

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:

OEP/DG2E/G3

Mountain Valley Pipeline LLC

CP16-10-000

§ 375.308(x)

March 20, 2017

Matthew Eggerding, Counsel
Mountain Valley Pipeline LLC
625 Liberty Ave., Suite 1700
Pittsburgh, PA 15222

Re: Post-DEIS Environmental Information Request #2

Dear Mr. Eggerding:

Please provide the information described in the enclosure, including comments from other federal and state cooperating agencies, to assist in our analysis of the above-reference certificate application. File your response in accordance with the provisions of the Commission's Rules of Practice and Procedure. In particular, 18 CFR 385.2010 (Rule 2010) requires that you serve a copy of the response to each person whose name appears on the official service list for this proceeding.

You should file a complete response within 10 days of the date of this letter. The response must be filed with the Secretary of the Commission at:

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

If certain information cannot be provided within this time frame, please indicate which items will be delayed and provide a projected filing date. **You should be aware that the information described in the enclosure is necessary for us to complete preparation of the environmental impact statement (EIS) for the Mountain Valley Project (MVP).**

When filing documents and maps, be sure to prepare separate volumes, as outlined on the Commission's website at <http://www.ferc.gov/resources/guides/filing-guide/file-ceii/ceii-guidelines.asp>. Any Critical Energy Infrastructure Information should be filed as non-public and labeled "Contains Critical Energy Infrastructure Information-Do Not Release" (18 CFR 388.112). Cultural resources material containing location, character, or ownership information should be marked "Contains Privileged Information - Do Not Release" and should be filed separately from the remaining information, which should be marked "Public."

CP16-10-000

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File all responses under oath (18 CFR 385.2005) by an authorized Mountain Valley Pipeline LLC representative and include the name, position, and telephone number of the responder to each item.

For all materials submitted, provide one hard copy to the FERC's Environmental Project Manager, and provide electronic copies directly to our third-party environmental contractor, Cardno (one each to Lavinia DiSanto and Doug Mooneyhan).

Thank you for your cooperation. If you have any questions, please contact me at 202-502-8059 or paul.friedman@ferc.gov.

Sincerely,

Paul Friedman
Environmental Project Manager
Office of Energy Projects

Enclosure

cc: Public File, Docket No. CP16-10-000

Enclosure

Mountain Valley Pipeline LLC (Mountain Valley)
Mountain Valley Project (MVP)
Docket No. CP16-10-000

ENVIRONMENTAL INFORMATION REQUEST (EIR)
Post-DEIS EIR #2

General Project Description

1. Provide the following revised plans that Mountain Valley indicated in February 2017 filings are being updated based on agency consultations:
 - a. Water Supply Contingency Plan;
 - b. Migratory Bird Conservation Plan;
 - c. Acid Forming Materials Identification and Mitigation Plan;
 - d. Annual Standards and Specifications for Virginia (in accordance with the 1992 Third Edition of the Virginia Erosion and Sediment Control Handbook);
 - e. Spill Prevention Controls and Countermeasures Plan; and
 - f. Invasive Plant Species Management Plan.
2. Provide updated and/or track change versions of the following draft environmental impact statement (EIS) appendices:
 - a. Appendix P – Summary of Pipeline Collocation with Existing Rights-of-Way;
 - b. Appendix Q – Roads and Railways Crossed;
 - c. Appendix R – Structures within 50 feet of the Construction Work Area;
 - d. Appendix S – Visual Simulations (including photo simulations and descriptive narrative text); and
 - e. Appendix T – Traffic Counts.
3. Attachment DR4 Land Use 17, filed February 2017, stated that: “the data for the Proposed Route in the table reflect minor revisions that Mountain Valley made in December 2016 to the October 2016 Proposed Route.” Provide a table that lists all of the changes Mountain Valley made to the proposed route in December 2016, by milepost (MP) and a reason for each modification, together with updated 7.5-minute U.S. Geological Survey (USGS) topographic maps and alignment sheets that reflect those changes

4. Revise Attachment DR4 General 7 (Survey Status for Cathodic Protection Ground Beds) to include waterbodies. The table indicates that surveys have not been completed at the following locations: MVP-CPGB-11, MVP-CPGB-17, MVP-CPGB-19, and MVP-CPGB-20. Provide the reason these surveys have not yet been completed and provide the anticipated completion date. Identify measures that Mountain Valley would implement to avoid, minimize, or mitigate impacts on any environmental resources at the cathodic protection beds.
5. Address the issues raised in the following letters filed with the FERC:
 - a. Accession number 20170310-5024 (Dr. Robert Jones and Dr. Ernst Kastning);
 - b. Accession number 20161123-5028 (Smith Mountain Lake Association);
 - c. Accession number 20170222-5062 (Appalachian Trail Conservancy [ATC]);
 - d. Accession number 20170223-5090 (Roanoke Appalachian Trail Club);
 - e. Accession number 20161222-5518 (Hodges);
 - f. Accession number 20161216-5060 (Number 9 regarding torque probe values);
 - g. Accession number 20170306-5054 (U.S. Forest Service [FS]);
 - h. Accession number 20161221-5087 (U.S. Environmental Protection Agency [EPA]); and
 - i. Accession number 20161222-5521, regarding black powder sludge.
6. Clarify why MLV 30 listed in table 2.1-7 appears to be out of order (i.e., the MP for MLV 30 is less than for MLV 29).
7. Revise table 2.3-1 from the draft EIS to include the temporary (construction) and permanent (operations) impact acres for the Webster Tap, Roanoke Lafayette Tap, and the Roanoke Franklin Tap.

Water Resources

1. Attachment DR4 Water Resources 2 (filed February 2017) provided “Septic Systems within the Limits of Construction Disturbance.” However, our January 2017 EIR requested identification of septic systems within 150 feet of all construction workspaces (by MP/county/state). Revise the table as necessary; or explain why data may not be currently available.
2. For table 4.3.1-2 (Springs and Swallets Identified within 150 feet [500 feet in karst terrain] of the Mountain Valley Project Construction Work Area – updated February 2017) stated that an unnamed spring used for cattle near MP 225.0 is

located within 150 feet of the construction workspace. Provide the exact distance that this spring is located from the nearest construction workspace boundary.

3. As previously requested in our January 2017 EIR, describe impacts that could occur to the spring located within the bounds of proposed access road MVP-SU198 at MP 161.3, including those impacts that may occur due to road modifications (i.e., widening, grading, and stabilization) and the use of the additional temporary workspace at the confluence of MVP-SU198 and the pipeline right-of-way. In addition, describe the methods Mountain Valley would use to determine whether or not is necessary to move the access road to avoid impacts on the spring.
4. Attachment General 3b3 (filed February 2017) stated that Mountain Valley will be contacting several Public Service Districts (including, but not limited to, Rainelle and Greenbrier County) in “mid-2017” to request permission to conduct water quality testing of primary and secondary groundwater supply wells. Provide the status of communications with the Public Service Districts regarding water quality testing. Also, indicate the measures Mountain Valley would implement to avoid, minimize, or mitigate impacts on the Public Service Districts groundwater supplies.
5. Regarding the crossings of the Greenbrier, Elk and Gauley Rivers and in response to a comment (accession number 20170228-5216) in particular, provide the following:
 - a. A justification for the non-perpendicular pipeline crossing design proposed for the Greenbrier River at MP 171.6, which appears to require about 130 feet more in-water construction than would a perpendicular crossing.
 - b. A detailed site-specific description of the dry-ditch cofferdam crossing methods proposed for the Greenbrier, Elk, and Gauley Rivers that includes for each crossing:
 - i. the material(s) used to make the cofferdam;
 - ii. cofferdam dimensions;
 - iii. methods of delivering the cofferdam to the sites;
 - iv. location(s) at which the cofferdam would be placed during construction;
 - v. cofferdam removal methods;
 - vi. potential site-specific impacts on water resources associated with the use of cofferdams (e.g., turbidity, sedimentation).

- c. Pipeline burial depths and scour mitigation strategies that would be used in the case that the field-verified depth-to-bedrock is at or very near the streambed surface (e.g., the streambed is composed of exposed bedrock).
 - d. A detailed description of the revetment mats that could be used to mitigate scour impacts that includes:
 - i. the materials used to create the mats;
 - ii. the areal extent to which the mats would be placed on the streambed and any associated impacts (e.g., loss of habitat, visual effects); and
 - iii. the revetment mats' ability to resist damage by flood-level currents.
 - e. A detailed description of the armor layers that could be used to mitigate scour impacts that includes:
 - i. the minimum armor particle size for a 100-year peak discharge event at the proposed Greenbrier River crossing and the feasibility of creating an armor layer that consists of a particle size equal to or greater than the estimated minimum particle size; and
 - ii. an armor layer's expected ability to resist displacement/destruction by flood-strength water flows in areas with a generally smooth streambed surface, such as the proposed Greenbrier River crossing.
6. Resolve discrepancies between the statement from Attachment DR4 General 3c (filed February 23, 2017) that: "Mountain Valley does not intend to utilize temporary culvert installations or placement of temporary (earthen) fill materials during the Project's crossing of waterbodies and wetlands on Project access roads" and Mountain Valley's response to Water Resources 20 that provided typical drawings for culvert installations. Clarify if Mountain Valley intends to install temporary or permanent fill at any waterbody or wetland crossing. If temporary fill is intended provide site-specific plans, including details regarding materials to be used and installation and removal methods, and site-specific justifications for each location.
7. For table 4.3.2-12 (Mountain Valley Pipeline Locations Paralleling Waterbodies within 15 Feet – updated October 2016), provide a site-specific justification for paralleling the UNT to Foul Ground Creek at MP 271.7.
8. Attachment DR4 General 3c (filed February 2017) stated that: "Mountain Valley will conduct further desktop reviews to identify private ponds located within 0.25-mile downslope of the limit of disturbance." Clarify if these ponds have been previously identified and data about them filed with the FERC.

9. Mountain Valley's February 2017 filings refer to a Water Resources Identification Plan and a Water Supply Identification and Testing Plan. Clarify if these are the same plan. If they are not the same, provide the Water Supply Identification and Testing Plan.
10. Table 4.3.2-11 (updated by Mountain Valley in March 2017), Mountain Valley's Aquatic Resource Report for the Jefferson National Forest (JNF) (dated February 2017), and Mountain Valley's Biological Evaluation for the JNF (dated March 2017), each contain differing counts and listings of the waterbodies that would be crossed within the JNF. Resolve these discrepancies.

Wetlands

1. Per email notification on March 1, 2017 from the Huntington District of the U.S. Army Corps of Engineers (COE), provide details about the proposed crossing of the federally-approved Kincheloe Wetland Mitigation Bank in Harrison and Lewis Counties, West Virginia. Discuss project-related impacts on this wetland mitigation bank, measures Mountain Valley would implement to avoid, minimize, mitigate those impacts, and documentation of communications with the COE about this issue.

Fisheries

1. Attachment DR4 General 3c (filed February 2017) stated that: "...permanent impacts to aquatic resources will be mitigated through either existing mitigation banks or state approved In-Lieu Fee programs." Provide a detailed description of aquatic impacts for which mitigation banks or in-lieu fee programs would be used. File documentation of agency communications and review of Mountain Valley's proposed aquatic resources mitigation program.
2. In response to public comments, provide a discussion of whether the MVP would impact the newly discovered species of crayfish (*Cambarus (Jugicambarus) pauleyi*) that is endemic to south-central West Virginia.

Vegetation

1. Attachment DR4 General 3b2 (filed February 2017) stated that some areas of the right-of-way would be hand-planted with trees and shrub species. Clarify if the areas that would hand-planted with trees/shrubs would be limited to the JNF or if this would apply to the entire pipeline route. Describe the methodologies to be used for hand-planting trees/shrubs.
2. Attachment DR4 General 3c (filed February 2017) stated that: "Mountain Valley is evaluating the service losses associated with these direct and indirect [forest] impacts, which it will address through a suite of mitigation measures developed in consultation with relevant federal and state resource agencies. These measures

will be the result of ongoing consultation with U.S. Fish and Wildlife Service (FWS), Virginia Department of Conservation and Recreation (VDCR) and Virginia Department of Game and Inland Fisheries (VDGIF, and West Virginia Department of Natural Resources (WVDNR).” Provide the specific measures Mountain Valley has developed to mitigate for impacts on upland forest, and document agency communications regarding this forest mitigation program.

3. Provide additional information, including references to scientific literature if available, to support Mountain Valley’s assertion in DR4 General 3c that colonization of the permanent right-of-way by invasive plants following two growing seasons after restoration “would not be attributable to the construction or operation of the Project.”

Wildlife

1. Mountain Valley’s *Field Surveys for Bald and Golden Eagles Along the Proposed Mountain Valley Pipeline in... Virginia*, dated June 13, 2016, noted that additional surveys would be conducted during the winter of 2016/2017. Attachment DR4 RTE did not contain reports for said surveys. Provide the results of these surveys.

Threatened and Endangered and Special Status Species

1. Mountain Valley’s Biological Evaluation indicates the MVP would have limited impacts on rock skullcap (*Scutellaria saxatilis*), stating “only” an approximate 0.78 hectare area of the local population of the plant would fall inside the construction right-of-way; however, 0.78 hectare is over half of the total 1.45 hectares that contain the plant. Provide correspondence with the FS that concurs with the determination of minimal impacts on this species.
2. Attachment DR4 General 3c stated that bog turtle surveys are completed; however, the Bog Turtle Survey Report submitted in November 2016 noted that there are still outstanding surveys needed for areas where access has not been granted. The same discrepancy appears in Attachment DR4 General 3b2. Rectify this discrepancy and/or provide an estimate of when the additional surveys will be conducted and results submitted to the FERC and applicable resource agencies.
3. Both tri-colored and little brown bats were identified in the project area and captured during mist net surveys. Describe the measures Mountain Valley would follow to determine whether roost trees for these species are present in the construction right-of-way, prior to construction.
4. Provide correspondence from applicable state agencies concurring with Mountain Valley’s proposed approach to avoiding impacts on loggerhead shrikes (i.e., clearing all potential nesting vegetation within the construction right-of-way prior to the beginning of the nesting season).

5. Attachment DR4 General 3b3 stated that the Management Indicator Species (MIS) wild trout and peaks of otter salamander were not observed during survey efforts within the JNF. However, the context of the statements indicates that surveys were not conducted specifically for MIS; rather the presence/absence of MIS is based on supplemental field notes of biologists conducting other surveys within the JNF. Provide support for the statement that these two MIS would not be impacted by the MVP, and justify why specific surveys for the species should not be conducted.
6. Mountain Valley's response to Threatened and Endangered and Special Status Species No. 5 regarding the effects of the MVP on the candy darter noted that the species may be present in waterbodies that would be crossed in West Virginia, but focuses primarily on impacts in the state of Virginia. Provide more data about the presence of the candy darter in West Virginia streams crossed by the MVP pipeline, and document correspondence with West Virginia state resource agencies regarding the MVP's impacts on the species.
7. In response to a comment, indicate whether the MVP would affect the big-eyed jumprock, riverweed darter, or Roanoke darter. Outline measures that Mountain Valley would implement to avoid, minimize, or mitigate impacts on those species. File copies of communications with applicable resource agencies regarding impacts on those species, not previously filed in the docket.

Cultural Resources

1. File copies of the respective reviews by State Historic Preservation Offices (SHPO) of the following cultural resources reports:
 - a. Espino et al. June 2016, *Mountain Valley Pipeline Project, Phase II Archaeological Investigations, Sites 46DO94, 46HS100, 46HS101, 46HS104, 46HS109, 46HS125, and 46LE77, Doddridge, Harrison, and Lewis Counties, West Virginia* (Tetra Tech, Pittsburgh) filed June 16, 2016;
 - b. Clement et al. February 2017. *Addendum 2 to Volume IV, Phase II Archaeological Investigations at Sites 46SU717, 46SU078, 46SU724, 46ME285, 46ME307, 46ME281, 46ME283, and 46ME284, Summers and Monroe Counties, West Virginia* (Search, Boston) filed February 2, 2017;
 - c. Clement et al. February 2017. *Mountain Valley Project, Phase II Investigations, Braxton County, West Virginia* (Search, Boston) filed February 17, 2017;
 - d. Barse et al. February 2017. *Mountain Valley Pipeline Project, Phase II Archaeological Investigations, Sites 46NI846, 46NI847, 46GB493, 46GB498, 46GB499, 46GB500, 46GB503, 46GB504, 46GB533, and 46NI827, Nicholas and Greenbrier Counties, West Virginia* (Tetra Tech, Pittsburgh) filed February 17, 2017;

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- e. Dye, February 2017. *Criteria of Effects Report, Mountain Valley Pipeline Project, Wetzel, Harrison, Doddridge, Lewis, Braxton, Webster, Nicholas, Greenbrier, Fayette, Summers, and Monroe Counties, West Virginia* (Tetra Tech, Pittsburgh) filed February 17, 2017;
 - f. Reeve et al. November 2016. *Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report Addendum 2, and Phase II Archaeological Evaluation, Site 44PY0442, Pittsylvania County, Virginia* (Tetra Tech, Parsippany, NJ) filed December 22, 2016;
 - g. Reeve et al. December 2016. *Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report Addendum 1, and Phase II Archaeological Evaluations, Sites 44CG0253, 44CG0254, 44GC0255, Craig County, Virginia* (Tetra Tech, Parsippany, NJ) filed December 22, 2016;
 - h. Reeve et al. December 2016. *Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report Addendum 1, Franklin County, Virginia* (Tetra Tech, Parsippany, NJ) filed December 22, 2016;
 - i. Reeve et al. January 2017. *Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report, Addendum 1, Roanoke and Montgomery Counties, Virginia* (Tetra Tech, Parsippany, NJ) filed February 17, 2017;
 - j. Reeve et al. January 2017. *Mountain Valley Pipeline Project, Phase IB Addendum 1 Archaeological Survey, and Phase II Evaluations of Sites 44GS0227, 44GS0229, 44GS0230, 44GS0231, and 44GS0236, Giles County, Virginia* (Tetra Tech, Parsippany, NJ) filed February 17, 2017;
 - k. Reeve et al. February 2017. *Mountain Valley Pipeline Project, Phase II Archaeological Evaluations of 18 Sites, Franklin County, Virginia* (Tetra Tech, Parsippany, NJ) filed February 17, 2017; and
 - l. Jacoby and Marshall, February 2017. *Mountain Valley Project, Avoidance Plans for 19 Archaeological Sites and Rock Overhands, Craig, Franklin, Giles, Montgomery, and Pittsylvania Counties, Virginia* (Tetra Tech, Parsippany, NJ) filed February 17, 2017.
2. Representatives of the COE have informed FERC staff that all of the COE Districts crossed by the MVP and EEP do not intend to issue their Clean Water Act Section 404 permits until after the FERC has documented the completion of the process to comply with Section 106 of the National Historic Preservation Act. To aid in that determination, provide:
- a. estimates of the completion of cultural resources inventories at all COE-jurisdictional wetlands and waterbody crossings;
 - b. identification of any COE-jurisdictional wetlands and waterbody crossings, by MP, where cultural resources surveys have not been done as of March 2017, and a schedule for when those surveys would be completed and the results filed with the FERC; and

- c. a list of all archaeological sites and historic architectural sites identified at COE-jurisdictional wetlands and waterbody crossings, by MP and wetland/waterbody name or identification number, site name and number, survey report reference, and National Register of Historic Places evaluation.
3. Cultural resources Table 3e, filed on February 17, 2017, is missing a number of sites that were recorded by Mountain Valley's cultural resources contractors. This includes sites 46BX111 in Braxton County, West Virginia (documented in Espino et al., October 2015); sites 46WB406, 412, and 440 in Webster County, West Virginia (documented in (Espino et al., October 2015; Freedman et al., November 2016); sites 46NI813, 818, 819, and 849 in Nicholas County, West Virginia (documented in Espino et al, December 2015; Espino et al. January 2017); 44PY431 432, and 433 (documented in Reeve et al. November 2016), and sites 44PY438 and 439 (documented in Reeve et al. August 2016) in Pittsylvania County, Virginia. Please explain why those sites were missing.
4. Document if archaeological testing was ever conducted at site 44WB440 in Webster County, West Virginia, as recommended in Freedman et al. (November 2016). If not explain why. If the site was avoided, document in what report the avoidance plan was filed with the FERC.
5. Provide an assessment if any of the Historic Districts crossed by the MVP pipeline route also qualify as rural historic landscapes or traditional cultural properties as defined in McClland, L., et al. (1999) "Guidelines for Evaluating and Documenting Rural Historic Landscapes, *National Register Bulletin* 30; and Parker, P. and T. King (1998) "Traditional Cultural Properties: Guidelines for Evaluation," *National Register Bulletin* 38. The FERC staff questions whether Mountain Valley's "Methods for Historic Architecture Criteria of Effects Assessment for Virginia," filed February 17, 2017, allows us to assess impacts on the rural historic cultural landscapes that may be associated with Historic Districts. Address the contradictions noted in the methods, that while Tasks 1 and 2 found no effect or no adverse effects on individual contributing resources in the Historic Districts, Task 3 made a finding of "high potential" for all the Historic Districts as a whole, and recommended that undefined Task 4 studies be conducted. Provide an objective analysis that uses measures that can be quantified, such as distance to construction workspaces, vegetation cover, and existing infrastructure, that can be related to the potential for the MVP to effect the characteristics that qualify each Historic District for the National Register of Historic Places or diminish their integrity, in accordance with 36 CFR Part 800.5. Document that Mountain Valley's analysis was reviewed by the Virginia SHPO.
6. For the following historic resources within the Greater Newport Rural Historic District, provide distance (in feet) to pipeline centerline, and impact assessments (Tasks 1 to 4):

- a. 35-412-8;
- b. 35-412-9;
- c. 35-412-13;
- d. 35-412-21;
- e. 35-412-31;
- f. 35-412-32;
- g. 35-412-33;
- h. 35-412-38;
- i. 35-412-39;
- j. 35-412-40;
- k. 35-412-41
- l. 35-412-42;
- m. 35-412-43;
- n. 35-412-44;
- o. 35-412-45;
- p. 35-415-47;
- q. 35-412-48;
- r. 35-412-54;
- s. 35-412-56;
- t. 35-412-60;
- u. 35-412-64;
- v. 35-412-69;
- w. 35-412-71;
- x. 35-412-72;
- y. 35-412-73;
- z. 35-412-74;
- aa. 35-412-76;
- bb. 35-412-77;
- cc. 35-412-78;
- dd. 35-412-79;
- ee. 35-412-83;
- ff. 35-412-84;

- gg. 35-412-85;
 - hh. 35-412-86;
 - ii. 35-412-87;
 - jj. 35-412-88;
 - kk. 35-412-89;
 - ll. 35-412-90;
 - mm. 35-412-95;
 - nn. 35-412-107;
 - oo. 35-412-238;
 - pp. 35-412-240;
 - qq. 35-412-243;
 - rr. 35-412-248;
 - ss. 35-412-249;
 - tt. 35-412-250;
 - uu. 35-412-251;
 - vv. 35-412-253;
 - ww. 35-412-273;
 - xx. 35-412-275;
 - yy. 35-412-409;
 - zz. 35-412-410;
 - aaa. 35-412-416; and
 - bbb. 35-5001.
7. For the following historic resources within the North Fork Valley Rural Historic District, provide an impact assessment (Tasks 1 to 4):
- 60-574-49;
 - 60-574-52;
 - 60-574-53; and
 - 60-574-54.
8. For the following historic resources within the Bent Mountain Rural Historic District, provide an impact assessment (Tasks 1 to 4):
- 80-5677-5; and
 - 80-5677-7.

9. Resolve the following discrepancies for resources within the Bent Mountain Rural Historic District. Reeve et al (January 2017) *Mountain Valley Pipeline Project, Phase IB Archaeological Survey Report, Addendum 1, Roanoke and Montgomery Counties, Virginia* indicates that sites 80-5677-4, 5, 6, and 7 are not eligible, but DR Cultural Resources Attachment Table 3f, filed February 17, 2017, lists them as “may contribute” to the District. The Master List has site 80-5677-6 at 93 feet from centerline, but Table 3f has it at 28 feet.
10. Identify the cultural resource reports where the following sites listed on tables 3f and 3e (filed February 17, 2017) were recorded: historic sites WZ-155 and 156 in Wetzel County, West Virginia; historic sites HS-899 and 901 in Harrison County, West Virginia; historic sites LE-151, 152, and 154 in Lewis County, West Virginia; historic site 258 in Webster County, West Virginia; historic sites NI-143 and 155, and archaeological sites 46NI829, 830, 831, 832, 833, 834, 835, 836, 837, 838, and 839 in Nicholas County, West Virginia; historic site GB-1818 in Greenbrier County, West Virginia; and site 60-5190 in Montgomery County, Virginia.
11. File avoidance plans for the following cultural resources (or provide references to previously filed reports that contained those plans), and document SHPO review of the plans:
 - a. Site 46DO112 (Watson Property Cemetery) in Doddridge County, West Virginia;
 - b. Six 46BX114 in Braxton County, West Virginia;
 - c. Sites 46NI846 and 847 in Nicholas County, West Virginia;
 - d. Site 46SU163 in Summers County, West Virginia;
 - e. Site 46GB498 in Giles County, Virginia;
 - f. Sites 60-332, 5193, and 5194 in Montgomery County, Virginia;
 - g. Sites 44RN381, 387, 388, and 80-5690 in Roanoke County, Virginia;
 - h. Sites 46FA551 and 552 in Franklin County, Virginia; and
 - i. Sites 71-5483, 5484, and 5494 in Pittsylvania County, Virginia.

Geology

1. Attachment DR4 General 3c stated that Mountain Valley’s Karst Specialist Team (KST) has “developed a number of recommendations, including case-specific conditions in which sampling and monitoring is warranted. The KST’s response to the December 20, 2016 Virginia Cave Board letter will be provided to FERC under separate cover.” Provide a copy of this letter as well as the recommendations developed by Mountain Valley’s KST and whether Mountain Valley would commit to adopting those recommendations.

2. Attachment DR4 Alternatives 3 included a figure: “Route Alternatives in the Area of Slussers Chapel Conservation Site.” However MPs cannot be identified in that figure due to the low resolution of the image. Provide a revision of the figure in sufficient resolution such that all features and specifically MPs can be read.
3. The response to Geology 6 (filed February 2017) stated that peak horizontal ground accelerations (PGAs) would be greater than 0.14 the force of gravity (g) from MPs 192 to MP 210. Previous mapping by Mountain Valley indicated a much larger area, from MPs 165 to 230, and maximum PGAs with 2 percent chance of exceedance in 50 years of 0.14 g. To resolve the apparent discrepancies, provide:
 - a. the MPs where PGAs with 2 percent chance of exceedance in 50 years would be equal to or greater than 0.14 g;
 - b. the maximum PGA that would be crossed by the MVP according the USGS Long-term Model seismic hazard data (PGA, 2 percent chance of exceedance in 50 years); and
 - c. clarification that the cover over Class 1 pipe in areas of with PGAs equal to or greater than 0.14 g would not be greater than 10 feet.
4. Revised table 4.1.2-2 (updated March 2017) contains an apparent discrepancy where the start point of MP 197.5 is greater than the end point MP of 197.4. Correct this apparent error.
5. In response to public comments, provide a discussion of ground heaving or the freeze thaw cycle that may affect slope stability and the potential for landslides in areas with high potential for landsliding.
6. Address the letter filed with the FERC by Coronado Coal on February 22, 2017 (accession number 20170222-5078). In particular, provide recent communications with Coronado Coal towards reaching an agreement to cross their coal reserves and compensate for impacts.
7. Table 4.1.1-11 is missing several areas of landslide concern that are identified in Table 1 – Landslide concern Areas Crossed by the Mountain Valley Pipeline in Mountain Valley’s updated Landslide Mitigation Plan (Attachment DR4 General 2c)]. Provide an updated Table 4.1.1-11 that includes all areas of landslide concern as identified in the Landslide Mitigation Plan and table 4.1.1-11.
8. Clarify if the October 2016 pipeline route would run perpendicular to a potential triggered slope displacement hazard in proximity to the GSCZ, provide MPs for the hazard, and indicate if Mountain Valley still intends to use Class 2 pipe in this area.

Soils

1. Attachment DR4 General 3d stated that: "...topsoil and subsoil will be tested for compaction through the Project area as necessary in areas disturbed by construction activities" and "appropriate soil compaction mitigation will be performed in severely compacted residential areas." Clarify whether soil compaction testing and mitigation would be conducted along the entire pipeline route, or limited to agricultural and residential areas.
2. Revise table 4.2.1-1 to remove table note i/ (which was added by Mountain Valley post-draft EIS). Update all acreages as necessary.
3. There are several discrepancies between the totals presented for temporary and permanent access roads in table 4.2.1-1 as compared to Appendix N. Appendix N-4 shows 921.2 acres of permanent impact to soils with wind erosion potential while table 4.2.1-1 shows 0.0 acres of impacts. For compaction potential Appendix N-4 reports 18.3 acres of temporary impacts for compaction potential while table 4.2.1-1 reports 550 acres. Appendix N-4 reports 0.0 and 0.0 acres of permanent and temporary impact respectively while table 4.2.1-1 reports 9.7 and 38 acres respectively. Clarify these apparent discrepancies.
4. There are several discrepancies between the totals presented for Cathodic Protection Areas in table 4.2.1-1 and Appendix N-8. Appendix N-8 reports 7 acres, 1.3 acres, 2.9 acres, and 1.1 acres for prime farmlands, compaction potential, water erosion potential, and poor drainage potential, respectively. Table 4.2.1-1 reports 14.3 acres, 2.7 acres, 6 acres, and 2.1 acres for prime farmlands, compaction potential, water erosion potential, and poor drainage potential, respectively. Clarify these apparent discrepancies.

Land Use, Transportation, Recreation, and Visual Resources

1. Attachment DR4 General 3c stated that "Mountain Valley will incorporate the recommendations from the Virginia Department of Transportation (VDOT) into the Traffic and Transportation Management Plan." Clarify if the revised Traffic and Transportation Management Plan filed on February 9, 2017 includes these VDOT recommendations, and if not provide an updated version.
2. Revise table 2.3-3 from the draft EIS to include acres affected for each land use type for each yard.
3. Provide a table with the miles of each land use category the pipeline would cross by state.
4. The updated table 4.8.1-1 appears to show 0.0 acres of construction impacts for aboveground facilities in Virginia, but shows 0.1 acres of operational impacts. Clarify this discrepancy.

5. The updated table 4.8.1-2 has discrepancies for the Virginia launcher and receiver sites and for the subtotals. The launcher and receiver sites show 0.2 acre under operational agricultural land use and 0.1 acre under operational forest land use, with no construction impacts; however, the totals listed for launcher and receiver sites show 0.3 acre of construction impact and no operational impact. Additionally, the Virginia total of 41.0 acres for construction does not appear to add up to the total of the Transco Interconnect of 41.0 acres and the launcher and receiver sites of 0.3 acre, which would be 41.3 acres. Clarify these discrepancies.
6. The updated table 2.3-3 has a number of discrepancies with the updated table 4.8.1-3 in describing yards for the MVP. Provide updated tables or clarification for the following issues:
 - a. table 2.3-3 lists 15 yards in West Virginia and table 4.8.1-3 lists 19 yards in West Virginia;
 - b. the total of the acreages for West Virginia in table 2.3-3 adds to 122.4 acres, but the subtotal listed shows 132.6 acres;
 - c. table 2.3-3 shows MVP-RD-001 and MVP-LY-007 crossed out, but table 4.8.1-3 still lists those yards;
 - d. table 4.8.1-3 lists MVP-AP-001, MVP-AP-002, MVP-LOG-001, and MVP-SA-001, but table 2.3-3 does not list these yards;
 - e. table 4.8.1-3 lists acreages on the same line as the heading for West Virginia which are not the subtotals for West Virginia; and
 - f. acreage totals for the individual yards in table 4.8.1-3 do not match the acreages listed for yards listed in table 2.3-3.
7. Address the comment regarding property values provided by Kenneth Dudley during the November 1, 2016 FERC public session to take comments on the draft EIS.
8. On February 9, 2017 Mountain Valley updated one of the site-specific residential plans. File a complete set of updated Site-Specific Residential Construction and Mitigation Plans for all houses within 50 feet of a construction workspace.
9. In the updated table 4.8.1-10 the MP locations of the last nine Key Observation Points (KOP) appear to be overlapped with previous MP numbers as they contain extra numbers and multiple decimal points. Clarify the MP locations in the table.
10. For the updated table 4.8.2-1 provide definitions for the terms, "Purchased," "ROW acquired," "Landowner Compensated," and "PLROW signed." Clarify the differences between these terms.
11. The current visual simulation for the Weston Gauley Bridge Turnpike appears to be at the crossing of the Gauley Turnpike (State Route 4) at MP 72.4. Provide

updated visual simulations and analysis for the Weston Gauley Bridge Turnpike at the trail crossing location near MP 66.9.

12. Confirm that the filed alignment sheets depict the correct location of the Appalachian National Scenic Trail (ANST) as discussed in the FS March 3, 2017 letter (accession number 20170306-5054).
13. Address the following comments regarding the JNF Visual Impact Assessment:
 - a. Page 7: The bulleted environmental factors do not include all of those contained in the Bureau of Land Management (BLM) Visual Resource Contrast Rating Manual (missing are Season of Use, Light Conditions, Recovery Time, Spatial Relationships, Atmospheric Conditions, and Motion). While some of these factors may not be relevant (like Motion), Recovery Time and Season of Use would appear to be relevant. Provide clarification regarding these factors;
 - b. Page 8, Section 4: This section describes temporary, long-term, and short-term impacts, but the only impacts addressed seem to be temporary (“The simulations demonstrate what the Project right-of-way would look like post construction but before revegetation.”). Provide a discussion of revegetation, in addition to the mitigation measures that are listed in Section 5. Also discuss the types of maintenance activities that would occur and their frequency, along with their impacts;
 - c. Page 16, 1st full paragraph: State definitively whether the right-of-way would be feathered to soften the edges;
 - d. Page 17, first paragraph: This states that there will be no visible notch in the vegetation at the top of Peters Mountain. Appendix B, Figure 7, however, shows what appears to be a visible notch. Provide clarification;
 - e. Page 18, 3rd full paragraph: The text says that: “The ROW is not visible in the simulation due to screening terrain and vegetation as well as the distance to the ROW. The simulation demonstrates that the ROW will be effectively screened with the vegetation; thus, contrast levels are not perceptible.” However, Appendix B, Figure 9 says: “The red arrow indicates where the proposed pipeline would be visible crossing over Peters Mountain.” Provide clarification;
 - f. Page 26, first full bullet, last line: The text says there would be no visual impact, but Figure 19 in Appendix B says that modifications would be apparent. Provide clarification;
 - g. Page 26, 2nd full bullet: The text says there would be low visual impacts to the ANST, but Figure 20 in Appendix B says that modifications would be apparent. Explain why this would be a low visual impact;

- h. Page 26, 3rd full bullet: The text says there would be no visual impact, but Figure 21 in Appendix B says that modifications would be apparent. Provide clarification;
 - i. Site photographs should be taken which best represent the human visual perception. Standards include lens was set at 31 mm to compensate for crop factor (31 mm lenses setting X 1.6 crop factor = 49.6 mm output view); thereby creating a 50-mm equivalent focal length. The 50-mm equivalent focal length produces a 38.6° horizontal field of view which best represents the human visual perception (HFOV) [National Research Council. 2007 Environmental Impacts of Wind-energy Projects. Board on Environmental Studies and Toxicology, Division on Earth and Life Sciences. National Academies Press, Washington, D.C. 376 pp.] Photo simulations presented in the JNF report are not at this standard. They are panoramic and cropped which inhibits HFOV. Explain the apparent deviation from the standard and describe any corrective actions that Mountain Valley intends to apply.
 - j. Simulation PT-02 shows no change even though the pipeline would cross. Clarify this apparent discrepancy; and
 - k. Many of the simulations were created using photos that were taken when weather conditions were not conducive to the analysis. Numerous KOP locations (KOP 115, KOP 113, KOP 114, KOP 103, KOP PR-1, KOP PR-2, KOP PR-3, KOP PR-4, KOP PR-5, and KOP PR-6) were clouded by fog and ground levels were not visible. Provide updated photographs for these locations that are taken on clear days.
14. Address the following issues, noted in the In the February 2017 filing of the Blue Ridge Parkway Visual Impact Analysis:
- a. Simulations for KOPs 44 and 65 both state that the project would be visible, however, the pipeline route is not readily discernable in the photos. Provide updated simulations that point out the pipeline route or provide clearer photos that make the changes in the post construction views more recognizable;
 - b. Visual simulations for KOPs 52, 53, 56, 57, 58, 59, 60, 62, and 64 outline the pipeline right-of-way, but do not illustrate views with vegetation removed. Provide updated simulations that show tree clearing impacts and other disturbances;
 - c. Page 1, 3rd paragraph, the text stated that: “The proposed location is the only feasible location to cross the BLRI within relatively flat, non-forested, open land, thereby minimizing tree clearing and other construction disturbance on or near the BLRI.” However, Page 14 indicates that Alternative 3 is the preferred alternative and would avoid clearing mature

trees in a certain area, among other reasons. Clarify this apparent discrepancy;

- d. Page 14, 1st full paragraph, explain why future visibility would be higher once surrounding vegetation was reestablished and why it would not be lower;
- e. Page 16, bullets, clarify when “the Project” is mentioned, whether this is applicable to Alternative 3 or Mountain Valley’s Proposed Route;
- f. Site photographs should be taken which best represent the human visual perception. Standards include lens was set at 31 mm to compensate for crop factor (31 mm lenses setting X 1.6 crop factor = 49.6 mm output view); thereby creating a 50-mm equivalent focal length. The 50-mm equivalent focal length produces a 38.6° horizontal field of view which best represents the human visual perception (HFOV) [National Research Council. 2007 Environmental Impacts of Wind-energy Projects. Board on Environmental Studies and Toxicology, Division on Earth and Life Sciences. National Academies Press, Washington, D.C. 376 pp.] Photo simulations presented in BRP report are not at this standard. They are panoramic and cropped which inhibits HFOV. Not all represent the human visual perspective. Explain the apparent deviation from the standard and describe any corrective actions that Mountain Valley intends to apply.
 - i. KOP 52 – the simulated permanent ROW floats in the air. No actual tree clearing or right-of-way is simulated. Clarify this apparent discrepancy;
 - ii. KOPs 53-58 – the simulated permanent ROW is not a simulation. An outline of where the potential ROW would be is drawn, but no simulation showing any disturbance, tree removal, or post construction mitigation is shown. Clarify these apparent discrepancies;
 - iii. KOPs 59-64 - the simulated permanent right-of-way floats in the air. No actual tree clearing or right-of-way is simulated. Clarify these apparent discrepancies.

Alternatives

1. Provide documentation of the National Park Service review of Mountain Valley’s proposed pipeline route and method of crossing the Blue Ridge Parkway.
2. Provide additional data rows for the tables “Comparison of Alternatives in the Area of Slussers Chapel Conservation Site and the October 2016 Proposed Route” and “Comparison of the FERC Poor Mountain Variation and the October 2016 Proposed Route” (filed February 2017) including: a) number of towns/populated areas within 0.5-mile; b) number of known cultural resources within 0.5-mile; c)

- number of landowner parcels crossed; d) acres of interior forest affected; e) number and acres of forested wetlands crossed; f) number of major river crossings; g) number of streams crossed designated as public drinking water supplies; and h) miles of landslide prone soils crossed.
3. Assess the viability of a modified Variation 250 that would re-join the proposed route near MPs 223.7 (instead of rejoining near MP 222.15) so as to avoid being located south of the Pulaski Thrust Fault in the vicinity of MPs 222.05 – 222.25. The purpose of a modified Variation 250 would be to further minimize potential impacts on water supplies and caves. Provide all relevant additional details (tables and mapping) and narrative analyses regarding advantages and disadvantages of Variation 250 and modified Variation 250 in comparison to the October 2016 proposed route. Include the results of further coordination between Mountain Valley and the VDCR regarding these variations.
 4. Address the comment in accession number 20170315-5063 and develop and assess a potential reroute located west of, and avoiding, The Nature Conservancy easement. Provide all relevant additional details (tables and mapping) and narrative analyses regarding advantages and disadvantages of the new variation in comparison to the October 2016 proposed route.
 5. Regarding Attachment DR4 Alternatives 10 (filed February 2017), address the stakeholder comment regarding proximity to wells for FERC ID No. 20161207-0035, the comment regarding bisection of the property for FERC ID No. 20161201-5118, and clarify the statement that: “Mountain Valley will limit its use of this access road to the minimum width necessary, which would result in no disturbance to the tree or flower bed” for FERC ID No. 20161017-0031.
 6. Further update table 3.5.3-1 (Attachment DEIS Recommendation-16, filed December 22, 2016) as provided by Mountain Valley in its February 2017 (response to EIR Question Alternatives No. 9) with conclusions wherever possible and/or new information (such as for accession numbers 20150316-5023 and 20150609-5107), for pending minor route variations and/or stakeholder-identified issues. Where survey access has been denied (such as accession number 20160406-5119), perform an analyses of alternative routing using available desktop data in an attempt to address landowner concerns. As applicable, consider and discuss mitigation measures unrelated to routing, or explain in detail why no rerouting or mitigation is warranted. Indicate if any of the identified issues have been resolved with the landowner.
 7. Provide an analysis (similar in the format to table 3.5.3-1 from the draft EIS) for both newly reported and updates to previously submitted landowner or land manager requested minor route variations or related concerns as supplemented in the docket, including but not limited to the following accession numbers:
 - a. 20161024-5011;

- b. 20161027-5132;
- c. 20161207-0011;
- d. 20161212-5040;
- e. 20161212-5044;
- f. 20161212-5046;
- g. 20161212-5234;
- h. 20161213-5021;
- i. 20161213-0057;
- j. 20161216-5043;
- k. 20161220-0051;
- l. 20161220-0010;
- m. 20161223-0033;
- n. 20161221-5574;
- o. 20161026-5020/20150420-5197 (reference the same topic);
- p. 20161110-5022;
- q. 20161222-5538;
- r. 20161222-5006;
- s. 20161228-0073;
- t. 20161222-5090;
- u. 20161221-5103 (regarding the Falls Ridge Nature Conservancy Preserve);
- v. Glen Frith (Franklin County High School , Nov. 2, 2016 public comment session);
- w. James Chandler (Roanoke, Virginia Sheraton, Nov. 2, 2016 public comment session);
- x. Vicki Pierson (Lewis County High School, Nov. 1, 2016 public comment session); and

- y. Ginger Smithers (emails to FERC staff dated February 21-23, 2017, recently placed in the docket).

If Mountain Valley cannot make the route adjustments requested by these landowners, explain why.

Reliability and Safety

1. In response to comments, for each of the 37 fire stations within 1 mile of the MVP facilities, provide the number of full-time staff, volunteer staff, and a list of available equipment. Also provide maps showing the preferred routes used by these fire stations for accessing remote areas of the project.

Document Content(s)

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