion and stream sedimentation in this mountainous landscape, this is not an insignificant detail. How are stakeholders expected to comment on the DEIS if species planned for seeding are not specified?

In sections other than the ESC Plan, the DEIS proposes that “native plant species”, including “low ground cover” species that would “flower for a long duration of the growing season” and create “habitat for native and domestic pollinators such as bees and butterflies” would be seeded. What is FERC’s basis for assuming that such species would be capable of controlling erosion and sedimentation in a manner that is adequate to satisfy environmental standards?

The DEIS states that the Wildlife Habitat Council will specify “native” seed mixes – but fails to specify who with the Wildlife Habitat Council will perform that role. Is that person qualified to make those recommendations? Does this person have experience for specifying erosion-control seed mixes on steep slopes in the Appalachian mountains? Does this person have professional certifications? Do those professional certifications qualify the person to specify seed mixes that will control erosion and sedimentation on steep-slope disturbances of the Appalachian mountains in a manner that will satisfy relevant state and federal environmental standards – while also prescribing (apparently) novel seed mixes?

The DEIS states that “Temporary workspaces along waterbody crossings would also be revegetated with seeds of native tree and shrub species ...”¹⁰⁹ What species of trees and shrubs would these be?

IND244-23 See the response to IND244-19.

IND244-24 **Incorrect, misleading, and unsupported statements (selected, not complete)**

In Section 4.4.2.3 Interior Forest Fragmentation and Edge Effects, The DEIS states:

*“To minimize forest fragmentation and edge effects... Mountain Valley would plant seeds for native plant species during restoration and revegetation. Mountain Valley would minimize impacts with the implementation of the FERC Plan and Mountain Valley’s project-specific Erosion and Sediment Control Plans.”*¹¹⁰

This is statement incorrect, as the FERC Plan and Mountain Valley’s EISC Plans would not minimize “forest fragmentation and edge effects” as proposed. The DEIS has been prepared with the expectation that “natural regeneration” would occur in a manner that would eventually reduce forest fragmentation and edge effects, but proposes no actions to ensure or accelerate such outcomes. In fact, the DEIS’s ESC Plan recommends seeding with plant species would inhibit or prevent natural regeneration of native forest trees; and DEIS proposes an EISC Plan that would be totally ineffective, and thus would enable establishment and proliferation of exotic invasive plants in construction and right-of-way areas that have potential to hinder or limit forest regeneration in temporary workspaces. The DEIS fails to specify soil mitigation procedures that would support forest regeneration, including amelioration of soil compaction non-corridor temporary work spaces – such as temporary access roads and work yards where soils are likely

IND244-24 See the response to IND244-8.

¹⁰⁹ DEIS, p.4-169 & 4-170 (p. 406-407 of 781).

¹¹⁰ DEIS, p. 4-146 (p. 383 of 781).

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IND244-24 cont'd | to become compacted but where native forest regeneration (if occurring) would reduce forest fragmentation and edge effects,

IND244-25 | Also in Section 4.4.2.3 Interior Forest Fragmentation and Edge Effects, the DEIS states
“Construction of the MVP in Virginia would result in temporary impacts on about 500 acres of ECA categorized as Outstanding to High and permanent impacts on about 195 acres of ECA categorized as Outstanding to High.”¹¹¹
This statement is incorrect, as permanent impact on Ecological Core Areas (ECAs) would be far greater than 195 acres. The 195 acre figure fails to include indirect effects which would be “permanent” in the same sense as that term is used above. Numerous other statements in the DEIS Sections 4.4 and 4.5 suffer from this same flaw, e.g. describing “effects” and “impacts” that include only direct effects, and fail to include indirect effects.

IND244-26 | In Section 4.4.2.5 Non-Native Invasive Plants and Weeds, the DEIS states
“Mountain Valley and Equitrans would restore and reseed construction areas as quickly as possible which would promote establishment of native species within disturbed areas, which would tend to limit colonization by invasive plants.”¹¹²
I am aware of no scientific studies that demonstrate the presence of native plants is able to limit colonization by invasive plants in any way that is unique due to their nativity, when those native plants are established in an environment that is divorced from the native ecosystems in which they typically reside. Clearly, intact and healthy native ecosystems “limit colonization by invasive plants”, but that would not be the situation within the pipeline corridor and that is not what is stated.

In discussing potential impacts to Jefferson National Forest, the DEIS states

“To expedite the establishment of wildlife habitat ... Mountain Valley would adhere to its Exotic and Invasive Species Control Plan to ensure that invasive species are adequately controlled and native forage seeding is successful”¹¹³

and

“Permanent impacts on game species would occur where herbaceous vegetation is maintained in place of forested habitat within the Jefferson National Forest. However, forage vegetation, such as shrubs and grasses, would be expected to recolonize quickly after restoration. Mountain Valley would adhere to its Exotic and Invasive Species Control Plan to ensure that invasive species are adequately controlled and native forage seeding is successful.”¹¹⁴

These statements are incorrect. As demonstrated above, the EISC Plan that is incorporated by reference into the DEIS would not be capable of “controlling” invasive species in any sense other than the limited controls that would be instituted as “hand cutting” during the first two years but would be totally ineffective over the long term.

¹¹¹ DEIS, p. 4-145 (p. 382 of 781).

¹¹² DEIS, p. 4-149 (p. 386 of 481).

¹¹³ DEIS, p. 4-169&170 (p. 406-407 of 781).

¹¹⁴ DEIS, p. 4-170 (p. 407 of 781).

IND244-25 | See the response to IND244-4.

IND244-26 | We conclude that the invasive species control plan would be adequate.

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IND244-27

In Section 4.2.2.1 Soil Limitations, the DEIS states:

*"To prevent soil erosion, Mountain Valley and Equitrans would follow BMPs ... These BMPs include, but are not limited to ... revegetation using seed mixes recommended by the Wildlife Habitat Council (for the MVP) ..."*¹¹⁵

The DEIS presents no information to support the assertion that such seed mixes would be capable of controlling erosion and sedimentation. Neither the DEIS nor the Wildlife Habitat Council website presents any information to indicate that Wildlife Habitat Council personnel have erosion-control certifications, or have experience in designing seed mixes that would be adequate ensure erosion control in the terrain proposed for the Mountain Valley Pipeline.

IND244-27

We conclude that the Wildlife Habitat Council is qualified to provide professional advice on seed mixes.

IND244-28

In Section 4.4.2.2 Restoration of Vegetation, the DEIS states:

*"Mountain Valley would promote growth of ground cover species that flower for long durations throughout the growing season in an attempt to create new habitat for native and domestic pollinators such as bees and butterflies. Appendix N provides proposed seed mixes from Mountain Valley's project-specific Erosion and Sediment Control Plans."*¹¹⁶

Appendix N-12 (Recommended Seed Mixtures Mountain Valley Project – Virginia) lists nine seed mixes; all are comprised of non-native species, and tall fescue is prescribed to comprise >50% of total seed for seven of those nine mixes. The DEIS contains no information to support the contention that any of these recommended species would provide habitat for bees and butterflies.

Appendix N-11 (Recommended Seed Mixtures Mountain Valley Project – West Virginia) describes six seed mixes, five of which are comprised solely or primarily of non-native plant species; and thus, if seeded, would contradict numerous statements in the DEIS that native seed mixes would be used. Appendix N-11 does describe one seed mix (Alternative 3 – Wildlife Seed Mix) that is comprised of native plant species. The DEIS contains no information to indicate if any of these recommended species would provide habitat for bees and butterflies, or would flower for long durations. More importantly: The DEIS contains no information to suggest that this seed mix (recommended at 20 pounds per acre) would be adequate to establish sufficient plant cover to control erosion generally, on steep slopes, and/or on problematic soils – such as the stony rocky soils that occur over >1800 acres of areas proposed for construction disturbance¹¹⁷ -- within a reasonable time frame The DEIS describes such soils:

*"Typically, stony-rocky soils do not hold water well and exhibit a low revegetation potential due to low water content and higher seed mortality."*¹¹⁸

The above is just a partial listing of incorrect, misleading, and unsupported statements. The DEIS contains numerous statements concerning adverse effects mitigation and related issues, including revegetation, that are incorrect, misleading, and unsupported.

IND244-28

See the response to IND244-19.

¹¹⁵ DEIS, p. 4-65 (p. 302 of 781).

¹¹⁶ DEIS, p. 4-144 (p. 381 of 781).

¹¹⁷ DEIS Table 4.2.1-1, p. 4-56 (p. 293 of 781).

¹¹⁸ DEIS p. 4-61 (p. 298 of 781).

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IND244-29

Conclusion:

Logic fundamental to the DEIS is flawed; and that flawed logic occurs throughout major sections of the DEIS.

The DEIS has found impacts to forest resources to be an adverse effect but has failed to describe that adverse effect fully; and, although describing the lengthy time required for forest regeneration within temporary workspaces as a factor that contributes to that adverse effect, fails to prescribe practicable means -- an active and effective reforestation plan -- that would both increase assurance of native forest regeneration and accelerate the process. NEPA requires that

“Federal agencies shall, to the fullest extent possible ... Use all practicable means ... to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment”¹¹⁹

but the DEIS fails to meet that statutory threshold.

The DEIS also fails to prescribe practicable means that are essential if it wishes to avoid further adverse effects: an effective plan to limit establishment and to control exotic invasive plants. In the absence of such plan, exotic invasive plants are likely to become established in right-of-way and temporary workspace areas, impede effective regeneration of forest within temporary workspaces, and cause further adverse effects by invading and degrading forest resources adjacent to the corridor.

The DEIS fails to provide a coherent description of planned revegetation practices which are essential to mitigation of adverse effects – and to control of erosion and protection of streams from excessive sedimentation. The proposed pipeline’s construction through the Appalachian mountains would be a massive disturbance, and pipeline is proposed to pass through numerous sensitive environments. Revegetation of disturbed soils is fundamental to mitigation of adverse environmental effects. One could argue that: of all the mitigation practices proposed and described by the DEIS, revegetation is the most essential. Yet, the DEIS fails to describe clearly how disturbed areas will be revegetated.

The DEIS incorporates by reference a Migratory Bird Conservation Plan that prescribes practices that are inconsistent with what is stated elsewhere in the DEIS; and fails to describe why those prescribed practices would be a superior to active reforestation as a means for supporting migratory birds.

The DEIS has been prepared without apparent recognition of fundamental NEPA concepts. The DEIS approach to mitigation of adverse effects to forest resources, to revegetation, and to related issues is thoroughly flawed. Because these issues are so essential to environmental restoration and, hence, to the DEIS, the DEIS is infused with false, misleading, and unsupported statements. The DEIS fails to meet basic thresholds for logic and internal consistency. In light of these significant problems, FERC should withdraw the DEIS.

¹¹⁹ National Environmental Policy Act, Section 102.

IND244-29

Comments noted. See the responses to IND244 above.

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IND244-29 | I am a registered intervenor in the Docket CP16-10 proceedings, and I am sending these
cont'd | comments to the full service list via e-mail as per FERC policies.

With regards,



Carl E. Zipper, Blacksburg Virginia 24060

Cc: US Forest Service, comments-southern-georgewashington-jefferson@fs.fed.us
US Bureau of Land Management, vcraft@blm.gov, miberat@blm.gov
Appalachian Trail Conference, lbelleville@appalachiantrail.org

INDIVIDUALS

IND245 – Orus Ashby Berkely

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Dear Secretary Bose and Members of the Commission:

IND245-1

I am, once again, notifying the FERC and EQT that the proposed crossing by the Mountain Valley Pipeline of the Greenbrier River at Pence Springs, West Virginia—which the MVP proposes to use my property to access—is a historically significant location which the pipeline would destroy by its very presence. I also need to document errors in the Draft Environmental Impact Statement which point to the Applicant's continued refusal to acknowledge potential harm posed by the Mountain Valley Pipeline to cultural and natural features in this area.

POTENTIAL NEGATIVE IMPACTS TO RECREATION and TOURISM IN SUMMERS COUNTY.

The National Rivers Inventory lists the Greenbrier River as a free-flowing river with outstandingly remarkable natural and cultural values of national significance. The Greenbrier River is the only river proposed to be crossed by the MVP listed as significant in 5 categories: Scenery, Recreation, Geology, Fish, and History. The only Inventory category not included is Prehistory, which should be corrected: see documentation below. **The DEIS does not acknowledge that the Greenbrier River is an important source of recreational and tourism income for Summers County. Any negative impacts to the River will reverberate throughout our local economy.** As evidence of the significance of the Greenbrier River as an important recreational resource for Summers County and adjoining counties, I am attaching a summary of the presentation of a petition with 1,650 signatures from West Virginians and visitors from around the country, which was delivered to West Virginia's Governor and legislative leaders on August 17, 2015 asking that the Greenbrier River be protected from the planned intrusions of the MVP project.

[August 17, 2015](#)

Petition Presented to WV Political Leaders Today, Liz Tobey, organizer of PreserveGreenbrierCounty.com, Leah Bryson, Environmental Scientist, and several members of the organization presented petitions to protect the Greenbrier River from the MVP pipeline to the Governor, the Senate President, and Speaker of the House of Delegates. The petition was hosted online and signatures gathered by [MoveOn.org](#), which also organized the media coverage of the

IND245-1

Section 4.9 of this final EIS has been revised to discuss recreation and tourism at the Greenbrier River.

INDIVIDUALS

IND245 – Orus Ashby Berkely

IND245-1 | presentation (3 WV television stations - 3, 8, 11). Liz and Leah were interviewed. The petition
cont'd | has 1650+ signatures from West Virginia and around the United States.

IND245-2 | **MVP and the DEIS do not acknowledge that a recreational campground of privately
owned properties and vacation homes is within a few hundred feet of the proposed
crossing; how can this not be a high consequence area?** The proposed route across
the Greenbrier River at Pence Springs directly jeopardizes these properties and,
potentially, the lives of their owners, as well and would destroy the viability of my own
rental properties. In addition, I am deeply concerned that there are numerous families
in my community within the PIR of the proposed MVP. In response to requests from a
sizeable group of members of my community, we have dedicated this property on the
Greenbrier River at Pence Springs as the site of The Greenbrier River Chapel and
Spiritual Gardens. We have held a dedication ceremony attended by area residents
and members of neighboring communities. Families are planting flowering trees with
memorial plaques in memory of their parents and other loved ones. We have dedicated
this site as a place of remembrance and spiritual renewal for anyone seeking to reflect
on the gifts bestowed by their loved ones, and the gifts bestowed by this beautiful
location in our valley and the Greenbrier River itself.

IND245-3 | **I ask that FERC and the cooperating agencies give serious consideration to the
potentially significant negative impacts of MVP's proposed route and crossing of the
Greenbrier River at Pence Springs based on the additional following facts:**

HISTORIC SIGNIFICANCE. The land along the Greenbrier River at Pence Springs
contains remnants of past civilizations documented in the historical and archaeological
study of Pence Springs: "Pre-History along the Greenbrier" by Nancy O'Malley of the
University of Kentucky.

IND245-4 | ENVIRONMENTAL HABITAT SIGNIFICANCE. The Greenbrier River houses colonies
of mussels protected under West Virginia state law. **I cannot locate plans in the DEIS
for following protocols to relocate mussels in the vicinity of the proposed crossing of the**

IND245-2 | See the response to comment IND2-1 regarding safety.

IND245-3 | As discussed in section 4.10 of the EIS, where permission has been granted, cultural resource surveys have been conducted along parcels that would be impacted by the MVP. Table 4.10.1-2 of the EIS notes archaeological sites at the Greenbrier River near the community of Pence Springs.

IND245-4 | As stated in section 4.6.2.7 of the EIS, Mountain Valley would reduce impacts on freshwater mussels by relocating mussels in the construction zone in accordance with both West Virginia and Virginia mussel protocol documents. All fish and freshwater mussel relocations would be supervised by qualified, professional biologists in possession of pertinent federal and/or state permits.

INDIVIDUALS

IND245 – Orus Ashby Berkely

20161121-5053 FERC PDF (Unofficial) 11/21/2016 8:02:10 AM

IND245-4
cont'd | **Greenbrier River. Please see the comment submitted to PF15-3 by the Center for Biological Diversity, Accession # 20160502-5219.**

IND245-5 | **GEOLOGICAL HAZARDS.** The crossing of the river lies within a karst area that borders Summers County and Monroe County, West Virginia. **The DEIS indicates in Table 4.3.2-8 (pp. 4—97-98) that the Greenbrier Crossing is not in an area of shallow bedrock ("shallow" being defined as anything less than 7 feet). This is not accurate! While the valley floor around the crossing may provide 81 inches of soil above bedrock (or more), the streambed itself does not. According to the Indian Creek Watershed Association Interactive Environmental Map, the streambed of the Greenbrier (like many streams in Summers County and elsewhere on the route) is actually made up of bedrock: distance to bedrock is reported as 0 – 18 inches. This means it is likely that extensive blasting will be required to install the pipeline—a fact that increases concern for impacts on the river and for the nearby Big Bend PSD.**

IND245-6 | **HAZARDS OF FLOODING.** The DEIS does not acknowledge that the very area that MVP has targeted to cross this historic river has just experienced a flood of the magnitude of a 500 years' flood. The Greenbrier River has experienced 5 floods of similar or greater magnitude in less than 50 years. The proposed crossing of the Greenbrier River by the Mountain Valley Pipeline is a disaster in the making. MVP says the pipeline will be used for at least 50 years: in the past 49 years, the Greenbrier River Valley has seen floods of the following depths, any of which would have removed MVP's construction yards:

- 1) 24.33 ft on 01/20/1996
- (2) 23.95 ft on 11/05/1985
- (3) 22.00 ft on 06/24/2016 (P)
- (4) 20.30 ft on 12/27/1973
- (5) 19.90 ft on 03/07/1967

IND245-5 | As indicated by the footnote on table 4.3.2-8, the data provided is from USDA, 2015 rather than publically available data. The data source may not cover all areas that would be impacted by the proposed projects. As stated in section 4.6 and 4.3 of the EIS, the Applicants would attempt to avoid blasting during waterbody crossings. If blasting is deemed necessary, the Applicants would prepare and implement project-specific blasting plans, in coordination with federal and state agencies, to minimize impacts on aquatic species.

IND245-6 | A revised discussion of flash flooding is provided in section 4.3.2 of the final EIS.

INDIVIDUALS

IND245 – Orus Ashby Berkely

IND245-7 | POTENTIAL IMPACTS TO THE BIG BEND PUBLIC SERVICE DISTRICT at Talcott, West Virginia. **The DEIS presents three conflicting estimates of distance of the intakes for the Big Bend PSD from the proposed crossing (Table 4.3.2-3, Table 4.3.2-4, and intervening text). The relation of the proposed pipeline, all construction areas, and the PIR to the Zone of Critical Concern for the PSD should be precise, and can only be determined in consultation with the Big Bend PSD directly. These conflicts in data reporting are appalling—and frightening for what they suggest about the lack of seriousness being devoted to the planning of this project.**

IND245-8 | As you are aware, I have not permitted access for surveying of my property by MVP. On November 15, 2016, the West Virginia Supreme Court upheld a decision by Monroe County Circuit Court Judge Robert Irons that the Mountain Valley Pipeline project's representatives cannot access a landowner's property to survey for the MVP without the owner's permission: <http://www.wvgazette.com/news-business/20161115/wv-supreme-court-sides-with-landowners-on-unauthorized-gas-line-surveys>
<http://www.appalmod.org/2016/11/15/wv-supreme-court-no-pipeline-surveys-for-private-gain/>

For additional issues I do not find addressed in the DEIS, please see my previous comment to FERC: CP16-10-000, Accession # 20160223-5034, February 22, 2016.

Respectfully submitted,

O. Ashby Berkley
Pence Springs, West Virginia
Landowner and Intervenor

IND245-7 | Section 4.3 in the final EIS has been revised as necessary to accurately depict the distance of intakes for the Big Bend PSD from the MVP.

IND245-8 | It is noted that the commentor did not grant survey permission.

INDIVIDUALS
IND246 – Jonathan Hines

20161121-5256 FERC PDF (Unofficial) 11/21/2016 4:54:53 PM

This is a form letter. 203
copies of this letter have
been submitted.

Federal Energy Regulatory Commission
Kimberly D. Bose, Secretary
888 First St. N.E. Room 1A
Washington, DC 20426

RE: Docket #CP16-10-000 (Mountain Valley Pipeline)

Ms. Bose,

IND246-1 As a lover of the Appalachian National Scenic Trail (A.T.) who has walked its entire length, I am concerned about the proposed Mountain Valley Pipeline. This proposal would do serious and unavoidable damage to the Appalachian Trail. The A.T. is a source of peaceful rejuvenation for millions of Americans each year — to permit the Mountain Valley Pipeline to sully this national landmark would be a tragedy and an embarrassment to our country. The main reasons why the Federal Energy Regulatory Commission (FERC) should not allow the Mountain Valley pipeline to be permitted include:

- The location of the proposed crossing is a scenic and unbroken forested landscape with an immediately adjacent federally designated Wilderness area. The proposed project would significantly degrade the views visible from up to 100 miles of the Appalachian Trail, including some of Virginia’s most iconic vistas — Angels Rest, Rice Fields and potentially McAfee Knob.

IND246-2 - The pipeline will travel through a designated seismic zone and over terrain that is considered extremely unstable. As the pipeline will run over multiple fragile natural resources — including multiple fresh water sources and protected forest areas — and near several communities, this presents a completely unnecessary and avoidable safety risk to people and the environment.

IND246-3 - In order to accommodate the visual and environmental damage that would be caused by the Mountain Valley Pipeline, the U.S. Forest Service agreed to lower the Jefferson National Forest Management Plan standards for water quality, visual impacts, the removal of old-growth forest, and the number of simultaneous projects passing through the borders of federally protected land. This unprecedented change is extremely reckless, as it would open the gates for future infrastructure projects to cause similar destruction.

IND246-4 - This project could have significant economic impacts on nearby communities, decreasing property values and depriving businesses of tourism dollars generated by Appalachian Trail hikers and visitors, who seek sections of the Trail unmarred by the impacts of energy infrastructure and other signs of construction.

I urge FERC to protect the Appalachian Trail and its surrounding landscape and communities. Please evaluate the comprehensive need for pipeline development to transport natural gas from the same Marcellus shale plays in a single Programmatic Environmental Impact Statement so that this infrastructure can be appropriately sited and the cumulative impacts to our National Parks, National Forests, and private lands can be understood before moving forward. It is FERC’s responsibility to do the right thing — the alternative will be a turning point for the worse in an area that offers recreation and inspiration for millions of people.

Sincerely,

Jonathan Hines

IND246-1 The EIS discusses the ANST and visual impacts in section 4.8.

IND246-2 See the response to comment IND2-1 regarding safety. Impacts to water resources and karst terrain are discussed in sections 4.3 and 4.1, respectively.

IND246-3 The FS has worked with MVP to develop project design features, mitigation measures and monitoring procedures to minimize the effects to the resources that the plan amendments were designed to protect.

IND246-4 The EIS addresses impacts on the local economy and tourism in section 4.9. The reasons the FERC did not prepare a programmatic NEPA document is explained in section 1.3.

INDIVIDUALS

IND247 – Christopher Corey Alder

20161122-5004 FERC PDF (Unofficial) 11/21/2016 9:08:05 PM

IND247-1

Christopher Corey Alder, Roanoke, VA.
As a Roanoke, Virginia resident who was born and raised in West Virginia, I am deeply concerned about threats to the natural environment in this region. I believe that the Mountain Valley Pipeline presents one such threat. I ask you to reject the proposed joint venture presented by EQT Midstream Partners, LP; NextEra US Gas Assets, LLC; Con Edison Gas Midstream, LLC ; WGL Midstream; and RGC Midstream, LLC, all private companies seeking to use public land for private gain.

Thank you for considering my request.

Christopher Corey Alder

IND247-1

See the response to comment IND7-4 regarding the findings of the EIS. See the response to comment IND36-2 regarding eminent domain.

INDIVIDUALS

IND248 – Rebecca Dameron

20161122-5036 FERC PDF (Unofficial) 11/22/2016 9:28:03 AM

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First St., N.E. Room 1 A
Washington, DC 20426

Re: Mountain Valley Pipeline, LLC
Docket No. CP16-10-000

IND248-1	Here are my comments regarding the DEIS of the Mountain Valley Pipeline which is wanting to use my land for storage, destroy part of my land for a permanent access road, and forever harm my community by slicing it in half – all for private gain.	IND248-1	See the response to comment IND47-1 regarding preparation of the EIS. See the response to IND2-3 regarding the fact that the MVP is not designed to export natural gas. See the response to FA11-12 regarding need.
IND248-2	While many of my comments are based on fact, some are spoken from the heart as the proposal is striking at my heart. 1) There is no public good for this pipeline except for those where the gas is exported and the company executives. 2) The DEIS does not address fully the probable destruction of the Bent Mountain/Roanoke Valley watershed. This is crucial. My water source will be affected. How will MVP mitigate a ruined well due to sediment increase or a contaminated water source? 3) Mill Creek, which runs through my property, is crossed several times by the proposed MVP pipeline. This feeds into the Roanoke River and the Roanoke Valley water system. How is this water to be protected?? How can a private corporation take away our good water?	IND248-2	Section 4.3.2.1 of the EIS discusses monitoring and testing of water wells within 150 feet of the proposed workspaces as well as testing of wells and springs within 500 feet of karst areas. See the response to comment FA11-17 regarding Tier III streams.
IND248-3	4) The proposed pipeline is also proposed to cross a Tier III Bottom Creek watershed on Poor & Bent Mountains in Roanoke County. How can a Nationally protected creek be allowed to be harmed by a private corporation for private gain? The sediment increase has a great potential to destroy protected species in the creek. The sediment increase has a great potential to destroy all life along the creek and damage the ecosystem of the Creek. 5) My 1865 built house is in the collateral damage zone of this pipeline. This is not mentioned in the DEIS. What is the mitigation for a damaged house? Or a ruined foundation? I am only one but I am one person who may possibly lose my house and/or my water source due to construction of this pipeline. Where is this mentioned in the DEIS? How can MVP fix this?	IND248-3	The commenter's home would be located more than 1,800 feet from the proposed pipeline. MVP is proposing to locate portions of access road MVP-RO-288 and ATWS 1307 on the commenter's property. Both the access road and the ATWS would be temporary. Therefore, following construction, these areas would be reseeded and restored. The commenter's home would be more than 400 feet from the ATWS and access road and shielded from these areas by a buffer of trees. Impacts to the commenter's home are not anticipated. As discussed in section 4.1.2.7 of the EIS, if blasting is necessary, Mountain Valley would conduct pre-blast and post-blast surveys at locations within 150 feet of the blasting activity. Mountain Valley would be responsible for any damage to structures due to blasting.
IND248-4	6) I did receive a letter about surveying on my property for November 7 and 8. I sent a certified letter back denying them permission on that date. They came anyway. That is not following the statute of the law. How does MVP and Coates keep getting away with not following the law?	IND248-4	The statements regarding surveys without permission are noted.
IND248-5	7) MVP going through the Jefferson National Forest is heresy. This is our land – again, how can a private company destroy what is ours? Will each citizen in the country be compensated? The proposed 500 foot swath of land to be destroyed for the pipeline will be an eyesore forever and will destroy the ecosystem of the JNF. The National Forestry Service should fight this for the benefit for all of us.	IND248-5	The statements regarding crossing the Jefferson National Forest are noted.

INDIVIDUALS

IND248 – Rebecca Dameron

20161122-5036 FERC PDF (Unofficial) 11/22/2016 9:28:03 AM

- IND248-6 | 8) The 80% slope that the MVP is proposing to go up and down – and through karst – is a dream. This has not been done and the errors and danger associated with it are immense. This has not been researched enough nor have these actions been fully addressed in the DEIS.
- IND248-7 | 9) MVP has not demonstrated a true need for the gas in this proposed pipeline.
- IND248-8 | 10) New routes have been proposed since the DEIS came out. What about the environmental impact statements for these areas? You cannot approve something that hasn't even been researched.

Rebecca Dameron
Bent Mountain, VA 24059

- IND248-6 | Steep slopes and karst are addressed in section 4.1 of the EIS. See the response to comment LA1-4 regarding existing 42-inch-diameter natural gas pipelines in steep slope areas.
- IND248-7 | See the response to FA11-12 regarding need.
- IND248-8 | FERC staff reviewed and evaluated this filing in the final EIS.

INDIVIDUALS

IND249 – Guy W. Buford

20161122-5060(31791810)

Guy W Buford, Rocky Mount, VA.

OUR ONLY EARTH

IND249-1

At this time of year I think of the Lakota and other Native Americans who loved the land. The spirit of the Native American people, the first people, has never died. It lives in the rocks and the forests, the rivers and mountains; the hearts of these people were formed of the earth that we now walk, and their voice can never be silenced.

Chief Luther Standing Bear wrote of the Oglala Sioux understanding: “from Wakan Tanka, the Great Spirit, there came a great unifying life force that flowed in and through all things.” Such attunement “gave the Lakota an abiding love. It filled his being with the joy and mystery of living; it gave him reverence for all life...filled with the essence of the Great Mystery”.

This mystery is still alive today, though often ignored. It moves through the paper-dry oak and beech leaves astir in our mountain trees. You can feel it on evening walks into the unfolding November dusk and voluminous darkness, via the land’s clammy, ancient vapors breathing up into the blackness of night.

DO NOT APPROVE THE MONTAIN VALLEY PIPELINE

Excerpts from Field Notes by Liza Field 11/19/16

IND249-1

Native American consultations are addressed in section 4.10 of the EIS.

INDIVIDUALS
IND250 – Cynthia Munley

30161121-0302 FERC PDF (Unofficial) 11/21/2016

Date: 11/10/16
 From: Cynthia Munley
 425 Roanoke Boulevard
 Salem, VA 24153
 Kimberly D. Bose, Secretary
 Federal Energy Regulatory Commission
 888 First Street NE, Room 1A
 Washington, DC 20426

ORIGINAL

FILED
 SECRETARY OF THE
 COMMISSION
 2016 NOV 21 P 2:04
 FEDERAL ENERGY
 REGULATORY COMMISSION

RE: Draft Environmental Impact Statement, Docket No. CP16-10-000

I am commenting on the Draft Environmental Impact Statement for the Proposed Mountain Valley Project and Equitrans Expansion Project (September 16, 2016), Docket No. CP16-10-000 and Docket No. CP16-13-000.

IND
250-1

Date: 11/10/16

IND250-1

Impacts on water resources, and measures to reduce those impacts, discussed in section 4.3 of the EIS. See the response to comment LA1-7 regarding herbicides and pesticides.

IND250-2

See the response to comment LA1-4 regarding existing 42-inch-diameter natural gas pipelines in steep slope areas. See the response to comment FA8-1 regarding the 500-foot-wide utility corridor on the Jefferson National Forest.

IND250-3

See the response to comment CO2-1 regarding benefits of the project. System alternatives that would make use of existing or other proposed natural gas facilities are discussed in section 3.3 of the EIS.

IND
250-2

IND250-4

See the response to comment IND36-2 regarding eminent domain. See the response to IND2-3 regarding the fact that the MVP is not designed for export.

IND
250-3

1.
 I live in Salem, Virginia—nearby the targeted location for the MVP’s proposed 42 -inch pipeline for fracked gas. As a hiker, mountain admirer and drinker of clean water, I will be adversely impacted by this extra-large pipeline. The MVP will traverse a watershed on Bent Mountain which is the source of the Roanoke River from which Salem gets its drinking water. I am deeply concerned about herbicides that will regularly be applied in this watershed area for my family and all the inhabitants of the affected areas. This region is not appropriate terrain for an oversized, pressurized 42-inch gas pipeline. Views of our beautiful and iconic mountains is our region’s greatest asset. Citizens currently paying attention react in horror to the prospect of this ill-conceived pipeline. The 500-foot wide right-of-way swath for the “utilities corridor” will spoil our famous and treasured Blue Ridge mountains with all the accompanying safety and environmental harms. The MVP pipeline is unnecessary and will bring no economic benefit to the affected areas. A Department of Energy report stated that we already have adequate pipeline capacity (Natural gas infrastructure DOE Feb. 2015). We know that the gas is destined to be sold abroad for private profit. Using eminent domain for private profit is wrong. This region is not appropriate terrain for an oversized, pressurized 42-inch gas pipeline.

IND250-5

Impacts and mitigation on tourism are discussed in section 4.9 of the EIS.

IND
250-5

IND250-6

Section 4.8 of the EIS includes an analysis of visual impacts.

IND
250-6

IND250-7

Steep slopes and karst are addressed in section 4.1 of the EIS. Impacts on water resources, and measures to reduce those impacts, discussed in section 4.3 of the EIS.

IND
250-7

IND250-8

See the response to comment LA2-1 regarding the public comment sessions.

IND
250-8

IND250-9

The statements regarding crossing the Jefferson National Forest are noted.

IND
250-9

The MVP will harm our area’s attractiveness and the character being developed on which Roanoke City is building its economic future—a region of Southwest Virginia with diverse natural beauty and a pristine environment. For example—Roanoke is becoming a gateway to an outdoor playground which includes the Appalachian Trail, the Blue Ridge Parkway and 400 miles of hiking trails within one hour’s drive. Also, micro-brewing beer companies have been attracted to this region due to its high quality of life and natural beauty. Unsullied vistas of our mountains from the Roanoke Valley are essential to pursuing this economic strategy. Economic development depending on our natural beauty will be harmed by the MVP and the *Utilities Corridor* whose now-proposed immense 500-foot swath will be visible from 40% of Roanoke Valley. FERC’s process has been inadequate in addressing the effects of bringing such a pipeline over so many steep slopes and unique karst topography which has a delicate system of water sources. Also, FERC did not allow speakers to speak publicly so others could hear what is going into the public record. FERC appears biased in favor of the pipeline and is not being objective.

The U.S. Forestry Service should oppose the violations of existing rules for development now in place and disallow the proposed amendments which degrade standards for our public lands.* (See below)

INDIVIDUALS

IND250 – Cynthia Munley

20161121-0302 FERC PDF (Unofficial) 11/21/2016

IND 250-10	<p>Another major issue is the Rural Historic district on Poor Mountain of land passed down from George Washington to General Andrew Lewis, where the pipeline is charted to bisect. The Historic District must be preserved intact according to the law and cannot be ignored by MVP and FERC. I oppose the 500-foot wide “utilities corridor” designated for unnamed future projects that may not be needed once our country quickly moves to decentralized renewable resources—and quickly it must move if we are to leave a livable planet to our children.</p>
IND 250-11	<p>The pipeline is a major harm to our quiet and scenic mountains and the many watersheds located along the proposed route—especially since such a pipeline is completely incompatible with the area’s karst soil, intricate and highly-vulnerable water sources, caverns, sinkholes and steep slopes. Southwest Virginia has a working economy which does not need to be harmed by an unnecessary, economically-harmful and universally-despised pipeline. This project should not be forced upon our region. Sacrificing our region’s economy and environmental and aesthetic quality for private profit with no local benefits is wrong and must be rejected outright by FERC.</p>
IND 250-12	<p>These are the reasons the pipeline should not be approved by FERC:</p> <p>1. FERC has not demonstrated a need for the pipeline – NEPA requires an agency to define the “purpose and need” for a proposed project in its DEIS. Once it knows the need, FERC can analyze a range of alternatives to the proposal that meet the same need. Here, however, FERC has refused to determine the need for or public benefits of the Mountain Valley Pipeline as part of the NEPA process. Without defining the need that the project would satisfy, FERC cannot know what alternative measures—many of which would likely have significantly less severe impacts to the environment and to landowners— would also meet that need. FERC’s failure to comply with NEPA’s “purpose and need” requirement is especially problematic here because the MVP would have significant adverse impacts to public lands and would require the taking of private property through an extremely forceful use of eminent domain.</p>
IND 250-13	<p>2. The DEIS lacks critical environmental information – NEPA requires agencies to take a “hard look” at the environmental impacts of a proposed project and to make that information available to the public. Here, FERC released the DEIS despite the absence of information necessary to assess the impacts of the project on a wide range of resources, including streams, wetlands, threatened and endangered species, cultural resources, and recreation resources such as the Appalachian Trail. FERC has said that MVP can submit the missing information before construction begins. This, however, prevents the public participation in the decision making process required by NEPA. A thorough analysis subject to public scrutiny is particularly necessary here. A pipeline of this size has never been built through the steep terrain and karst geology of our region that MVP would cross. Past experience with adverse effects in the construction of the Celanese and Stonewall Gathering lines demonstrate that the public cannot rely on FERC’s assurances that such impacts will be successfully mitigated.</p> <p>This endeavor amounts to a very risky gamble with no known benefits but with potential catastrophes in locations that cross our national natural treasures mentioned above.</p>
IND 250-14	<p>3. FERC has failed to assess cumulative life cycle climate impacts – FERC’s assessment of both climate-altering greenhouse gas (GHG) emissions and the effect of those emissions on the environment is woefully inadequate. FERC’s analysis is unclear and difficult to evaluate. It ignores significant emissions sources such as pipeline leakage and production of the fracked gas that would be carried on the MVP. Further, FERC does not use readily available tools such as the social cost of carbon to estimate the environmental impacts of the GHG emissions, but rather simply compares the projected annual GHG emissions of the MVP Project to global</p>

IND250-10	Impacts on Historic Districts are discussed in section 4.10 of the EIS.
IND250-11	Steep slopes and karst are addressed in section 4.1 of the EIS. Impacts on water resources, and measures to reduce those impacts, discussed in section 4.3 of the EIS. See the response to comment CO2-1 regarding benefits of the project.
IND250-12	See the response to FA11-12 regarding need.
IND250-13	See the response to comment FA11-2 regarding pending information in the draft EIS.
IND250-14	Climate change, GHGs, and cumulative impacts are discussed in section 4.13 of the EIS. See the response to comment IND2-3 regarding hydraulic fracturing.

INDIVIDUALS

IND250 – Cynthia Munley

20161121-0302 FERC PDF (Unofficial) 11/21/2016

IND 250-14 cont'd	<p>GHG emissions and concludes they are insignificant. FERC’s approach mirrors its flawed analysis in other pipeline proceedings, which EPA has repeatedly criticized for failing to comply with the Council on Environmental Quality’s NEPA GHG guidance. On a broader scale, FERC’s runaway permitting of major, long-term natural gas pipelines commits the U.S. to continued fossil fuel dependence that is inconsistent with the emissions reduction goals necessary to curb global warming and commitments made in international agreements such as those at the Paris Climate Conference.</p>
IND 250-15	<p>4. FERC has failed to consider potential cumulative impacts of induced fracking – FERC has not analyzed whether there would be significant cumulative environmental impacts from additional fracking in the Marcellus and Utica shale formations of WV and PA to supply the MVP with gas throughout its lifetime. Despite clear statements from both production and transmission companies that new pipelines will sustain drilling in the area, FERC refused to consider the potential of severe environmental impacts of those fracking operations, such as deforestation, air pollution, and water pollution. NEPA requires that those indirect effects be analyzed in the MVP and they have not been. This EIS is a sham and gives the impression of FERC merely going through the motions instead of earnest evaluation. FERC is not considering other pipelines when considering each one and has also failed to consider the negative synergistic effect of all three planned pipelines which target Virginia—home to vast national forest.</p>
IND 250-16	<p>*The four proposed amendments are unacceptable and are contrary to the mission of <u>the U.S. Forestry Service, Amendments:</u></p> <p>1. I oppose the construction of the <i>Designated Utility Corridor</i> which purports to serve a public benefit by providing a reliable supply of electricity, natural gas, or water essential to local, regional, and national economies. I oppose constructing a “Utility Corridor of 500 feet wide (250 feet wide on each side of the pipeline). I also oppose any crossing of the Appalachian National Scenic Trail Corridor even with the 50-foot wide path. Our generation has been entrusted with this 2,000-mile continual path and we must preserve it for future generations.</p> <p>The rationale for Amendment 1 is false. Our region already has its supply of electricity, gas and water. Adding an unnecessary corridor for multiple utilities is despoiling the natural beauty of our region, when our local governments have already secured these resources and are relying on the natural beauty to build their economies. We all know that the natural gas is destined for foreign consumption, which makes a sham out of the suggested need for this “utility corridor.”</p>
IND 250-17	<p>2. I oppose granting of a temporary waiver to allow MVP to exceed restrictions on soil conditions and riparian corridor conditions. Those restrictions are there because they are necessary to maintain the integrity of the ground.</p>
IND 250-18	<p>3: I oppose giving the MVP the right to remove old growth trees within the construction corridor of the MVP pipeline.</p>
IND 250-19	<p>4: I oppose allowing the MVP to cross the Appalachian National Scenic Trail (ANST) on Peters Mountain changing the scenic designation from High to Moderate.</p> <p>The above amendments are contrary to the mission of the USDA Forest Service which is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations. The USDA Forest Service commitment to land stewardship and public service is the framework within which natural resources are managed. The proposed 500-foot wide “utilities corridor” disrupts the</p>

IND250-15	See the response to comment IND2-3 regarding hydraulic fracturing.
IND250-16	See the response to comment FA8-1. The FS has worked with Mountain Valley to develop project design features, mitigation measures and monitoring procedures to minimize the effects on resources the plan amendment were designed to protect.
IND250-17	The FS has worked with Mountain Valley to develop project design features, mitigation measures and monitoring procedures to minimize the effects on resources the plan amendment were designed to protect.
IND250-18	The comment is noted.
IND250-19	The comment is noted.

INDIVIDUALS

IND250 – Cynthia Munley

IND 1121-0302 FERC PDF (Unofficial) 11/21/2016
 250-19 forest and despoils it for future generations.
 cont'd

IND 250-20 In West Virginia, the use of explosives necessary to blast a trench through the sandstone top of the mountain deep enough to run pipe flat across the peak risks despoiling the water supply for many families and their farms, putting at risk eight billion gallons of water a year by (the MVP). The dangers of water contamination posed by acidic runoff also has a corrosive effect on the pipeline itself, resulting in leakage. This is a lot of danger factors that are not effectively mitigated by the DEQ asking the ACP and MVP to exceed normal requirements in three ways: (1) by describing what they're doing for literally every foot of pipeline, (2) by posting documents online for public viewing, and (3) by paying DEQ for costs incurred to monitor the pipeline construction.

IND 250-21 These requirements do not provide any reassurance at all. The DEQ should be doing so much more.

Kastning's report:

IND 250-22 Monroe County, West Virginia is well-known for a large number of caves, some of which are extensive (Hempel, 1975). Indeed, it is home to extensive areas of karst (*see* Appendix B, Maps 1 and 3). The proposed Mountain Valley Pipeline poses some significant concerns where it passes through the county.

The significant areas of potential problems associated with karst have been identified in letters and depositions by citizens and experts in Monroe County. Among those who submitted comments to FERC include, Dr. Alfred F. Ziegler (Professor Emeritus of Geology, University of Chicago, and resident of the county), Dr. Paula C. Dodds (Licensed Professional Geologist, Laurel Mountain Preservation Association), Harold 'Rocky' Parsons (geologist, expert on karst, member of the Monroe County Planning Commission), and Judy Azulay and Nancy Bouldin (members of the Indian Creek Watershed Association (ICWA). It is highly recommended that their input be considered. It is also instructive to consult the Karst Hydrology Atlas of West Virginia (Jones, 1997) for an overview of extensive dye traces performed in that state over the years. There are several areas of karst where the pipeline could inflict significant potential environmental impact. Some of those are outlined here – the details are in the reports listed by the people above.

Of particular interest are the letters from the Indian Creek Watershed Association of October 14, 2015 and November 13, 2015. The letters from Parsons, dated June 6 and November 26, 2015, provide additional information.

Of particular concern are karst features close to where the proposed corridor crosses Indian Creek near Greenville (MVP mileposts 181-182). Indian Creek, which drains significant karst to the east, flows directly into the New River to the west. Surface water and water in the underlying karstic aquifer would be at risk from the pipeline.

Another area of concern lies along Ellison Ridge and in the Hans Creek Valley (MVP mileposts 182-187). Numerous springs are located in this vicinity. Hans Creek is a sinking stream.

Considerable recharge enters the underlying aquifer at its resurgence and emerges 0.3 mile downstream. There are numerous subtle karst features, mostly sinkholes, that indicate that this is an important recharge zone.

Numerous karst features occur between Little Mountain and Peters Mountain (MVP mileposts 194-195). As reported in the above cited letters to FERC from the Indian Creek Watershed Association, there are several caves, sinkholes, and a sinking stream in the karst that would be crossed by the pipeline at this locality. There are many springs along Peters Creek Mountain that provide water for all three of the water districts in the county, serving up to 70 percent of the households, public schools, and other users. One of the most at risk is the Red Sulphur Public Service District. Sweet Springs Valley Water Bottling Company, an award-winning water bottling company, derives water from these springs.

As with other mountain ridges along the pipeline corridor, there is significant allogenic recharge to karst aquifers from upland, non-carbonate terrains in this part of West Virginia. The karst aquifers identified above

IND250-20 As discussed in section 4.1.2.7 of the EIS, if blasting is necessary, Mountain Valley would conduct pre-and post-blast testing and inspections of wells and structures.

IND250-21 A summary of construction and restoration for the entire MVP is contained within the EIS. All documents that have been filed with the FERC are contained within eLibrary for review by the public. See the response to comment IND152-1 regarding our third-party construction monitoring program.

IND250-22 See the response to comment IND62-1 regarding Dr. Kastning's report.

INDIVIDUALS

IND250 – Cynthia Munley

IND
250-22
cont'd

receive considerable recharge from allogenic sources. Hence, watershed delineation and establishment of buffer zones are critical in addressing impacts.

Slope stability and seismicity are 'red flags' in the Indian Creek to Peters Mountain section of the corridor. As seen in the data in Table 1-A, average maximum slopes are in excess of 40 percent.

Most of the soils indicated in Table 2 are poor in their ability to bear a high load. The likelihood of mass movement, including slides, is present along this segment of the corridor, leading to potential problems of slope stability as outlined in this Section of the report.

This part of Monroe County also lies within the Giles County Seismic Zone (see Appendix B, Figure 6A). Dr. Alfred M. Zeigler comments:

"The U.S. Geological Survey (Bulletin. 1839-E) reports that there was a 'landslide of considerable proportions' also reported at the time, on the face of Wolf Creek Mountain in Giles Co. The authors of this bulletin, published in 1990, searched for surface expression of 'neotectonic' features, such as recently active faults, without success, but did report 'a giant rock-slide complex on Sinking Creek Mountain,' also in Giles County, and [hypothesized] that it had been caused by seismic shaking, as had the 'numerous other rock falls and slides in the area. They also implied that crustal warping might be indicated by variations in the elevation of terraces along the New River. Of course, a major rock-slide would completely disrupt a pipeline and this prospect would be worse than crossing a fault. This is because a fault is a known quantity with a known location and sense of movement, and could probably be allowed for by the pipeline engineers. The location of rock-slides, however, would differ each time and the effects could not be allowed for, even if they could be predicted.

IND
250-23

2. Because of the unaddressed concerns I have identified above, and other significant information gaps that have been noted by other commenters and cited within the DEIS document itself, I request that the FERC issue a new DEIS with complete and corrected information, so that the public has an opportunity to assess and comment on the potential impacts of the project prior to the issuance of the FEIS.

3. Because of the unaddressed concerns I have identified above, and other significant information gaps that have been noted by other commenters and cited within the DEIS document itself, I request that the FERC issue a new DEIS with complete and corrected information, so that the public has an opportunity to assess and comment on the potential impacts of the project prior to the issuance of the FEIS.

IND
250
-24

If the FERC does not issue a new DEIS, I request that the FERC choose the No Action Alternative.

Cynthia Munley *Cynthia Munley or Cynthia J. Munley*

425 Roanoke Boulevard

Salem, VA 24153

Email: cmunley@live.com

Tel: 540 389 8915

cc: US Environmental Protection Agency

Docket Number: CP16-10-000

Cc: Joby Timm, Supervisor, and the BLM

IND250-23

The FERC issued a final EIS that addressed comments on the draft.

IND250-24

The No Action Alternative is discussed in section 3 of the EIS.

FEDERAL ENERGY REGULATORY COMMISSION
NATIONAL ENVIRONMENTAL POLICY ACT REVIEW FOR THE
MOUNTAIN VALLEY PROJECT & EQUITRANS EXPANSION PROJECT
DOCKET NOS. CP16-10-000 & CP16-13-000

PUBLIC SESSION COMMENT FORM

ORIGINAL

Comments can be: (1) left at the sign-in table, (2) mailed to the addresses below, or (3) filed electronically by following the instructions provided below.

Please send one copy referenced to Docket No. CP16-10-000 & CP16-13-000 to the address below.
For Official Filing:
Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE, Room 1A
Washington, DC 20426
See attached letter & information about fault zones (St. Clair fault & Giles County Seismic Zone)
To expedite receipt and consideration of your comments, the Commission strongly encourages electronic filing of any comments to this proceeding. See 18 CFR 385.2001(a)(1)(iii) and the instructions on the Commission's Internet web site at www.ferc.gov under the "e-Filing" link and the link to the User's Guide. Before you can file comments you will need to create a free account, which can be created on-line.

COMMENTS: (Please print; use and attach an additional sheet if necessary)

*The GC52 is located between
mvp mile marker 165 to 230
This covers part of Summers County
and all of Monroe County in West Virginia
and all of the Jefferson National Forest
and all of Giles County and part of
Montgomery County, Virginia.*

Commentor's Name and Mailing Address (Please Print)
*Shirley Hall
Rt. 1 Box 240F
Lindside, WV 24951
304-772-4339*

FILED
SECRETARY OF THE
FEDERAL ENERGY
REGULATORY COMMISSION
2016 NOV 21 P 2:00

IND
251-1

IND251-1

Earthquakes and fault lines are addressed in section 4.1 of the EIS. Section 4.1 of this final EIS has been revised to include a discussion of the St. Clair Fault.

INDIVIDUALS

IND252 –

20161122-5086 FERC PDF (Unofficial) 11/22/2016 11:50:11 AM

November 22, 2016

Kimberly Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Neil Kornze, Director
BLM Washington Office
1849 C Street, NW, Rm. 5565
Washington, DC 20240

Joby Timm, Supervisor
George Washington and Jefferson National Forests
5162 Valleypointe Parkway
Roanoke, VA 24019

Dear Ms. Bose, Members of the Commission, Director Kornze, and Supervisor Timm,

IND252-1

I am writing in reference to the September mailing request for comments on the proposed actions of the US Forest Service in response to the right-of-way (ROW) grant application submitted by Mountain Valley Pipeline (MVP) to construct and operate a pipeline across the Jefferson National Forest (JNF). I oppose the granting of the ROW changes to the Land Resource Management Plan (LRMP) for this forest, including the designation of a utility corridor in the JNF, which would be required if the application is approved.

As stated on the Forest Service website (<http://www.fs.fed.us/about-agency>), "The agency's mission is to sustain the health, diversity and productivity of the nation's forest and grasslands to meet the needs of present and future generations."

Based on the abovementioned Forest Service mission statement there is a clear and undeniable conflict of interest to use the National Forest to put one 42-inch natural gas pipeline route through the National Forest. Gas pipelines to not "sustain health diversity, and productivity of the nation's forest and grasslands..."

To allow a 500-foot utility corridor as proposed in the Mountain Valley Pipeline (MVP) Draft Environmental Impact Statement (DEIS) is nothing short of a travesty.

According to Wikipedia, "In 1911, Congress passed the Weeks Act (36 Stat.961) a federal law authorizing the government to purchase private lands for stream-flow protection and to maintain the lands as national forests."

IND252-1

See the response to comment FA8-1 regarding Amendment 1.

INDIVIDUALS

IND252 –

20161122-5086 FERC PDF (Unofficial) 11/22/2016 11:50:11 AM

IND252-1
cont'd

A 500-foot utility corridor will negate any possibility that the Forest Service can fulfill its objectives to protect stream-flow and/or to maintain the lands as national forests as required by the Weeks Act. This corridor will result in the cutting down of thousands of trees (some old growth), fragmenting contiguous forest lands, crossing 100's of streams, blasting bedrock, removing 1000's of years of soil and subsoil terrain, and altering watersheds which ultimately provide the clear, clean, fresh, drinking water thousands of residents of Appalachia depend on to recharge their aquifers which supply their private wells.

Specifically, the Weeks Act identified and purchased private land that "was deemed necessary to protect rivers' and watersheds' headwaters in the eastern United States" (https://en.wikipedia.org/wiki/Weeks_Act).

A 500-foot utility corridor carrying fracked gas and as yet, other unnamed substances will not adequately "protect rivers' and watersheds' headwaters..."

In the early 1900's this land was purchased from private landowners to safeguard the water quality of our nation. A 500-foot utility corridor that will transport dirty fossil fuels and bisect our national forest would eliminate any possibility of conserving our forest resources "for future generation."

The proposed amendments to the JNF, listed below, are alarming, and should be deliberated carefully. The possible impact of these propositions could be devastating and the National Forest irrevocably harmed if they are adopted. Consideration of public input is critical, and should not be ignored nor taken lightly by the Bureau of Land Management or the USFS.

Plan Amendment 1 - Proposed: management prescription (Rx) 5-C Designated Utility Corridors from these Rx's: 4J, 6C, and 8A1. The land allocation would be 500 feet, except as it crosses the Appalachian National Scenic Trail (ANST) and Peter's Mountain Wilderness. **A 500-foot ROW is tantamount to creating a de facto "pipeline alley" through both public and private land.** What the Forest Service does with its land directly impacts their neighbors, the private landowners. If a 500-foot wide Utility Corridor is designated in the JNF, it sets a precedent for future expansion and the potential for severe environmental impacts.

FERC restricts its review to the single applicant and not "future" possibilities of multiple uses of a utility corridor. Recent proposed legislation, House Resolution 2295, indicates that the future of siting and conducting environmental reviews will be streamlined. This will affect many landowners, Cultural Areas, and Historic Districts. The impact of the entire width of the designated corridor and whether that conflicts with the LRMP must be evaluated, as well as the impacts to private landowners within that same corridor.

IND252-2

The Project only Amendment 2 - Proposed to permit exceedance of soil and riparian corridor conditions, this is also not acceptable. Both Sinking Creek and Craig's Creek will suffer enough damage to its riparian banks with the construction. Their buffer zones

IND252-2

See the response to comment FA10-1 regarding Amendment 2.
See response to comment CO74-7 concerning Craig Creek and Brush Mountain.

INDIVIDUALS

IND252 – Robin Scully Boucher

20161122-5086 FERC PDF (Unofficial) 11/22/2016 11:50:11 AM

IND252-2
cont'd | should remain intact to minimize siltation of the waterbody. In addition, exceedance of soil conditions both ascending and descending Peters Mountain, Sinking Creek Mountain, and Brush Mountain will undoubtedly cause siltation of the waterbodies below, damaging critical habitats and drinking water sources. On the descent from Brush Mountain, Slussers Chapel Conservation Site would be negatively affected by exceedance of soil conditions. The State owned cave, Slussers Chapel Cave, has a B3 significance ranking for rare a millipede and isopods.

IND252-3 | **Proposed Amendment 3** - This amendment would allow the removal of old growth trees within the construction corridor. Ancient woodlands, have attained unique ecological features because they have not been disturbed. They are a *rare natural resource*, and it would take over a century to recover such a loss. To destroy these marvelous trees would be reprehensible.

IND252-4 | **Proposed Amendment 4** - This proposes crossing the ANST at Peter's Mountain. **Why cross at a greenfield** when there is an alternative, **Hybrid Alternative Route 1A?** Hybrid Alternative 1A crosses the ANST at Glen Lynn in an area where the land is already disturbed because it is crossed by utilities. The hybrid route would also cross National Forest for 1.6 miles instead of 3.4 miles with the proposed route.

It is imperative that we preserve the integrity of a forest system that is compromised by dynamic changes in the environment. Tree, animal, and plant species are threatened by these global changes and shifts in weather patterns and invasive plant and animal species. Fragmenting the forest with a 500-foot utility alley will cause irreparable damage to systems dependent on the natural order of habitat.

IND252-5 | My well water comes from the watersheds MVP proposes to traverse. I am also an avid outdoorswoman who spends quality time with family and friends in the national forests biking, camping, hiking, creating artwork, enjoying the diversity of plant and animal species and most of all respecting the resource. As a U.S taxpaying citizen, and as a

IND252-6 | water stakeholder, I find the request to allow a private corporation to profit off of a project that will forever alter a resource set aside for the public good to be nothing less than short-sighted.

Sincerely,



Robin Scully Boucher

IND252-3 | See the response to comment FA10-1 regarding Amendment 3.

IND252-4 | Section 3 of this final EIS has been revised to discuss the Hybrid 1A Alternative.

IND252-5 | Comment noted.

IND252-6 | Comment noted.

INDIVIDUALS

IND253 – Pat Curran Leonard

20161121-0291 FERC PDF (Unofficial) 11/21/2016

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

November 16, 2016

FERC

Docket Number: PF15-3-000,
CP16-10-000 or CP16-13-000
customer@ferc.gov

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SECRETARY OF THE
COMMISSION
2016 NOV 21 P 1:58
FEDERAL ENERGY
REGULATORY COMMISSION

ORIGINAL

Re: Opposition to the Mountain Valley Natural Gas Pipeline – Slope Shifts

IND253-1

On page 4-45 it states: “Calculations by D.G. Honegger Consulting indicate that potential hazards exist for triggered slope displacement due to a higher potential for seismicity between MPs 161 and 230 should the length of soil displacement over the pipeline exceed 1,580 feet for parallel slopes. Only one parallel slope was identified to exceed the 1,580 feet length at MPs 161.9 to 162.5. Mountain Valley would increase the pipe wall thickness to that of Class 2 pipe along this slope in order to mitigate hazards from any potential triggered slope movement. Mountain Valley also identified one area between MPs 161 and 230 where the pipeline runs perpendicular to a potential triggered slope displacement hazard. Mountain Valley has committed to using Class 2 pipe in this area in order to mitigate hazards from potential slope movement.”

Why can't MVP use Class III pipe along all areas with slope and terrains that are not on level grounds? If a Class 2 pipe mitigates hazards from potential slope movement, then it should be mandated that the highest class pipe be used for this project.

Where are similar pipelines that run natural or mixed gases at 42 inch diameter, that runs for 301 miles over similar slope and rugged terrain exist? What are the class types of those pipelines? What is the track record for a similar project? There must be a named pipeline and safety record documented on a similar project that people can look to for guidance. What are the accumulative effects from a similar pipeline that use a Class 1 vs. a Class 3 over karst and slope terrains.

Please do not approve this for-profit business that is not a public good or utility taking private property for their own business wealth.

Pat Curran Leonard

4638 Dillons Mill Road

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IND253-1

The MVP pipeline would transport natural gas (mostly methane); not “mixed gases.” See the response to comment LA1-4 regarding existing 42-inch-diameter natural gas pipelines. The DOT regulations determine class pipeline thickness as described in section 4.12 of the EIS.

INDIVIDUALS

IND254 – Pat Curran Leonard

20161121-0292 FERC PDF (Unofficial) 11/21/2016

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

November 15, 2016

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FERC

2016 NOV 21 P 1:59

Docket Number: PF15-3-000,
CP16-10-000 or CP16-13-000
customer@ferc.gov

FEDERAL ENERGY
REGULATORY COMMISSION

ORIGINAL

Re: Opposition to the Mountain Valley Natural Gas Pipeline – Karst Terrain Oversight

IND254-1

On page 4-49 the DEIS states: “The *Karst Mitigation Plan* outlines inspection criteria for known karst features in proximity to the right-of-way as well as those identified during construction. If a karst feature is identified, Mountain Valley would conduct a weekly Level 1 inspection and document soil subsidence, rock collapse, sediment filling, swallets, springs, seeps, caves, voids, and morphology. If any changes are identified during the weekly Level 1 inspection Mountain Valley would then conduct a more in-depth Level 2 inspection. A Level 2 inspection would include visual assessment, geophysical survey, track drill probes, infiltration, or dye tracing. If a feature is found to be connected to a subterranean environment or groundwater system, Mountain Valley would work with the karst specialist and appropriate state agencies to develop mitigation measures for the karst features.”

Who will be monitoring MVP to ensure all of the Mitigation, Erosion, and Sediment Control plans are being carried out to the letter of the plan? What are the details of where EQT proposed and then executed these plans in other pipeline projects? Who monitored and what actions were taken to report similar plans for pipelines of equal magnitude?

What is the governing agency that will ensure these mitigation plans are being followed? What are the karst specialist experience to conduct these assessments. What state agencies will be working with the karst specialist? How often will the state agencies be available to MVP and how will these agencies be funded to work along side with MVP?

Please do not approve this profit-making business that is taking private property for gaining wealth not for public good.

Pat Curran Leonard

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IND254-1

See the response to comment IND152-1 regarding our third-party construction monitoring program. The karst specialist that would be utilized on the MVP has not yet been determined.

INDIVIDUALS

IND255 – Pat Curran Leonard

20161121-0293 FERC PDF (Unofficial) 11/21/2016

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

FILED
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November 18, 2016

FERC

2016 NOV 21 P 1:58

Docket Number: PF15-3-000,
CP16-10-000 or CP16-13-000
customer@ferc.gov

FEDERAL ENERGY
REGULATORY COMMISSION

ORIGINAL

Re: Opposition to the Mountain Valley Natural Gas Pipeline – Soil Erosion

IND255-1

In Appendices A-M on page 4-59 it states:

“Construction of the MVP pipeline and ATWS would disturb about 4,189 acres of soils that are classified as having the potential for severe water erosion. None of the soils that would be disturbed by construction of the MVP are prone to erosion by wind. Aboveground facilities associated with the MVP would affect about 71 acres of soils that have a high potential to be eroded by water. The majority of soils (733 acres) with a high potential for erosion, not part of the pipeline right-of-way, would be associated with construction or modification of access roads.”

The above places yet another focus on how extreme this project is in that, it will disturb soils that have not only the potential but a high potential to be eroded by water. Locally, rain water has fallen in record numbers during some periods. Disruption of soils is highly regulated. Who will be monitoring the soil conditions all along the route? Why is FERC willing to put these soils at risk for erosion that is almost certain by the construction of MVP?

Soil disruption has a high potential to flow into water ways and increase run off into ponds, creeks, rivers and lakes. Some of the erosion locally has become so frequent that the damage becomes permanent.

Please do not approve this profit money making business application because MVP is not a public good or not a public utility.

Pat Curran Leonard

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540-929-5184

IND255-1

See the response to comment IND70-1 regarding erosion.

INDIVIDUALS

IND256 – Pat Curran Leonard

20161121-0295 FERC PDF (Unofficial) 11/21/2016

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

November 15, 2016

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FERC

2016 NOV 21 P 1:58

Docket Number: PF15-3-000,
CP16-10-000 or CP16-13-000
customer@ferc.gov

FEDERAL ENERGY
REGULATORY COMMISSION

ORIGINAL

IND256-1

Re: Opposition to the Mountain Valley Natural Gas Pipeline – Burning Brush during construction

In the draft EIS on page 2-38 it states: "Brush cleared from the construction corridor would be open burned (MVP only), windrowed, or chipped/mulched. According to Mountain Valley, chipped brush would be blown off of the right-of-way with landowner approval. Chips would not be blown into environmentally sensitive areas (i.e., waterbodies, wetlands, and habitat for special status species). Any open burning would be conducted on a site-specific basis, in accordance with applicable state and local regulations and Mountain Valley's *Fire Prevention and Suppression Plan*. Burning of cleared slash would only take place in upland areas, away from residences, waterbodies, and wetlands. No burning would be done within the Jefferson National Forest. Impacts on air quality during burning are discussed in section 4.11.1."

In the Southwest part of Virginia, droughts are a way of life. Burning of brush in a wooded and forested area is not recommended and could lead to forest fires that can get out of control with the limited fire/rescue resources in the rural communities. Why would no burning be permitted in the Jefferson National Forest because of impacts on air quality but why would air quality not be as critical for humans that live close to the pipeline construction? Do not allow any burning along the pipeline route.

Please do not approve this for-profit business that is not a public use or not a utility.

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IND256-1

As stated in section 2.4.2 of the EIS, open burning would be conducted on a site-specific basis, in accordance with applicable state and local regulations and Mountain Valley's *Fire Prevention and Suppression Plan*. Emissions due to open burning are estimated in section 4.11.1.3 of the EIS.

INDIVIDUALS

IND257 – Pat Curran Leonard

20161121-0294 FERC PDF (Unofficial) 11/21/2016

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

November 17, 2016

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2016 NOV 21 P 1:58
FEDERAL ENERGY
REGULATORY COMMISSION

ORIGINAL

FERC

Docket Number: PF15-3-000,
CP16-10-000 or CP16-13-000
customer@ferc.gov

Re: Opposition to the Mountain Valley Natural Gas Pipeline – Surficial Geology

In Appendices A-M on page 4-10 it states:

“Surficial geology that would be crossed by the MVP has not been mapped in detail in the project area. However the USGS map Surficial Materials in the Conterminous United States (Soller et al., 2009) depicts the project area as mass-movement sediments consisting of colluvium, alluvial sediments, loess, as well as residual materials formed from the weathering of metamorphic, sedimentary, and carbonate bedrock. Figure 4.1-1 presents the surficial geology that would be crossed by the MVP.”

The above lack of details in mapped geology needs to be addressed before a decision can be made or before the final EIS is released. Surficial geology needs to be addressed because of the issue of soil and erosion control. I would suggest FERC strongly recommend MVP survey and map current surficial geology along the entire MVP route and also at the Equitrans Expansion sites.

In the Spring of 2016, because the SW Virginia climate has extended periods of very dry weather followed by periods of heavy rains, Dillons Mill Road had a landslide along the road that slid across the road over the bank into the Blackwater creek/extension. The visual effects can still be seen as you drive towards Flanders Road.

These surficial ground movements happen always and often during periods of dry/wet weather. Where is the data of similar pipeline projects with steep slopes and elevation changes as along the MVP route.

Please do not approve this for business profit-making application that is not a public/utility.

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540-929-5184

IND257-1

IND257-1

The statement that surficial geology has not been mapped in detail was meant to convey that public data regarding surficial geology is not available. The FERC does not expect an applicant to map surficial geology for a project. See the response to comment IND70-1 regarding erosion. Landslides are discussed in section 4.1.2 of the EIS.

INDIVIDUALS

IND258 – Richard Ettelson

20161121-0301 FERC PDF (Unofficial) 11/21/2016

11-18-16

Richard Ettelson
2826 Trout Run Road
Waiteille, WV. 24984
(304) 772-3443

Kimberly Bose, Secretary
Federal Energy Regulatory Commission
888 First St NE
Washington, DC. 20426

ORIGINAL

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2016 NOV 21 P 2:09
FEDERAL ENERGY
REGULATORY COMMISSION

"FERC-MVP DEIS, Chapter 4.10.8, Cultural Attachment. Comments."

Docket No. CP16-10
Mountain Valley Pipeline

BACKGROUND-

IND258-1

The Federal Energy Regulatory Commission (FERC), the U. S. Forest Service (FS), and the Bureau of Land Management (BLM), are currently considering the approval of the Mountain Valley Pipeline (MVP) Project in the recently released Draft Environmental Impact Statement (DEIS) dated September 2016.

The Spiritual issue and other concerns associated with Cultural Attachment in the Peters Mountain Cultural Landscape Area were identified in many of the public comments for this project. I have previously sent in comments about this issue under Docket CP16-10 (submittal 20160524-0028), and under Docket PF15-3 (submittals 20150616-0137, 20150608-0139, 20150306-0028, 20150130-0028 and 20150827-0041). Applied Cultural Ecology (ACE) also captured this Spiritual issue in repeated specific references in their study that FERC ordered, and paid for by MVP, this study was dated January 2016 and is titled; "The Mountain Valley Pipeline Jefferson National Forest Segment Cultural Attachment Report" (submittal 20160127-5356, dated 1-27-16).

FERC's DEIS Cultural Attachment chapter 4.10-8 mentioned the Spiritual Issue on page 4-370, but it was never mentioned in the Cultural Attachment Effects Analysis that FERC wrote on pages 4-371 to 4-373, it was also never mentioned in the MVP cover letter (dated 1-26-16, submittal 20160127-5356) that responded to the ACE study. FERC's failure to recognize and analyze MVP's project on the identified Spiritual and other aspects of the Cultural Attachment resource makes the DEIS Effects Analysis useless in understanding the impacts on this and other significant issues. Errors, omissions, and misrepresentations in the DEIS need to be resolved.

IND258-1

Cultural Attachment was adequately addressed in Section 4.10 of the EIS. The effects analysis was written by professional scholars with undergraduate and graduate degrees and experience in Anthropology, including the sub-discipline of Cultural Anthropology. ACE's study was expanded beyond the Jefferson National Forest to include Peters Mountain in the project area. Section 4.10 of the final EIS has been updated to include any applicable new information.

INDIVIDUALS

IND258 – Richard Ettelson

20161121-0301 FERC PDF (Unofficial) 11/21/2016

IND258-1
cont'd

The following comments, issues, and concerns, are based on previous submissions that I filed in Docket PF15-3 and Docket CP16-10, and the DEIS that FERC prepared which raised additional subjects for my objections. These topics include; Incompetent Authority, Scope of the Analysis, Ethnographic Assessment, Long-term Adverse Impacts, Peters Mountain Rural Historic Landscape, NEPA, Sacred Ground, and the Spiritual Issue.

INCOMPETENT AUTHORITY-

Cultural Attachment is a complicated issue that has been identified in the MVP crossing of Peters Mountain and a few other locations along the Preferred Corridor. Leaving the determination of impacts in an Effects Analysis written by incompetent authority in this specialty area was a poor substitute for the required expertise that was identified in the FERC directive that required; **"The study of Cultural Attachment should be conducted by a qualified professional cultural anthropologist"** (Docket PF15-3-000, Submittal 20150811-3043, page 21, dated 8-11-15). The FS agreed that because of the complexity of the issue a Cultural Anthropologist should be used to study the issue.

Rebecca Austin, PhD, a Cultural Anthropologist with Applied Cultural Ecology was assigned to this task and she wrote the study at FERC's direction, but was excluded from participating in the DEIS Cultural Attachment Chapter, and was excluded from any involvement in determining the impacts from MVP's project in the Effects Analysis; **"No, we were not consulted, nor did we write, any part of the DEIS"** (Rebecca L. Austin, Ph.D., e-mail dated 10-10-16).

The Cultural Attachment Effects Analysis in the DEIS (Chapter 4.10.8) did not use competent authorities to determine their conclusions. On page 4-371 in the DEIS FERC stated; **"Below is our effects analysis for cultural attachment, written by our team of specialists, including professional cultural anthropologists based on the ACE report within the context of Mountain Valley's proposed action"** That is a false misrepresentation of the facts. FERC's footnote to that claim; **"So see the list of preparers in appendix W of this EIS."** only listed preparers with undergraduate degrees, or advanced training in Archaeology. There were no *qualified professional Cultural Anthropologists* included. **"The DEIS notes that a trained anthropologist prepared the mitigation recommendations for it, yet (among the list of preparers) the only anthropologists that hold any degrees beyond the B.A. are archaeologists, and only there is only one. Archaeology is a subfield in anthropology, but archaeologists are primarily concerned with material culture and not living cultures"** (Rebecca L. Austin, Ph.D., e-mail dated 10-10-16).

The FS (GW&JNF) is also following FERC's poor example of using incompetent authority by using their Staff Archaeologist to review the Cultural Attachment chapter in the DEIS. For whatever

INDIVIDUALS

IND258 – Richard Ettelson

20161121-0301 FERC PDF (Unofficial) 11/21/2016

IND258-1
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reason the Forest Service insisted on having a Cultural Anthropologist write the study so they'd be in a position to understand MVP's effect on this identified Cultural Attachment resource, should also apply to reviewing its finished product. If they don't have, or aren't able to access, competent authority they should select an independent third-party contractor to do their analysis for them and have MVP pay the cost instead of using their staff Archaeologist to assess such a complicated issue. The FS and BLM have a responsibility to protect the resources found on their land without delegating that responsibility to FERC or MVP.

Paul Friedman, the FERC Project Manager for the MVP Project, listed himself as having a undergraduate Anthropology and History degree, and a graduate degree in History. Neither of which qualifies him as an expert in Cultural Anthropology. A FS e-mail that detailed a conference call between Paul Friedman and Forest Service Staff Officer Karen Overcash, dated 6-23-15, (attached to my previous Submittal 20160524-0028, dated 5-21-16) indicated his ignorance and incompetent handling of this issue; **"In this morning's conference call with Paul Friedman, he stated that he was not going to include the comments we submitted about Cultural Attachment in their data request FERC will send to MVP in early July. He said that he is an anthropologist and he has never heard of that term, never seen it in the literature and he thinks it is a made-up term used specifically in the AEP EIS process."** With an undergraduate degree in anthropology Mr. Friedman doesn't know what he is talking about. Unfortunately, that doesn't stop him from directing the process. Ignorant presumptions in the DEIS are reflections of the incompetent authority found throughout the Chapter. Page 4-367 in the DEIS Chapter repeats FERC's Project Manager's mistaken belief that; **"Cultural attachment appears to be a phrase developed by JKA for its study in the powerline draft EIS."** The DEIS perpetuates that false statement according to Cultural Anthropologist, Rebecca L. Austin, Ph.D. (e-mail dated 10-10-16); **"This is incorrect; it was used with generally the same meanings by Billinas, Clark and Wagner prior to this. See sections 5.0.5.2, 5.4.1, and 5.4.2 (Benaston and Austin 2016). Wagner primarily looked at "cultural attachment to land" beginning in, or before 1993, prior to JKA's report."**

The process failed to produce an adequate Effects Analysis based on the ACE report within the context of Mountain Valley's proposed action as they indicated would be done on page 4-371 in the DEIS. **"I do agree, as noted in my comments that I sent you, that the effects analysis was not sufficient and it was not done by social scientists with graduate degrees"** (Rebecca L. Austin, Ph.D., e-mail dated 10-11-16). Competent authority is necessary for determining FERC's conclusions, that's why the FS insisted that a Cultural Anthropologist be used to determine the Cultural Attachment issue on MVP's crossing of Federal land, and FERC agreed by hiring ACE to write the Study, but in an effort to control a predetermined outcome, ACE was not consulted in preparing the DEIS Cultural Attachment chapter.

ACE was instructed not to include any consideration of measures to potentially mitigate negative impacts of MVP's Project on the Cultural Attachment Resource. Instead, that job was delegated to MVP's Senior Environmental Coordinator, Megan Neylon, who submitted MVP's 4-

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page response (Docket CP16-10, Submittal 20160127-5356, P. 73-76/272, Letter dated 1-26-16) to the 53-page ACE Study (Docket CP16-10 Submittal 20160127-5356, P. 77-133/272, dated 1-15-16) which introduced the ACE Study into the FERC record. That letter is another example of the Incompetent Authority used in the Cultural Attachment Chapter in the EIS. Rebecca L. Austin, Ph.D., who wrote the Cultural Attachment Study, answered MVP's response in her e-mail dated 10-10-16; **"Any mitigation for cultural attachment was not a part of our report, as requested by the client. However, mitigation efforts proposed by MVP, in their letter dated Jan 26, 2016, submitted with our report, showed no evidence that those recommendations were the result of any trained social scientists, therefore should not be considered relevant."**

FERC and MVP have manipulated the process through their use of Incompetent Authority causing errors and misrepresentations in their effort to expedite the Pipeline Project. The DEIS Cultural Attachment Chapter, and the Effects Analysis needs to be corrected and revised before FERC makes its final decision.

SCOPE OF THE ANALYSIS-

FERC's Project Manager, Mr. Paul Friedman, did not instruct ACE to do an Effects Analysis to determine what the impacts would be on this Cultural/Social resource as a result of MVP's project, instead he just wanted to know if the resource was present. ACE's finding was that it is present on Forest Service land and on private property in the larger project area. In an effort to dismiss the Cultural Attachment issue from the analysis by minimizing its importance, Mr. Freidman asked ACE the question; **"Do the people who reside in the vicinity of the pipeline route across JNF have a special kind of 'cultural attachment' that is different from other areas?"** Ace's answer was; **"Yes, the people who reside in the Peters Mountain area have a cultural attachment to the Study Area that is different from other areas here in the United States"**(ACE study, P. 47).

At FERC's Project Manager's direction the scope of this study was so constrained that the Cultural Attachment issue was impossible to fairly represent. ACE refused to be manipulated into subverting the issue to Mr. Freidman's agenda to limit the analysis just to Forest Service land and insisted on the need to expand the study area; **"Cultural attachment as described in this report and in prior studies in the MVP Project area is not limited to geographic boundaries. Therefore, to provide context for the current study, ACE determined that it would be more beneficial to conduct background research for the entirety of the Peters Mountain vicinity"** (ACE study, P. 2). Unfortunately, that was not their assigned mission so aside from indicating that an expansive study was necessary to understand MVP's impact on this Cultural Attachment resource on Forest Service lands, no comprehensive analysis was done.

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Even though the ACE Study looked at a larger area than what FERC assigned them to study, it was still too restricted to fairly evaluate the extent of the resource making any consideration of a fair-minded Effects Analysis impossible. Direct and Indirect Impacts from MVP's proposal extend far beyond Forest Service property. DEIS page 4-369 stated; **"Originally, the study area was intended to cover the MVP pipeline route crossing the Jefferson National Forest. However, this area has been mostly devoid of permanent residents since the National Forest was created in 1916. Therefore, the anthropological study concentrated on the adjacent landscape of Peters Mountain, which is crossed by the proposed MVP pipeline route between about MPs 194 and 200, in Monroe County, West Virginia and Giles County, Virginia."**

Although I appreciate FERC's belated realization that nobody lives on FS land, so the Cultural Attachment issue has to be considered on a larger scale, they still fail to grasp that the impacted Cultural Landscape extends beyond properties adjacent to the pipeline route. The Cultural Attachment resource has to be considered in a larger context than what was allowed by FERC's previous constraints. **"We feel that, given the brief time period of our research and site visit, that there is room for further anthropological research"** (Rebecca L. Austin, Ph.D., e-mail dated 4-20-16). A new expanded study should be done in order to understand the extent of the resource before an Effects Analysis considering the impacts of MVP's project on Forest Service land and private property can be determined. A more expansive study should be written by a Cultural Anthropologist to supplement the findings that the ACE study has already produced. **"Furthermore, even though the pipeline proposed route does not currently "cross" the middle of Peter's Mountain – it does cross part of it as well as Brush Mountain, Sinking Creek and Sinking Creek Mountain, among many other areas that, if studied sufficiently, would potentially be identified as cultural landscapes and places to which most residents have cultural attachment"** (Rebecca L. Austin, Ph.D., e-mail dated 10-10-16).

ETHNOGRAPHIC ASSESSMENT-

The entire view looking out on Peters Mountain from Monroe County West Virginia does not include Forest Service land which is on the other side of the mountain in Giles County Virginia. The ACE Study was commissioned by FERC to just investigate Cultural Attachment on Forest Service land effectively leaving out the West Virginia portion from the field of study. ACE found that constraint intolerable since Peters Mountain is part of a much larger Cultural Landscape, but they still limited their study of the MVP corridor excluding the larger affected area.

Page 2 of the ACE Study stated; **"The current study constitutes an investigation of the concept of cultural attachment for the portion of JNF lands as described in Section 1.2 that includes the MVP Project's crossing of 3.4 miles, and not the entire MVP Project corridor or its alternatives. It is not a complete ethnographic assessment of the JNF Study Area or Peters Mountain and the surrounding vicinity."** This omitted complete Ethnographic Assessment should have been included. FERC, the FS and the BLM must have access to a complete Ethnographic Assessment of the project area so they'll have the necessary data to determine what effect MVP's project will have on this Social/Cultural Resource. The e-mail dated 10-10-16

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from Rebecca Austin, Ph.D. Confirms that; **“Again, please be sure to take note that the 2016 ACE MVP report (Benaston and Austin) was not a complete ethnographic assessment of the project area.”**

In an effort to expedite MVP’s project, FERC has misrepresented ACE’s data adequacy study as a full ethnographic assessment of the project area in an effort to avoid the consequences of fairly considering the actual effects of MVP’s project on the Cultural Attachment Resource. **“The original task for ACE was to be a data adequacy study to determine whether or not additional work needed to be done in the region. Because of the overwhelming community response, and our ability to meet, interview, and hold public meetings with so many people, it seems that MVP and FERC is now considering the study to be a full ethnographic assessment of the project area. It is not”** (Rebecca L. Austin, Ph.D., e-mail dated 10-10-16). MVP’s impacts on this resource has been woefully understated in the DEIS. FERC’s fraudulent management approach in manipulating the data to suit their purposes requires a rigorous review.

LONG TERM ADVERSE IMPACTS-

The Cultural Attachment Chapter in the DEIS makes repeated unfounded claims that any negative effects would just be temporary and there would be no permanent effect. This claim has no basis in fact. **“The emphasis on temporary effects provides no evidence that effects will only be temporary”** (Rebecca L. Austin, Ph.D., e-mail dated 10-10-16). There is good reason to warrant an additional Cultural Attachment Study to supplement what has already been done to address the deficiencies in the existing inadequate and fatally flawed Chapter on Cultural Attachment, and the Effects Analysis that based its conclusions on a poor understanding of this complicated issue. On page 4-372 in the DEIS Cultural Attachment Chapter FERC stated; **“The project would not alter the quality of life in the region, or the slow-paced lifestyle valued by people interviewed by ACE, except temporarily during construction.”** This assessment is contradicted by the ACE contractor, Rebecca Austin, Ph.D., a Cultural Anthropologist who after reviewing the DEIS, stated; **“Again, the emphasis is on only temporary disruption to the way of life and cultural attachment. There is no evidence this would only be temporary”** (Rebecca L. Austin, Ph.D., e-mail dated 10-10-16).

In the Effects Analysis conclusion to their Cultural Attachment Chapter 4.10.8.1 on Page 4-373 in the DEIS, FERC stated; **“In summation, we conclude that the MVP will not have significant long-term adverse impacts on cultural attachment to the land in the vicinity of Peters Mountain.”** That conclusion is contradicted by the same authority that has already investigated the Cultural Attachment issue and produced the only Study authored by a Cultural Anthropologist whose work was used as the basis for the DEIS review and came to a totally different conclusion about the significant impacts of MVP’s Project on this recognized resource; **“I disagree with the DEIS statement that “MVP would not have significant long-term adverse impacts on cultural attachment to the land in the vicinity of Peters Mountain”** (Rebecca L. Austin, Ph.D., e-mail dated 10-10-16). FERC, the FS, and the BLM need to recognize this fact

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concerning short-term and long-term adverse impacts of MVP's project on this social/cultural resource. The Effects Analysis was deficient in recognizing this fact.

PETERS MOUNTAIN RURAL HISTORIC LANDSCAPE-

Additional studies would have to be done to understand how the Peters Mountain Rural Historic Landscape would be altered by MVP's project. This resource has been acknowledged as being present in the project area. FERC employs a limited view when it suits their purposes by minimizing the project's impacts to promote their pre-selected result by misrepresenting the facts to suit their conclusions: **"For half the route over Peters Mountain (3 out of 6 miles) the pipeline would be placed adjacent to existing powerline rights-of-way. Therefore, the viewshed is not pristine, including existing utilities infrastructure. We conclude that the character of the Peters Mountain rural historic landscape would not be significantly altered by the MVP"** (DEIS P. 4-371). The other half of the route (3 miles) that FERC refers to which dominates the viewshed as seen from Monroe County is indeed in a pristine condition covered by a beautiful forest with no existing utility infrastructure, the character of this Peters Mountain Rural Historic Landscape will be significantly altered by MVP's project at this location. FERC's casual dismissal of this issue in the Effects Analysis concerning the Peters Mountain Rural Historic Landscape, and the Spiritual aspect of the identified Cultural Attachment Area, is inappropriate and should be corrected by additional study.

Dr. Thomas King, Ph.D indicates that that if natural and cultural (Spiritual) aspects are intertwined, then they need to be considered within NEPA.

The following quote is taken from Dr.Thomas King, Ph.D (Docket CP16-10, submission 20160830-5133, P. 31) **"In its cover letter transmitting the Cultural Attachment Study to FERC, Mountain Valley Pipeline, LLC outlined eight "issues" that its environmental staff thought the study elucidated. These were:**

"Sharing land specifically for hunting, farming, trading, fruit and plant gathering, etc."

"Property Access"

"Impacts to cultural resources (sic)32, flora and fauna, and karst geology"

"Living off of the land"

"Protection/Utilization of water resources"

"Tourism and peace and quiet"

"Organic farming," and

"Condemnation and relocation"

(Mountain Valley Pipeline, LLC, letter of 1/26/16 to FERC)

The letter summarily dismisses all eight "issues," half with simple denials that any problems exist, the other half with cursory promises of mitigation measures."

MVP's discredited evaluation of the ACE study wasn't written by a Cultural Anthropologist, it was written by; Megan Neylon, MVP Senior Environmental Coordinator. MVP had a conflict-of-

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interest in the outcome of the Cultural Attachment Study and their assessment was used by FERC in developing their DEIS Chapter on Cultural Attachment, and in their Cultural Attachment Effects Analysis.

For the purposes of NHPA Section 106 review, MVP's denials and promises are insufficient in determining NHPA eligibility of the larger landscape as a traditional cultural place. MVP's opinion that appears to be supported by FERC, is contradicted on page 4-370 of the DEIS where it stated; **"In the opinion of ACE, Peters Mountain could be considered a rural historic landscape (Bengston and Austin, 2016)."** FERC's Effects Analysis failed to properly consider MVP's impacts on this Rural Historic Landscape. **"The findings of ACE that the area could be considered a cultural landscape and/or rural historic district would potentially more specifically change a number of the statements made throughout the DEIS regarding the need and legalities for mitigation"** (Rebecca L. Austin, Ph.D., e-mail dated 10-10-16).

FERC, the FS, and the BLM have an obligation to comply with The National Historic Preservation Act (NHPA). The following three paragraphs are quoted from Docket CP16-10, Submittal 20151023-5124, dated 10-23-15, James Kent Associates, EXPERT REPORT;

"NHPA was established (in 1966) to protect historical and archeological resources. Over time, through interpretation and case law, it has been extended as a tool to assist living culture as well. By documenting their Traditional Cultural Practices (TCP), people have been able to offer a defense of cultural practices that has led to curtailing destructive development or the mitigation of its impacts. The term "traditional," for the National Park Service (NPS), refers to "those beliefs, customs and practices of a living community that have been passed down through the generations, usually orally or through practice."

"The NHPA and the traditions within the National Trust used the term "historic vernacular landscapes" to reflect the unique ways that people over time shape the landscape on which they live. Congress's intent was to encourage individual Americans to defend and champion historic resources as part of the social fabric of the nation. It states: "Historic vernacular landscapes have evolved through use by the people whose activities or occupancy shaped that landscape. Through social or cultural attitudes of an individual, family or a community, the landscape reflects the physical, biological, and cultural character of those everyday lives. Function plays a significant role in vernacular landscapes. They can be a single property such as a farm or a collection of properties such as a district of historic farms along a river valley. Examples include rural villages, industrial complexes, and agricultural landscapes."

"The importance of the National Historic Preservation Act, and its interpretation and evolution over time, is that "historic vernacular landscapes" have been given legal weight and agency responsibility for sustaining "living cultural landscapes", (aka, "cultural attachment"). There is weight as well with the term "traditional cultural landscape," for which a case can be made in areas with high cultural attachment. If local residents use these terms to document their concerns about proposed federal actions, federal agencies, by virtue of the NHPA, must pay attention."

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Page 32 of the ACE study confirms that; **“Peters Mountain and the immediate surrounding area could be considered a historic vernacular or rural historic landscape”** (Docket CP16-10 Submittal 20160127-5356, P. 112/272, dated 1-15-16). NHPA has given legal weight and there is an agency responsibility for *sustaining living cultural landscapes* such as the historic vernacular landscape that ACE has identified on Peters Mountain.

In addition to the larger area that could be considered as a rural historic landscape in the ACE Study, NHPA eligibility for the Peters Mountain Area in the vicinity of the proposed MVP crossing is currently being evaluated by the National Park Service according to the recent FS DEIS comment; **“If the intent is to acknowledge that the NPS is currently leading an effort to determine whether the entire ANST is eligible for inclusion in on the National Register of Historic Places as a “cultural landscape,” then that should be explicitly stated”** (Docket CP16-10, Submittal 20161115-5013, dated 11-14-16, page 13).

The DEIS failed to consider NHPA eligibility on Federal land, and on private property, on the proposed MVP Peters Mountain crossing. FERC’s Notice of Availability for the DEIS, dated 9-16-16, pages 3-4, indicate the *Reasonably Foreseeable actions* where the FS JNF LRMP Amendments will be needed to make provision for MVP’s proposed crossing. Proposed Amendment 1 consists of a 500-foot wide Designated Utility Corridor designed to not only accommodate MVP, but to also encourage a future concentration of additional pipeline and other utility infrastructure projects through this sensitive Cultural Attachment Area which will have the potential to destroy this resource. This can prevent future NHPA eligibility on both Federal and private property in the Peters Mountain Area. In addition to my NHPA concerns, for the reasons contained throughout my DEIS comments I formally object to all four of these proposed Amendments.

NEPA-

In addition to NHPA compliance, NEPA also has requirements that apply to the FERC, the FS, and the BLM as described by James Kent Associates (Docket CP16-10, Submittal 20151023-5124, dated 10-23-15) in their EXPERT REPORT titled; **“The Scientific Validity of Cultural Attachment as a Social Phenomenon and the Basis for an “All Lands” Approach on NEPA Decision Making;”** The following quotes are taken from that document which I’m including here to illustrate the NEPA applicability to the Cultural Attachment issue.

“The National Environmental Policy Act (NEPA, 1969) is this country’s overarching policy on environmental protection. Through case law, it has been established that the two primary purposes of NEPA are to require federal agencies to consider the environmental effects of their decisions and to provide a way to inform and involve the public in federal decision-making. Although social and economic factors are listed in the definition of effects in the Council of Environmental Quality’s (CEQ) NEPA regulations (40CFR 1508.8), the definition of

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human environment states that “economic and social effects are not intended by themselves to require preparation of an EIS.” “However, an EIS [Environmental Impact Statement], and by implication an EA [Environmental Assessment], must include a discussion of a proposed action’s economic and social effects when these effects are related to effects on the natural or physical environments” (Bass et.al. 2001: p. 57, citing 40 CFR 1508.14).”

“The Forest Service has a long history of assessing the impact of its management activities on nearby communities and for generations has been concerned with its effects beyond national forest boundaries. Both the Forest Service and the Bureau of Land Management, as the primary federal land management agencies, have routinely considered the community effects of their decisions. “Off-site” impacts, including socioeconomic impacts, are generally considered indirect effects as defined in the NEPA regulations (40 CFR 1508.8) as follows:”

“Effects include: (a) Direct effects, which are caused by the action and occur at the same time and place. (b) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. Effects and impacts as used in these regulations are synonymous. Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.”

“In addition, federal agencies developing an EIS must consider cumulative impacts. Section 1508.7 of the Code of Federal Regulations (CFR) defines cumulative impact as follows: Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impact can result from individually minor but collectively significant actions taking place over a period of time.”

“Many communities that are nestled within the ridge and valley landscape of the southeastern Appalachian, and in some cases isolated by the surrounding National Forest lands, are culturally attached to their landscapes. The cumulative effect over time of the traditions, attitudes and practices has tied the residents of these rurally isolated communities to the land, to their physical space, and to kinship patterns that can transcend family bonds across the community. Each community is woven together with the surrounding landscape, including the National Forest. The National Forests and the communities that live between and among the forest lands are intertwined ecosystems.”

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SACRED GROUND-

Peters Mountain is the longest mountain in the Appalachians. Those that are exposed to this significant geophysical landform aren't restricted to adjacent landowners to the MVP right-of-way. Residents traveling through the area are affected, those raised in the county and moved to other places carry their sentiments with them, car traffic along route 219 and other side roads will also be exposed. Views from front porches from much of Monroe County are affected, even if the MVP line can't be seen directly they will still know it's there, just as a neighborhood rape has a wider impact affecting the entire community. You don't have to be living in direct view of the scar on the mountain to be affected by it. Passing by on county roads, living over a hill, visiting someone else, or living somewhere else doesn't change the Cultural Attachment that people feel for Peters Mountain. The impacts from compromising the Spiritual qualities that people have for the mountain should have been considered.

"For those of us who call Peters Mountain home, it is a very rare and special place where the mountain watches over us. It is sacred" (ACE study, P.29). A trespass of this sacred ground affects everyone here, not just the narrow area identified by FERC, or the slightly larger area identified in the ACE Study. For example; if a 2-inch wide strip was ripped out of the middle of your living room rug it would be inappropriate to not look at the larger impact of that missing strip. NEPA requires a wider view of a project's effects than the FERC, MVP, and the Forest Service seem willing to accept.

SPIRITUAL IMPACTS-

The Jefferson National Forest acknowledges this Spiritual perspective as being present on their property in their FEIS written for their Land And Resource Management Plan, Chapter 2, P. 2-33; **"In our revision outreach efforts, we heard from a diverse set of constituents that the Jefferson NF is very important from personal, societal and spiritual perspectives. These quality of life measures can be related to many of the other issues presented in this Chapter and throughout the EIS."**

From a Cultural Anthropologist's perspective; **"I agree the spiritual emotional and even aesthetic effects of the project should be considered"** (Rebecca L. Austin, Ph.D., e-mail dated 10-11-16). Spiritual impacts from MVP's project were never mentioned in the Effects Analysis for Cultural Attachment although it was identified in the FERC DEIS; **"The ACE study found that, in the Peters Mountain region, cultural attachment includes intangible aspects, such as emotional and spiritual feelings about the land; The ACE study found that, in the Peters Mountain region, cultural attachment includes intangible aspects, such as emotional and spiritual feelings about the land"** (DEIS P. 4-370). The ACE Study repeatedly details this identified the Spiritual issue throughout their study that documented this Spiritual resource as being present in the Peters Mountain Area, the terms they used to describe this Spiritual issue

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include; Spiritual ties to the land, Spiritual relationship, Spiritual anchors, Spiritual essence, Spiritual aspects, Spiritual sense, Spirit of place, and Spiritual feelings. The following paragraphs describe these terms used by ACE in more detail;

"The worldview of the local people and its relationship to the land where residents in the study area live is such that the best way to analyze intangible concepts like cultural attachment is to first consider the cultural landscape holistically. Their worldview is apparent in the way they have utilized the landscape while maintaining strong cultural, emotional, and spiritual ties to the land"(ACE P. 32).

"The authors (1996: 23-24) went on to describe the Peters Mountain area, for example, in which "poems and stories [have] established the mountain as hero," parallel "descriptions of cultural property which [are] often used in discussing Native American's cultural and spiritual relationship to land and place [e.g.]"(ACE P. 21),

"In the two valley communities studied, economic attachments, while existing, took a back seat to "genealogical, historical, aesthetic, and spiritual anchors" (Wagner 1999:241, 242)"(ACE P. 18).

"Sense of place relates to identity and metaphors can express identity, therefore interviews were also searched for metaphors. They were of two types: "one likened the land to a family member; the other gave the land a religious or spiritual essence" (Wagner 1999:245)"(ACE P. 20).

"This discussion of cultural attachment and sense of place has described the emotional, physical, and, in some cases, spiritual aspects of cultural attachment as well as material aspects, such as farmsteads and homeplaces"(ACE P. 31).

"A brief description of the importance of Peters Mountain is given: Some people there (Peters Mountain) talked about how they interacted with the mountain. Others talked about the mountain in a spiritual sense, almost giving it a persona"(ACE P. 22).

**"5.4.2.1 Environmental Psychology: Sense of Place
Within Environmental Psychology, the experiences of a person in a certain locale (such as "feeling stimulated, excited, joyous, expansive, and so forth") are considered a major part of sense of place, or "Spirit of Place." Although, primarily concerned with intangible feelings or spiritual aspect, environmental psychology considers both physical and social elements (Steele in Cross 2001)"**(ACE P. 25).

**"8.0 Conclusions
ACE was tasked with investigating the concept of cultural attachment as it relates to the JNF Study Area. A major finding of this research is that, in the JNF project area, cultural attachment includes intangible aspects, such as emotional and spiritual feelings about the land"**(ACE P. 46);

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The ACE Study conclusion confirms the Spiritual component of the Cultural Attachment resource found in the JNF Project Area, and in the considerably larger Peters Mountain Cultural Landscape. FERC failed to include this issue in their Effects Analysis. Impacts resulting from MVP's project on the Spiritual resource should have been considered.

REQUESTED RELIEF-

- 1) FERC has not made sufficient information available in the DEIS Cultural Attachment Chapter 4.10.8 (pages 4-366 to 4-373) to evaluate the Cultural Attachment Resource, and to understand the impacts of the MVP Project on this resource, which they have identified as being present on Federal lands and private property in the project area.
- 2) The previous Cultural Attachment Study by ACE was unduly limited by FERC to just narrowly focus on FS land although it was well documented that the Cultural Attachment Area was also present on private property. Although the ACE Study slightly expanded their study area beyond FERC's constraints, they did not do a comprehensive analysis which is the only effective approach in understanding this resource issue on Federal lands, as well as on private property. A new, expanded Study that includes an analysis of the Cultural Landscape impacted by MVP's proposed project should also include a complete Ethnographic Assessment, and an Effects Analysis, written by Cultural Anthropologists should be included in a Revised DEIS.
- 3) Before the FS, and the BLM can make a decision on the MVP proposal they need to understand the resources that they manage in the affected area before deciding on what the cumulative, direct, and indirect impacts will be. The required information of this Social/Cultural Resource concerning Cultural Attachment has not been made available in the DEIS which deprives the public of the opportunity to understand how MVP's Project may affect them. Since FERC does not have the authority to exercise Eminent Domain over FS lands, it is in their interest to also make the necessary information available to the Agencies that do have that authority.

Sincerely,

Richard Ettelson

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Maria Fernanda Ponce, Neptune Beach, FL.

Our planet is the only home we have and we have to respect it and protect it as much as we can. No amount of money, oil, or dirty energy is worth the beauty our nature provides. I am standing against the Mountain Valley Pipeline because it should be a priority to protect our natural resources and our wildlife as much as it is to have a good economy. I think greed is taking over politics and we are forgetting about the importance of keeping our planet healthy. Our planet needs us and this pipeline is too risky, it will damage eco tourism, and it could threaten our beautiful streams and mountain beauty. Please help keep our planet safe and healthy by not letting this pipeline be built. I urge you and I beg you to please consider. Nature is part of us and we need it. We should be fighting for cleaner and safer energy instead of making the same mistakes over and over again. Don't do this. Don't build this. HELP OUR PLANET PLEASE!

I was lucky enough to hike the Appalachian Trail back in September. It was the most amazing experience I have ever had. Not being able to smell any pollution, hear any traffic, see any buildings our development was almost holy to me and I know there are thousands, if not millions of people who feel the same way. If you build this, you will take this away from a lot of us, you will ruin an ecosystem and you will ruin the peace this earth brings naturally. It is very irresponsible for the government to go through with this. We should cherish what we have and keep it clean and healthy so it can survive for generations to come. Instead you guys are doing the opposite, all for money. Stop trashing our planet and think about the future generations to come and the state our planet is actually in. Stop putting money in front of safety and health. It is not fair for the people.

Thank you,

Fernanda Ponce

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Visual impacts to the ANST are discussed in section 4.8 of the EIS. Impacts and mitigation on tourism are discussed in section 4.9 of the EIS. Renewable energy alternatives are discussed in section 3 of the EIS. See also the response to comment IND40-1 regarding renewable energy.

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IND260 – Robert M. Jones

To: Ms. Kimberly Bose, Secretary
 Federal Energy Regulatory Commission
 From: Robert M. Jones, Ph.D. -- Registered Intervenor
 Date: 23 November 2016
 Re: Mountain Valley Pipeline, Docket CP-16-10-000
 Subject: Report on Why MVP Needs to Go Along the Ridge of Brush Mountain in Mt. Tabor

cc: Corps of Engineers
 VA DCR
 VA DEQ

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1. INTRODUCTION

I am a civil engineer, a military engineer and an Emeritus Virginia Tech Engineering Professor who has lived in the Mount Tabor area for 33 years. With that background, I prepared this report to warn of very serious karst and related water problems that exist on the Slusser’s Chapel Conservation Site portion of the Mount Tabor Variation (MTV) of the Mountain Valley Pipeline¹ (MVP). First, I describe the particularly sensitive karst surface and subsurface features that are all-important to understanding the danger to the aquifer under the Mount Tabor area posed by a pipeline. Next, I introduce the reader somewhat to the Mount Tabor geography by describing three pipeline routes through the area that have been proposed. Then, I explain in detail why having a 42” high-pressure gas pipeline cross four highly vulnerable karst and water areas along the MTV route will almost certainly cause irreversible, catastrophic damage to the water supply and water quality of the Mount Tabor area. That water in a complex deep and multilayered underground aquifer is absolutely essential to the hundreds of homeowners who rely upon it for their sole water supply. Finally, I discuss the advantages of avoiding this precarious route by following the Virginia Department of Conservation and Recreation (DCR) 9 Sep 2016 recommendation² to avoid most, but not all, of the Slusser’s Chapel Conservation Site by moving the pipeline to the ridge of Brush Mountain, i.e., the DCR “Avoidance” Route.

2. HOW KARST DETERMINES OUR WATER SUPPLY

Karst is a unique and challenging terrain that has many unusual characteristics which don't occur in most other terrains. Moreover, karst in mountainous terrain has problems that are not found in karst in flat terrains. Never before has a 42" high-pressure pipeline crossed the karst areas of the Appalachian mountain and valley fold of West Virginia and Virginia.

The stories of the karst and the water in our area are inseparable; they are inherently linked to enable the habitability of the Mount Tabor area. Karst and how it forms and then constitutes the aquifer that provides the sole source of potable water for Mount Tabor residents is the subject of this section. The karst came first in the form of water-soluble limestone or dolomite. Then, the water invaded the karst and dissolved it gradually over many centuries. The dissolving started in fractures or cracks or joints between and in the rock layers and gradually enlarged to progressively larger conduits or passages through which larger and larger volumes of water could pass. In time, some of the underground conduits grew to form caves and caverns. Sinkholes developed in this region from a conduit, passage, or in larger form as a cavity or cave under the surface that gradually grew until the ground above collapsed to form a sinkhole. The resulting karst geology now consists of both surface features and subsurface features.

2.1 Surface Features of Karst

The surface features of karst geology are sinkholes as well as disappearing and reappearing streams. Both features are quite readily observed only on the ground (and on some maps only in non-forested areas) as in Figure 1. The canopy of a forest generally shields the aerial view of nearly all karst features making “desktop reviews” incomplete and very unreliable because many karst features are simply not visible on aerial photos as well as on maps of rarely visited areas.

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As described in Mountain Valley’s *Karst Mitigation Plan*, karst specialists would monitor construction in karst areas to identify and monitor any karst features within proximity to or that develop during construction of the proposed project. Section 4.1 of the EIS identifies the monitoring and mitigation measures that would be used should an unknown karst feature be identified or develop during construction. See the response to comment CO14-3 regarding spills. The EIS provides a discussion of the procedures that would be used should blasting be required in karst areas in section 4.1.2.5. Construction of the proposed project could cause minor and or temporary changes in groundwater flow. See the response to comment IND92-1 regarding leaks. See the response to comment IND2-2 regarding drinking water and comment FA11-15 regarding sedimentation and turbidity. As discussed in section 3, the Mount Tabor Variation was selected to avoid identified karst features in the vicinity of the Mount Tabor Sinkhole Plain to the extent possible.

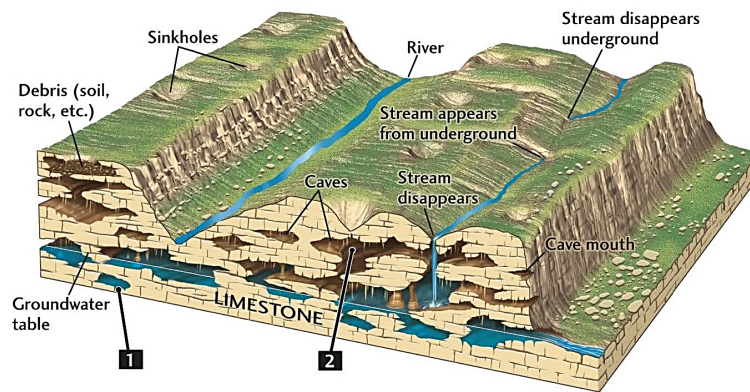


Figure 1 Deep Multilayered and Interconnected Karst Geology Typical of the Mount Tabor Area

It is well-known that karst areas that are not often visited have many more karst features than appear on maps. Sinkholes exist because the underlying water-soluble limestone or dolomite rocks have been partially dissolved by groundwater circulation below the sinkholes over many years. That is, **sinkholes are surface features which guarantee that there are, or were, subsurface features such as conduits, caves, and caverns through which groundwater circulates.** New sinkholes can occur gradually or quite suddenly. And, *new sinkholes are frequently developed* in this region. Thus, **the Mount Tabor karst region is not stable.** Rain water stays in the sinkholes until it drains into the subsurface features. Construction in karst geology can cause new sinkholes, i.e., partial collapse of the rock beneath the surface possibly destroying the subsurface drainage system and collapsing the aquifer. Construction can be digging, blasting, and even vibrations from heavy vehicles traveling near a subsurface feature. *Disappearing or sinking streams* occur when a stream sinks below the ground at what is called a *sinkpoint*. Numerous streams in the Mount Tabor area sink and reappear, depending on the amount of flow. High flow volume might cause some of the flow to bypass the sinkpoint. Some sinking streams reappear as a *spring* or *boil point*. Yet other streams sink below ground level into a conduit or passage that can be miles long and then reappear in a cave or spring.

2.2 Subsurface Features of Karst

In contrast to surface features, the subsurface features of karst geology are hidden to the eye and are *very far from being explored or mapped*. Those subsurface features are the conduits, underground streams, and caves that provide water to the Mount Tabor area of about 100 homes and *enables them to be lived in*. Those **subsurface features are very deep, complex, multi-layered, and highly interconnected** as in Figure 1, and form an extensive subsurface drainage system and aquifer. The conduits and caverns often connect widely separated areas that are discovered only by use of dye-trace techniques. Such connections are typically too small to permit human exploration. Thus, the subsurface features can never be truly known in the sense of being mapped. There are generally more conduits than caves or caverns.

These features are quite vulnerable to disruption caused by the slightest disturbance, and even more vulnerable to blasting. MVP will have to blast through rock formations to excavate for a

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pipeline. Any disturbance could easily cause collapse of the fragile underground system shown in Figure 1, and fuel spill contamination of those subsurface features would render this karst region uninhabitable thus denying hundreds of people their established homes. No pipeline should go through a karst zone---**damage is inevitable, catastrophic, and irreversible!**

2.3 Dye-Trace Studies

Dye can be liquid or powder, is typically fluorescent, and is inserted as 1/2 lb. per gallon of water with several hundred gallons being used. The solution is then poured into an accessible karst feature such as a swallet, cave, or stream. Downstream, traps, i.e., detectors of fluorescence, are placed at suspected locations of outflow via various underground conduits or explorable or unexplorable caves. Finally, the entrance points are plotted on a map along with the exit points to form a rough concept of the underground passages that exist. Of course, the concept cannot reveal anything about the possible multilevel nature of the passages. That is, there is no way to detect a three-dimensional character of the underground geometry---only a two-dimensional image can be found. Also, we cannot know anything about the the passages other than they are some straight line between the entrance and each exit. In reality, we would expect each passage or conduit to describe a very "wiggly" path, up and down and side to side as the water traverses each passage. That is, all we know is where the water started and where it ended up.

2.4 Example of a Very Intriguing, Complex Dye-Trace Result

One remarkable example of a dye-tracing result is the passage from the northern-most sinkpoint on Dry Run Road as in Figure 2 to Old Mill Cave and some other points about two miles away

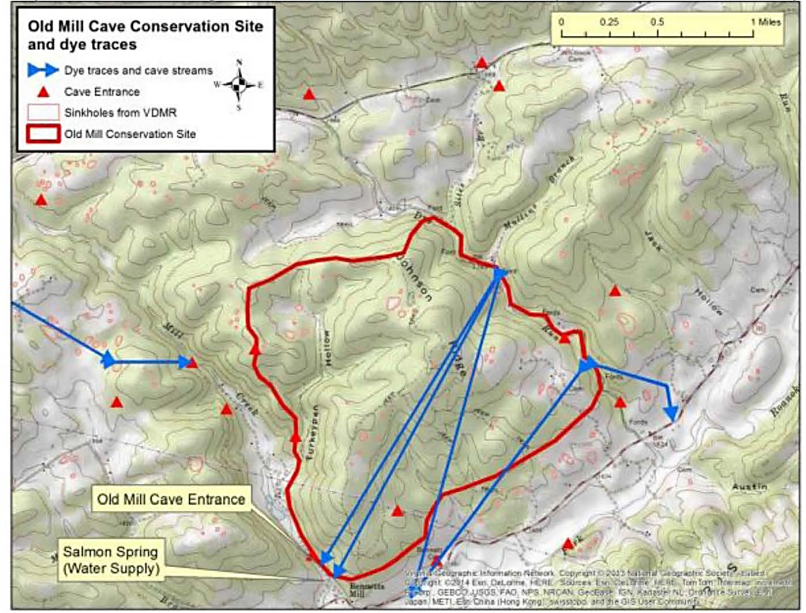


Figure 2 Dye-trace Results from Dry Run Road Under Johnson's Ridge to Old Mill Cave

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passing about 600 feet underneath Johnson's Ridge. How would you even suspect such a connection exists? If water flows out of Old Mill Cave, it has to come from some other place! But where? Even exploration of Old Mill Cave is quite limited---explorers can go into the cave only so far before the geometry of the passage is so tight that a human being cannot fit any further as in Figure 3. Even a small drone could progress only a little bit farther. The explorable length of the cave is only about 1,100 feet of the two mile-long passage. The passages have at least three exit points. If you can't see a possible exit point, then you don't know to put a dye trap there. Plus, there are at least three other caves in the Old Mill Conservation site that have not been explored, much less the caves that have not been discovered.

From the Dry Run sinkpoint in Figure 4, blue lines with arrowheads in Figure 2 are the flow traces to three separate locations, all of which are the sole water source for local families. Notice the wet area in the upper part of Figure 4, whereas the lower area is dry; hence the sinkpoint is at the dividing line between wet and dry areas. There is another sinkpoint further south on Dry Run Road where additional dye was injected. Apparently multiple passages are detected with the possibility of actual human exploration quite limited because the passage size decreases to less than human dimensions as in Old Mill Cave in Figure 3.

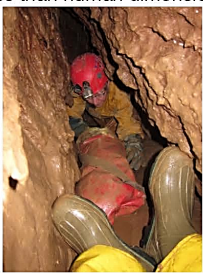


Figure 3 Old Mill Cave

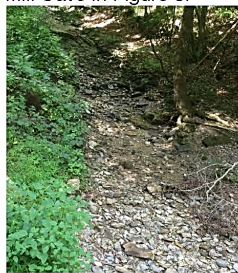


Figure 4 Dry Run Sinkpoint

2.5 Known Dye-Trace Results in the Slusser's Chapel Conservation Site

The several dye-trace studies performed in the Mount Tabor area are summarized in Figure 5. The "old" dye-trace arrows are turquoise in Figure 5, whereas the actual cave explorations are shown as blue arrows. The major conclusions are that water from the western and northeastern parts of the Conservation Site makes its way to Slusser's Chapel Cave, then to the southern end of Slusser's Chapel Cave, next by a dye-trace study to the upstream end of Mill Creek Cave .86 miles away, out of Mill Creek Cave to Mill Creek, and down Mill Creek to the North Fork of the Roanoke River. Without the dye-trace results, the actual path of the water is not knowable.

The key features of the water flow in Slusser's Chapel Conservation Site are Slusser's Chapel Cave in Figure 6 and Mill Creek, the headwaters of which are at MC in Figure 5. Note that Slusser's Chapel Cave is 1/2 mile long and has two levels that have been explored. More passages or conduits of the cave could exist to the north and to the south (and to any other direction as well). Thus, Slusser's Chapel Cave is the central feature of the aquifer because most underground passages lead to it from all other parts of the aquifer. The lower reaches of Mill Creek are also fed from Mill Creek Cave. Mill Creek is crossed by the MVP at Points 3 and 4 in Figure 5. Another important stream in the site is designated by MVP as TTVA-S-200 and flows down from Dyer's Grotto at Point 1 in Figure 5 to Slusser's Chapel Sink Hole and on to Slusser's Chapel Cave. That stream is crossed twice by the MVP.

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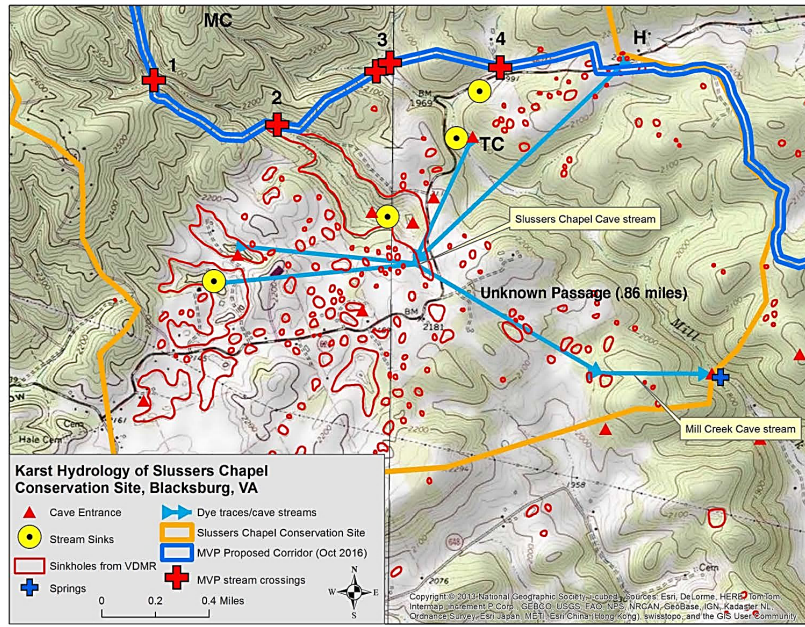


Figure 5 Dye-Trace Studies in Slusser's Chapel Conservation Site

Recently, additional dye-trace studies³ were done to explore the connection of the northeastern portion of Slusser's Chapel Conservation Site to Mill Creek. Dye inserted in sinkholes in the vicinity of Point H in Figure 5 has been found in Slusser's Chapel Cave as has dye from Thundercrock Cave in the vicinity of Point TC. In Section 5.5, the 34 sinkholes and cave on the Cox-DeGroff property are described. Apparently, those 34 sinkholes and many more in the vicinity of Point H (only half are shown) in Figure 5 are interconnected to the rest of Slusser's Chapel Conservation Site to the southwest. Thus, disturbances in any portion of Slusser's Chapel Conservation Site would be felt throughout the entire Conservation Site! The southeastern portion of the Conservation Site has not been explored with dye-trace studies.

2.6 The Karst and its Subsurface Features Form the Mount Tabor Aquifer

The karst features just described collectively form the deep, heavily interconnected, multilayered aquifer that underlies the entire Mount Tabor area! That aquifer is both a blessing and a curse. A blessing because the aquifer provides the water that we all depend upon to live in the Mount Tabor area. A curse because the aquifer is susceptible or vulnerable to a wide variety of natural and unnatural events. The dangers that threaten the aquifer presently are those associated with the construction of a pipeline through the area. Karst aquifers are quite sensitive to ground water contamination. Moreover, the karst aquifer could collapse because of nearby blasting or heavy vehicle vibrations. The odds of a disaster are way too high to risk loss of the habitability of the entire Mount Tabor area even without an explosion.

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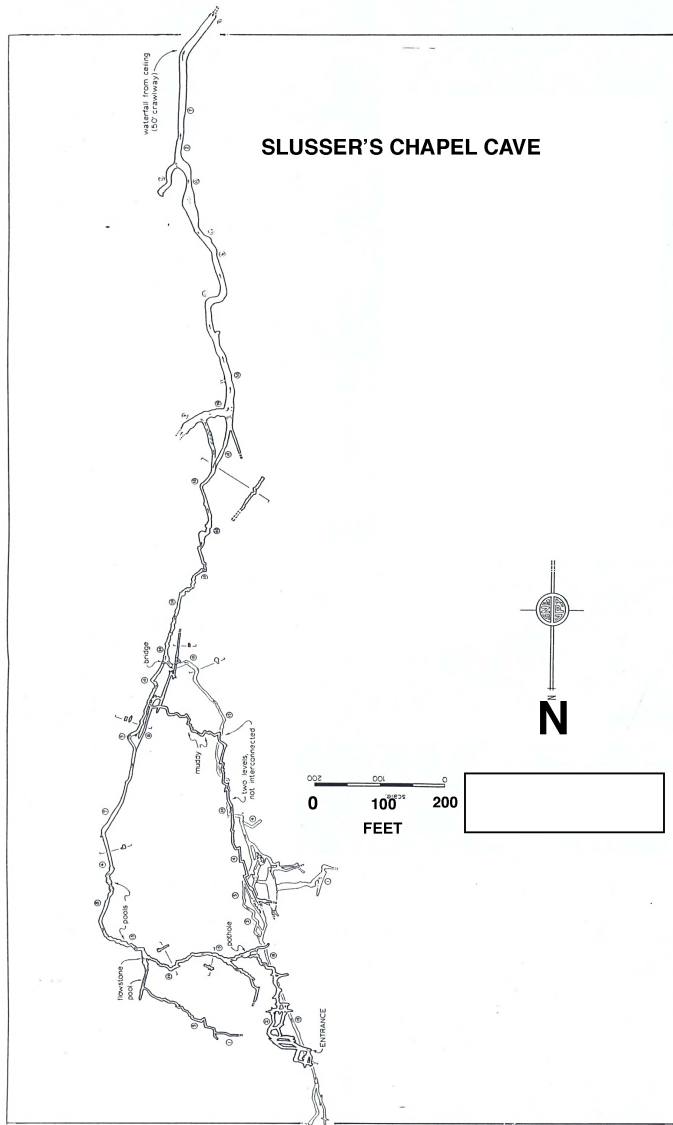


Figure 6 Slusser's Chapel Cave (note the two levels)

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3. THE SEVERAL ROUTES THROUGH THE MOUNT TABOR AREA

In October 2015, MVP filed an application to FERC to use a Mount Tabor area route denoted with the red zig-zag line with 1/10-mile markers in Figure 7 for a 42" high-pressure natural gas pipeline. *That route passed through the most dangerous karst features in the Mount Tabor area.* On 13 October 2016, MVP changed its proposed route to be the former Mount Tabor Variation⁴ shown as the light blue zig-zag line in Figure 7. There, the yellow shapes are known sinkholes in both the Slusser's Chapel and Old Mill Conservation Sites. Many more sinkhole are not recorded because of forestation and essentially areas that are not often visited so their characteristics are not well-known. Both conservation sites have very high levels of dangerously sensitive karst terrain according to the Virginia Department of Conservation and Recreation. However, **the entire Mount Tabor region is karst geology, even outside the conservation sites as shown in light blue in Figure 8⁵.** The large black circle drawn by MVP in Figure 7 is regarded by MVP as the Mount Tabor Sinkhole Plain. **However, that circle encloses only a small part of the actual Mount Tabor Sinkhole Plain, a heavily concentrated group of sinkholes and underlying caverns within the Slusser's Chapel Conservation Site and well beyond to the east and to the west.** The actual Mount Tabor Sinkhole Plain is the entire large light blue area in Figure 8 extending from beyond Coal Bank Hollow Road in the west, well to the east of Dry Run Road, and from nearly the ridge of Brush Mountain in the north to the bottom of Figure 8 in the south according to renowned karst expert Dr. Ernst Kastning⁶ in his comprehensive report on karst along the MVP. Thus, the definition of the Mount Tabor Sinkhole Plain far exceeds the MVP circle in Figure 7. Accordingly, the Mount Tabor Variation is totally within the Mount Tabor Karst Sinkhole Plain as defined by Dr. Ernst Kastning⁶ as is abundantly evident in Figure 8. The length of the MTV in karst is the whole four miles of its length, not the only 7/10 mile claimed by MVP because they do not understand that the entire Mount Tabor area is karst as in Figure 8. That is, they incorrectly assumed that if their route was outside a conservation site it would not be in karst. Thus, they placed portions of the route alongside both conservation sites just outside the site boundaries as in Figure 7. The darkest green area to the north of the label Slusser's Chapel Conservation Site in Figure 7 is part of the Jefferson National Forest and also part of the Slusser's Chapel Conservation Site

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See the response to comment CO6-1 regarding the Mount Tabor Variation.

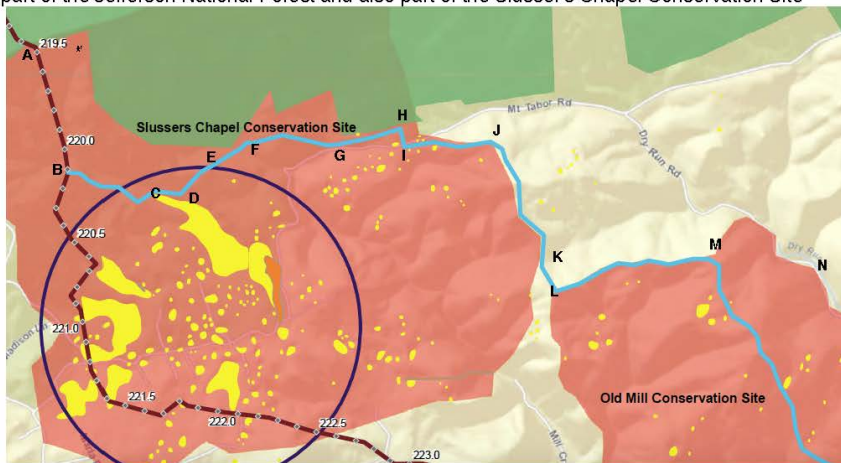


Figure 7 13 October 2016 Mount Tabor Pipeline Route filed by MVP with FERC (in light blue)

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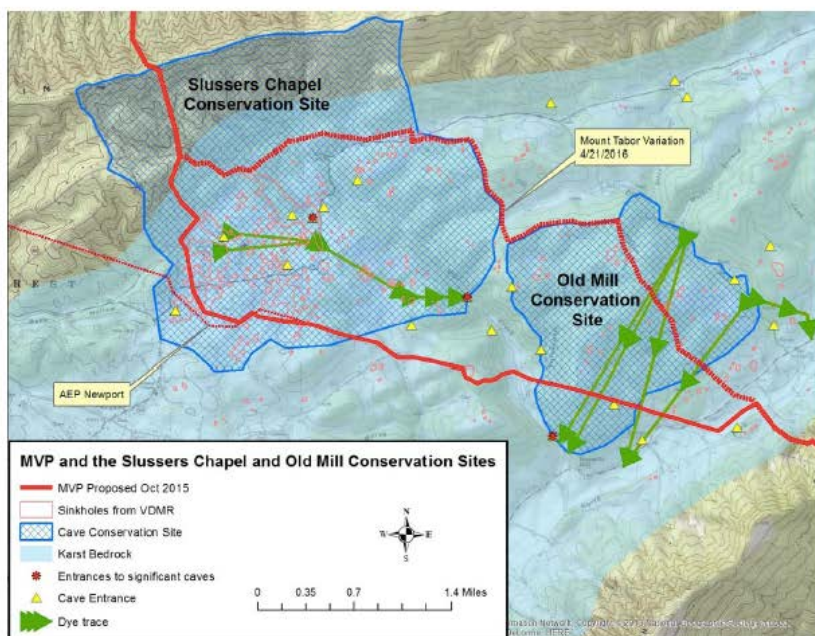


Figure 8 The Entire Mount Tabor Area is Karst Bedrock (Shown in Light Blue)

which extends to the ridge of Brush Mountain about 3/4 mile above point H. At point A, the change in color denotes the ridge of Brush Mountain which extends all across Figure 7 and beyond (and is shown better in a later figure). The remaining lightest green area at the top of the map is Jefferson National Forest land. About 100 homes with families are located on or near Mount Tabor Road in the Slusser's Chapel Conservation Site with even more homes west in Preston Forest and down through the Old Mill Conservation Site to Catawba Road and the North Fork of the Roanoke River.

On 9 September 2016, the Virginia Department of Conservation and Recreation (DCR) recommended a route to avoid most of the Slusser's Chapel Conservation Site by moving the pipeline to the ridge of Brush Mountain² (the yellow line in Figure 9), i.e., the DCR "Avoidance" Route. There, the pipeline would go east-northeast along the Brush Mountain ridge from Point 2 to Point G and then down the south slope of Brush Mountain to Point H to join the remainder of the Mount Tabor Variation. In doing so, most, but not all, of the Slusser's Chapel Conservation Site would be bypassed. Only a very small portion of the Slusser's Chapel Conservation Site would be traversed from north of Point H to the vicinity of Point H and somewhat to the east. Note that with this "Avoidance" route the Old Mill Conservation Site would not be avoided as the VA DCR has consistently recommended. However, most, but not all, of the worst karst and water features of the Slusser's Chapel Conservation Site are avoided. Some bad features remain in the vicinity of Point H and are likely connected by conduits to the rest of the site.

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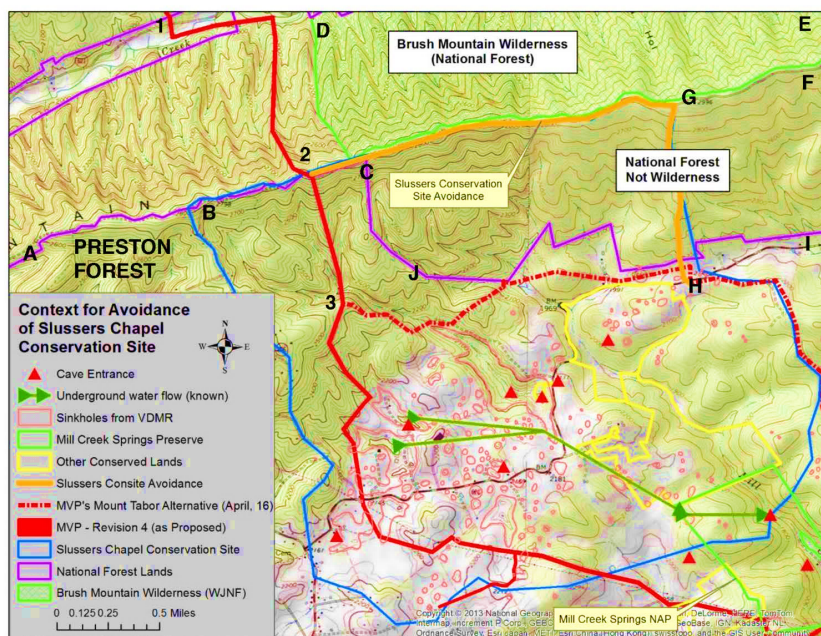


Figure 9 The Virginia DCR Slusser's Chapel Conservation Site "Avoidance" Route

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4. CLASSIFICATION OF THE JEFFERSON NATIONAL FOREST ON BRUSH MOUNTAIN

The Jefferson National Forest has thirteen numbered main categories of the type of part of the forest with many more lettered sub-categories. The Jefferson National Forest plan with full description of all categories (but the latest description is not available yet) and a map from which Figure 10 is extracted (and updated with the latest information) are given in <http://www.fs.usda.gov/detail/gwj/landmanagement/planning/?cid=stelprd3834578>. The categories pertinent to the DCR "Avoidance" Route are 1.A (Designated Wilderness), 4.J (Urban-Suburban Interface), and 5C (Designated Utility Corridors). The land labeled "Brush Mountain Wilderness" area on the north side of Brush Mountain in Figure 10 (Path C-D-E-F-G-C) is category 1.A and cannot be used for a pipeline. The straight red lines at the top and the bottom of Figure 10 are power line corridors. The powerline corridor at the bottom of Figure 10 in the 4.J and 8.C land goes through the middle of the Preston Forest subdivision (which was built *after* the powerline). The powerline corridor at the top of Figure 10 in the 1.A land is "grandfathered" because it was built before the forest categories were established. The ridge of Brush Mountain is the Path A-B-C-G-F. On the north side of Brush Mountain, the Jefferson National Forest land bounded by Path M-B-C-D-N-M is not only 4.J, but is additionally stipulated to be "inventoried Roadless Area". That land is extraordinarily steep, so a public road is not even feasible. However, that land is category 4.J (Urban-Suburban Interface) which can easily be converted to category 5.C (Designated Utility Corridors) through which a pipeline can be built according to the Forest Service. The "road" beside the pipeline cannot be a public road.

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Comments noted.

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included in this report to correct the record. The key characteristic of each of the four examples is that erosion is inevitable and sedimentation from that erosion at each example site would reach Slusser's Chapel Cave, *the central feature of the aquifer*, and potentially clog it. Each example is located with a red cross on Figure 11 (the third and fourth red crosses are treated as one example because they are the crossing of two closely located streams). Almost all water flows toward Slusser's Chapel Cave, whether on the surface or underground. These four examples are the key locations for very significant trouble during construction and afterward. Each of the four examples is the location of a stream crossing (and in the fourth example also proximity to an assortment of sinkholes which are over a complex underground drainage area as demonstrated by dye-trace studies in Section 2. The significance of the stream crossings is that in the Mount Tabor area *it's all about the water!*

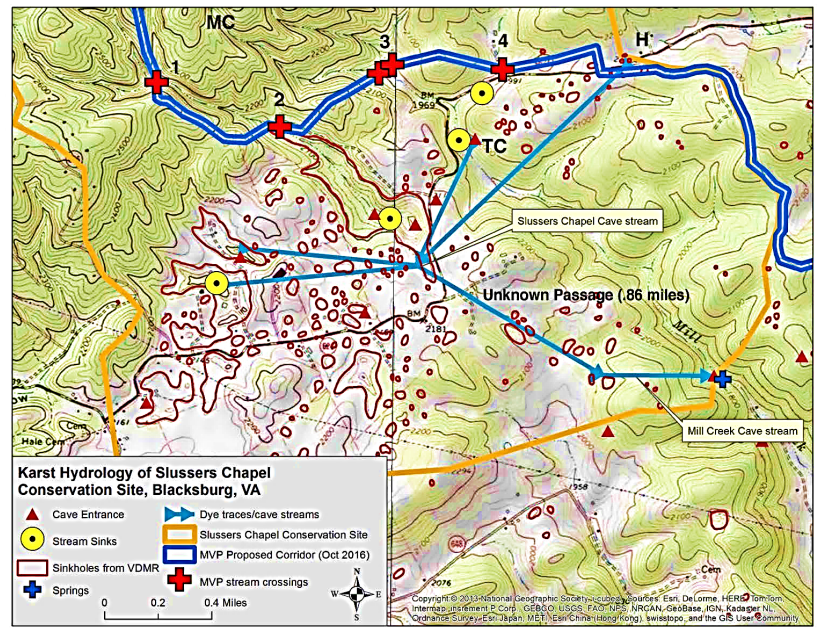


Figure 11 Location of the Four High-Risk Channel Crossings on the Mount Tabor Variation

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5.2 Coming Down From the Ridge of Brush Mountain to Dyer's Grotto
The entry of the MVP into the Mount Tabor area is restricted by two factors. First, to the west of Point B in Figure 9, the Preston Forest subdivision with about 250 homes cannot be reasonably crossed by a large-diameter, high-pressure gas pipeline (although that was the original route filed in 2014). Second, the Brush Mountain Wilderness of the Jefferson National Forest (enclosed partially by Points C-D-E-F-G-C in Figure 9) cannot be crossed by a pipeline under any circumstances because Forest Service regulations do not permit such crossings in a wilderness. Thus, entry is confined to the space between Points B and C on the ridge of Brush Mountain in Figure 9. In addition, on the steep descent south from Point 2 on the ridge of Brush

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Steep slope construction techniques and mitigation measures are discussed in section 4.1 of the EIS. See the response comment CO14-3 regarding spills. See the response to comment IND70-1 regarding erosion.

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Mountain, deep ravines and streams must be crossed. The only way to avoid those ravines and streams is to not go down Brush Mountain between Points B and C (and not going down is the most significant feature of the aforementioned Virginia DCR "Avoidance" route). Thus, both the route proposed on 15 October 2015 and the Mount Tabor Variation proposed on 13 October 2016 have the same incredibly nasty problem of disturbing streams, eroding their banks, and causing sedimentation that will likely clog and block the aquifer upon which all residents depend on for water. That such a difficult-to-construct pipeline location is a typical result when pipelines are laid out by means of a desktop design done blindly miles from where it is to be built.

This segment of the pipeline goes south down Brush Mountain from an elevation of 2800' at Point A on the ridge to 2300' at Point B at Dyer's "Grotto" in Figure 7. The average grade is about -15%. However, the pipeline crosses a significantly steeper down slope (greater than 100%) on a wall of the ravine with stream designated S-ST2 by MVP in Figure 12, reaches the confluence of three streams (S-ST1, S-ST2, and S-ST3), and then gets to a very steep slope of greater than 100% at the bottom of the confluence in Figure 13. The pipeline goes partway up the very steep slope and then goes side slope along the very steep slope as it turns from south to east and then to southeast as in Figure 14 (from an MVP strip map of the pipeline). The darkest areas in Figure 14 are vegetation in and near the streambeds and constitute what is called Dyer's "Grotto". The steepness of this property is quite evident from the closeness of the ten-foot spaced contour lines in Figure 15. The slopes are so steep that it is exceedingly difficult to walk on them (impossible for many). Traversing those very steep slopes of 100% or greater with a pipeline is a profound challenge during construction, if even possible. More importantly to the residents of the Mount Tabor area, diesel spills during construction are inevitable, and the fuel will flow down the confluence of the three streams, called TTVA-S-200 by MVP, which flows down to the giant Slusser's Chapel Sink Hole (the largest in this area---.8 mile long, .3 mile wide, and 100 feet deep) and on to Slusser's Chapel Cave thereby polluting the aquifer that supplies water to the entire Mount Tabor area and more! Most importantly, the very steep slopes are nearly impossible to traverse without enormous erosion and therefore sedimentation both during construction and in service that will clog Slusser's Chapel Cave thereby cutting off and/or contaminating the water to the entire Mount Tabor area and more! These ravine and stream confluences are construction nightmares as well as ecological disasters in the making.

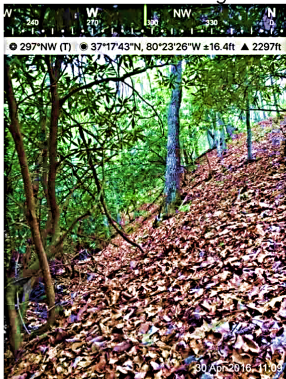


Figure 12 East Wall of the S-ST2 Ravine
Photo by Tim Ligon



Figure 13 Southern Wall of the "Grotto"
Photo by Tim Ligon

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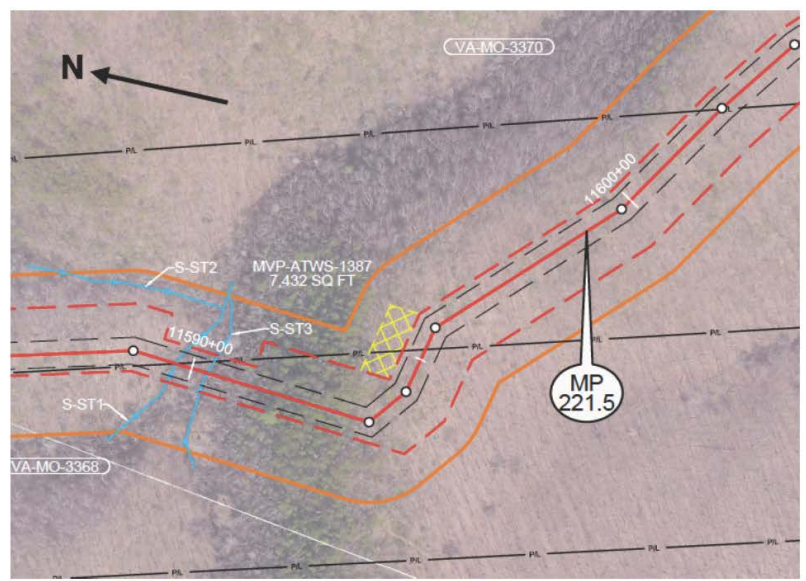


Figure 14 MVP Map of Dyer's "Grotto" with Three Streams converging at the Left Center

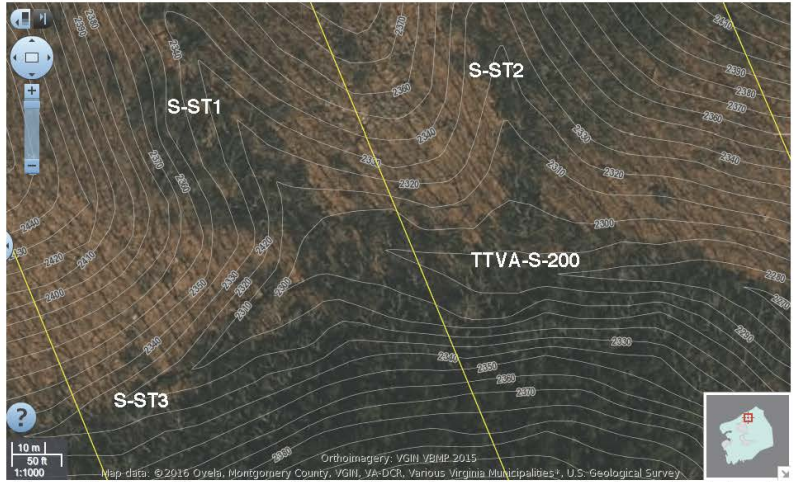


Figure 15 Three Streams and Multiple Steep Ravine Walls with Contours (North is up)
(The Converged Stream is called "TTVA-S-200" by MVP)

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Construction of a pipeline on steep slopes quite often results in very significant erosion as shown in Figure 16 for a 12" pipeline that is located near the MVP route in Monroe and Giles Counties of West Virginia. Note that example is for only a 12" pipeline on far less steep slopes than in the Dyer's "Grotto". The excavation for a 42" pipeline would be necessarily be both far wider and far deeper than for a 12" pipeline. Thus, it's not hard to imagine the extremely nasty erosion that would necessarily occur for a 42" pipeline on far steeper slopes! Certainly the "mitigation" that failed in Figure 17 for the 12" pipeline is small potatoes in comparison to any attempted "mitigation" in Dyer's "grotto". The word mitigation is in quotation marks because the engineering meaning is to fix or remedy in an absolute sense whereas the meaning to some others is quite apparently not really an accomplishment. **Erosion is inherent in mountainous terrain with heavy rains. Steep slopes in poor soils where torrential downpours occur are almost impossible to fix.** That is especially true for so-called side-slope pipeline routes, i.e., pipelines that don't go straight up or down a slope, but at some angle. **After the erosion necessarily comes sedimentation which would travel down the mountain to the stream that goes into the giant Slusser's Chapel sinkhole on to the Slusser's Chapel Cave thereby clogging the aquifer and denying water to the residents of the Mount Tabor area.**

In summary, the downslope from the ridge of Brush Mountain to Dyer's "Grotto" is inherently unsuited to construction of a pipeline because of more than difficult steepness, erosion, and sedimentation. The construction is faced with too many factors with a near-guarantee of failure. Dyer's "Grotto" is an absolutely horrible place to try to overcome the natural odds against successfully building a pipeline given the very limited latitude to relocate the pipeline laterally on the south slope of Brush Mountain. The construction obstacle alone is sufficient motivation to not come down the south slope of Brush Mountain, but to instead go east along the ridge of Brush Mountain until a more suitable path down the mountain is found.

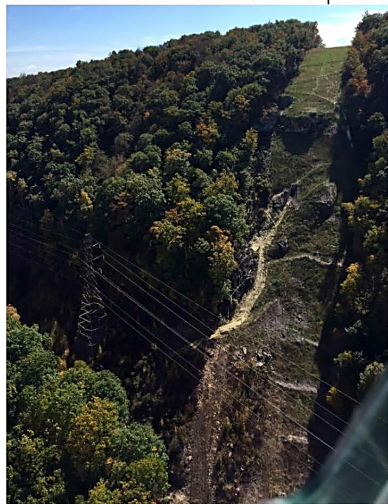


Figure 16 Erosion of Backfilling a 12" Pipeline on a Fairly Steep Slope

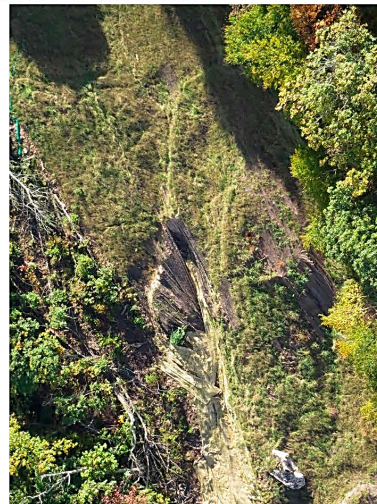


Figure 17 Unsuccessful Attempted Repair of a 12" Pipeline Eroded Slope

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5.3 Crossing the Stream at the Head of the Giant Slusser's Chapel Sinkhole

The pipeline goes ESE in Figure 18 from the Powell property, turns east to the another Dyer Property, and then goes NE to the Slayton property where it crosses the stream TTVA-S-200 again (double jeopardy). The stream crossing is especially precarious because the stream has a large cross section (wide and deep) as in Figure 19 and the high-volume flow is very rapid during heavy rains as in Figure 20. The rapid flow of large quantities of water will scour the covering of the pipeline in the stream, thereby exposing the pipe to rusting. Stream TTVA-S-200 drains into the giant sinkhole on to Slusser's Chapel Cave thus threatening the cave with excess sedimentation and hence clogging. The clogging could contaminate and/or cut off the water supply to the Mount Tabor aquifer denying many residents their essential water supply.

Next, the pipeline goes parallel to the stream below the Slayton driveway for about 650 feet to cross the driveway to the northeast at MP 220.0. The long and close proximity to the stream permits considerable erosion and sedimentation with associated clogging of Slusser's Chapel Cave. This path below the driveway is totally in the karst at the edge of the giant Slusser's Chapel sinkhole, a precarious location indeed. When the MVP router saw this pipeline layout on the ground, he uttered "ludicrous!" That's the problem with routing a pipeline by "desktop review" without looking at the facts on the actual ground! The MVP surveying was done exactly backwards: culture first and routing and civil last! In fact, much of the Slayton property in Figure 18 is actually in the giant sinkhole, so other sensitive karst features such as additional sinkholes could develop at any time. One of their neighbors on the edge of the giant sinkhole reported that, while drilling their well, two subterranean caves were passed through before a water supply was reached (just like in Figure 1). That experience is evidence that the karst around the giant sinkhole is a very deep and complex cavern system that could collapse at any time as in Figure 1. Thus, construction at the edge of the giant sinkhole could cause a collapse of even more of the edge of the giant sinkhole. Moreover, the neighbor's well is at times already contaminated by the present level of flow to the giant sinkhole and the cave during heavy rains. Further contamination would affect even more wells if not the whole aquifer!

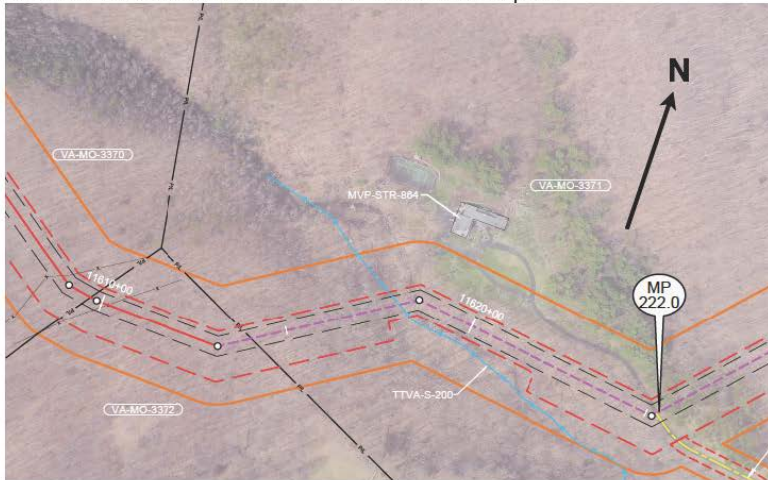


Figure 18 MVP on the Slayton Property and in the Giant Slusser's Chapel Sinkhole

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Scour is addressed in section 4.3 of the EIS. See the response to comment FA11-15 regarding turbidity and sedimentation. The potential for karst collapse is addressed in section 4.1 of the EIS.

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Figure 19 Large Cross Section of TTVA-S-200



Figure 20 Rapid Flow in TTVA-S-200

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5.4 Crossing Mill Creek and its Tributaries

The Pipeline goes down the Jones property on Figure 21 and crosses three streams, TTVA-S-201 (which the labeling arrow in Figure 21 misses), TTVA-S-202, and TTVA-S-203. Actually, TTVA-S-201 is Mill Creek, a prominent stream in the Mount Tabor area. Mill Creek is a fast-running stream flowing directly on bedrock as shown in Figure 22. Thus, each of these streams will have to be crossed by blasting in bedrock. A spring on the Triplett property is shown in Figure 23, although it is not located specifically on Figure 21 because the survey results were not done. Also, a significant wetland of several acres in size exists on the Jones Property next to Mill Creek as in Figure 24 with other wetlands on the Triplett property.

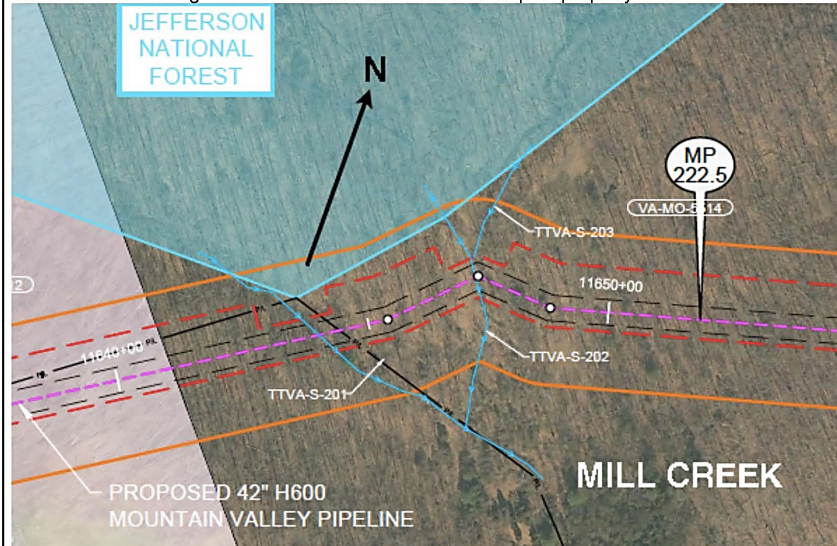


Figure 21 MVP Map of Stream Crossings on the Jones and Triplett Properties

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See section 4.1 of the EIS for a discussion of blasting in karst areas. See the response to comment IND401-5 regarding missing wells and springs. Section 4.3 of the EIS provides a discussion of wetland impacts. See the response to comment IND70-1 and FA11-15 regarding erosion and sedimentation and turbidity. Waterbody crossings are discussed in section 4.3 of the EIS.

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Crossing three streams in close proximity to each other is difficult to accomplish with a pipeline and avoid scour that endangers the pipe itself. Moreover, erosion in the area of the crossing would lead to sedimentation in the Mount Tabor aquifer with associated clogging of the aquifer that endangers the water quantity and quality in the Mount Tabor area. Stopping up a spring has other unfortunate ramifications. Crossing a wetland cannot be done without the approval of the Army Corps of Engineers. Stream crossings are also governed by the Corps of Engineers.

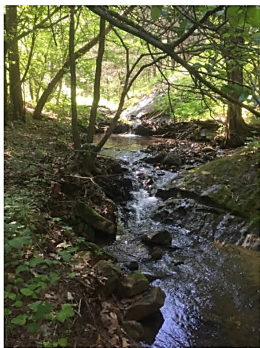


Figure 22 Mill Creek, a Fast-Running Stream Directly on Bedrock



Figure 23 Spring on the Triplett Property

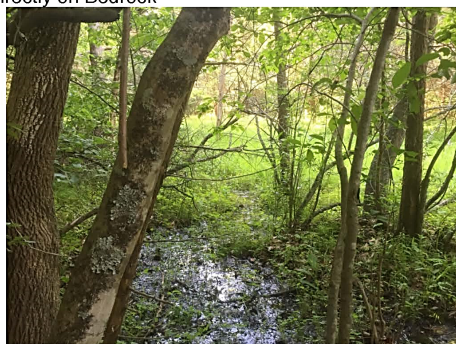


Figure 24 Significant Wetland Below a Spring on the Jones Property Next to Mill Creek

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5.5 Crossing Hutton's and Johnson's Property Adjacent to the Cox-DeGroff Property

A map of the area with the Hutton, Johnson, and Cox-DeGroff properties is shown in Figure 25. On the Hutton property at Point 4 in Figure 11, a 50 feet in diameter and several feet deep sinkhole is in the approximate path of the pipeline. There are also holes in the ground that are conduits for water (i.e., emerging sinkholes) presumably to an underground cavern plus a wetland in the path of surveyors stakes as of September 2016 in Figure 26. Two additional tributaries of Mill Creek are crossed by the MTV, one of which is shown in Figure 27. Those

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Statements regarding sinkholes are noted. Crossing streams is not an impediment to pipeline construction.