United States Department of Agriculture
Forest Service
George Washington and Jefferson National Forests
5162 Valleypointe Parkway
Roanoke, VA 24019
540-265-5100

File Code: 1900; 2700
Date: August 16, 2016

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

Dear Ms. Bose:

Subject: Forest Service Comments on the Hydrologic Analysis of Sedimentation
OEP/DG2E/GAS3
Mountain Valley Pipeline Project
Docket No. CP16-10-000

The Forest Service submits comments on the *Hydrologic Analysis of Sedimentation* document filed by Mountain Valley Pipeline, LLC (MVP) with the Federal Energy Regulatory Commission on June 16, 2016 (privileged filing) and on July 25, 2016 (public filing). The proposed Mountain Valley Pipeline Project would affect 3.4 miles of National Forest System lands on the Jefferson National Forest.

During a conference call held on July 5, 2016, the Forest Service discussed its comments on the *Hydrologic Analysis of Sedimentation*, provided in Attachment 1 to this letter. Though MVP addressed questions and comments from Forest Service staff during the conference call, we request that MVP revise the document with clarifications and edits to reflect the July 5 discussion. We also request that MVP revise the *Hydrologic Analysis of Sedimentation* to answer the questions listed in Attachment 2 about the model assumptions and data results.

The Forest Service appreciates the opportunity to review the *Hydrologic Analysis of Sedimentation* document and looks forward to receiving the revised document. We also appreciate MVP filing the document as public information for review by stakeholders.

For questions, please contact Jennifer Adams, Special Project Coordinator, by phone at (540) 265-5114 or by email at jenniferpadams@fs.fed.us.

Sincerely,

JOBY P. TIMM
Forest Supervisor

cc: Mountain Valley Pipeline, LLC

ATTACHMENT 1

Forest Service Comments on the *Hydrologic Analysis of Sedimentation*

- **Section 2.0** – typo of the word "subwatershed" on page 4.
- **Section 2.2** – Applicant states "soil losses after the land has been revegetated are expected to be similar to those of a shrub/scrub landscape." Justify this assumption.

Reply - Eventually, the area will likely succeed into a shrub scrub landscape as the author describes, but unless the applicant is planting shrubs, it will likely be a grass/forb landscape for a substantial period of time. A proper analysis would include a sediment yield increase for the grass/forb transitional period and then the specific elevated soil loss from a shrub/scrub cover class.

- **Section 2.35** – Applicant makes the statement "According to a review conducted by the U.S. Environmental Protection Agency (USEPA 1993), soil containment may average as high as 85 percent under proper application of soil and erosion control best management practices (BMPs); however, this estimate was in reference to coastal areas, and given the complexity of the terrain within the JNF, containment from BMPs will likely be less than 85 percent but still substantial.

No references to pipeline construction or any disturbance-specific BMPs for pipelines could be located in the document and the author and the applicant stated that the EPA publication was for "coastal areas." Please provide a justification for the relevance of this document to the proposal. It is unlikely that the EPA document is relevant in an analysis of large corridor disturbance perpendicular to the slope in steep, mountainous conditions. Requests for the specific statement that references the 85% number in the EPA publication that the author cites have yet to be answered, so a simple search of the document was conducted looking for the number 85. Five references were found that specifically indicated an 85% reduction in sedimentation as the applicant does: Table 2-1 (p. 2-15), terraced agriculture; Table 3-25 (p 3-44), applying dust oil to forest roads; Table 4-15 (p 4-77), construction sites; Case Study 3 (4-96), wetland filtration in Florida; and paragraph 1 (p 5-32), complex constructed sand filters. None of these are proposed by the applicant and are irrelevant to the current analysis. This is especially important because the BE/BA for the project applies this 85% reduction to the projected sediment estimates in the effects section of the BE/BA. An 85% reduction is not reasonable under the best circumstances. For example, the sediment analysis generally performed by Forest Service hydrologists on the George Washington and Jefferson National Forest applies mitigation measures that reduce the sediment produced from the background level as follows: standard practices (i.e. waterbars) 10%; seed 13%; fertilizer 12%; and road surfacing 25%. For these to be applied and considered in the analysis, they must be assured in the NEPA.

- **3.1 Baseline Erosion and Soil Loss** – Applicant states "Calculated using a weighted mean, baseline soil yields within the study area are projected at 82.1 tons per square mile per year."

It is unclear whether this is simply a descriptive characterization of the inherent variability of the project area soils or that the analysis used a weighted mean of the soil yields to estimate sedimentation. A weighted mean is not site-specific and would be inappropriate for a GIS-based analysis that has ready access to site soil survey data. Please clarify.

- **Table 4** (p. 11) has two identical sediment loads (down to the hundredths) for Load Above Baseline for Actions on JNF Lands in column 7. This could be a coincidence, but please examine.

- **3.2 Proposed Action Erosion and Soil Loss**

This sections has multiple fundamental problems.

In the first sentence, the applicant makes the statement that the actions proposed would "temporarily" increase sediment yields. This is an incorrect premise and unfortunately is the foundation of the effects discussion. The applicant states that pipeline construction will generate sediment loads well above background, but treats the disturbance as a single-year occurrence. The reality is that the sediment yields will continue to be elevated, decreasing over subsequent years to a new normal that is dependent on the persistence of the waterbars and other structural BMPs and the cover and type of revegetation of the pipeline corridors. The pipeline corridors will likely be maintained in a shrub/grass/forb state for the life of the pipeline. As Table 2 (p. 7) shows, this kind of land cover would have a different Management Factor that will be more than three times the current condition. **Please discuss outyear sediment production from all proposed disturbance annually until you estimate when (if ever) sediment yields return to pre-disturbance levels. <u>All</u> sediment produced during the life of the project must be estimated in order to inform the biologists and eventual decision maker of the full effects of the project. If you anticipate that a new background sediment level is likely to be the case (probably the most reasonable and logical answer based on the amount of disturbance) then please disclose the new background and estimate the time it will take for the system to reach this new equilibrium. The cumulative effect of several years of elevated sediment from the project must be discussed in the context of cumulative effects in the wider analysis watershed.** Also, the properties of the disturbed soils could also affect the erosion rate. Depending on the amount of pipeline construction disturbance in the watershed, the new sediment yield eventually becomes the new background level of the altered system and could eventually become indistinguishable at the large watershed level; however, the proposal is a permanent land cover conversion that will have long-term effects. These effects could be significant or indistinguishable at the watershed scales discussed but a disturbance of this scale will not return to background sediment levels. These short and long term effects are not disclosed in the report or factored into the effects in the BE/BA.

The continual reference to sediment effects from actions only on the Jefferson National Forest is irrelevant to the effects from the project. To make an informed decision about allowing the construction of the pipeline on the proposed route that crosses the National Forest, the decision maker needs to know the direct, indirect, and cumulative effects from all activities in the analysis watershed because allowing the construction across the Forest or denying the permit is directly connected to the consequential route the pipeline takes.

The report characterizes the model as a worst-case scenario because it does not apply mitigation measures in the analysis. First, the report does not state what conservation measures would be applied and their efficacy, so there is no context to judge the statement. Second, the model does not take extreme rainfall events, slope stability changes induced by the pipeline construction, and other factors that would have to be included in a worst case scenario. This characterization is incorrect.

No cumulative effects boundaries or justifications are present. These are crucial to any meaningful effects analysis in the BE.

Please define “headwaters” for purposes of the discussion.

ATTACHMENT 2

Forest Service Questions about the Model Assumptions and Data Results
For the *Hydrologic Analysis of Sedimentation*

1. Better describe what the proposed action consisted of in the model, as it was unclear what specific land disturbing activities were included. A general description of those would be helpful (ie: 125-ft pipeline ROW, all access roads and staging areas).
2. Since the analysis did not incorporate the recently filed route modifications FS71 and FS78, modifying the route as it crosses Craig Creek and the Appalachian National Scenic Trail near Peters Mountain, respectively, how will these changes be addressed? How do these changes affect the model results, since there are changes in the number of proposed crossings on Craig Creek, but adds an additional crossing of an unnamed perennial spring/tributary below the proposed crossing of the Appalachian National Scenic Trail on Peters Mountain?
3. Since the analysis only did a one-time construction impact assessment, what are the assumptions for the number of years or months to complete the pipeline construction? What is the total load expected to complete construction of the pipeline?
4. Better describe the long-term/cumulative impacts of the pipeline, such as the total load and yields above baseline for the pipeline as it transitions to various vegetative states over the life of the proposed project, including construction, operation, and maintenance.
5. The report references best management practices (BMP) to be up to 85% effective, but for this terrain that is an overestimate. Upon completion of our review of the Erosion and Sediment Control Plan, we will provide more specific feedback.
6. Expand the conclusion section to more accurately predict the actual containment by BMPs and consider heavy storm events effects that are likely to occur during construction and operation of the proposed project.