

FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, D.C. 20426  
December 14, 2012

OFFICE OF ENERGY PROJECTS

Project No. 14446-000—Colorado  
Peabody Trout Creek Reservoir  
Hydroelectric Project  
Peabody Trout Creek Reservoir LLC

Brian Yansen, Director of Real Estate Development  
Peabody Trout Creek Reservoir LLC  
701 Market Street  
St. Louis, MO 63101-1826

**Reference: Additional Study Request**

Dear Mr. Yansen:

On December 4, 2012, we issued study requests, comments on your proposed studies, and comments on your pre-application document for the proposed Peabody Trout Creek Reservoir Hydroelectric Project. However, we inadvertently left out one study request, *Geology and Soils Assessment*. Please include the study in attached schedule A in your proposed study plan.

If you have any questions, please contact Shana Murray at (202) 502-8333 or [shana.murray@ferc.gov](mailto:shana.murray@ferc.gov).

Sincerely,

Timothy J. Welch, Chief  
West Branch  
Division of Hydropower Licensing

Enclosures: Schedule A

cc: Mailing list  
Public Files

David Merritt  
URS Corporation  
713 Cooper Avenue, #100  
Glenwood Springs, Colorado 81601

## **Schedule A Geology and Soils Assessment**

### **Geology and Soils Assessment**

§5.9 (b)(1) – *Describe the goals and objectives of each study proposal and the information to be obtained.*

The goals of this study are to conduct a geology and soils evaluation to define the existing geological conditions at the site and to develop design criteria to ensure that the proposed project facilities and structures would be safe and adequate to fulfill their stated functions. The specific objectives of this study include:

- 1) Identify the existing soil and geologic features at the proposed construction site;
- 2) Determine the potential effects of project construction, operation, and maintenance activities on the geology and soil resources in the project area;
- 3) Identify the seismic sources including future earthquakes that are likely to occur, including the potential for reservoir-triggered seismicity, and the magnitude of the possible earthquakes;
- 4) Develop measures to avoid, minimize, or mitigate potential adverse effects of construction to, or resulting from, geologic and soil resources in the project area; and
- 5) Acquire soils and geologic information for use in the preparation of a supporting design report that demonstrates that the proposed structures are safe and adequate to fulfill their stated functions.

§5.9(b)(2) – *If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.*

Not applicable.

§5.9(b)(3) – *If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study.*

The Federal Energy Regulatory Commission must decide whether to issue a license and determine the adequacy of proposed structures prior to construction for the Peabody Trout Creek Reservoir Hydroelectric Project. In making that decision, the Commission must consider the effects of the project on the environment, including effects related to excavation, spoil disposal, soil erosion, settling, and subsidence and the effect of seismic activities on the structural integrity of the proposed project structures.

Project No. 14446-000

2

§5.9(b)(4) – *Describe existing information concerning the subject of the study proposal, and the need for additional information.*

The pre-application document briefly discusses the site geologic conditions based on a Routt County planning document. However, the summary of existing information did not include specific information on the properties of site-specific rock and soil units. This information is needed for Commission staff to adequately assess the potential for effects to soil and geology resources resulting from project construction, operation, and maintenance; and also to assess the adequacy of the proposed project features, given the properties of the specific rock and soil units at the proposed project site.

§5.9(b)(5) – *Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements.*

Project construction, operation, and maintenance activities have the potential to be affected by, and to affect, geology and soils in the project area. This study will assist in identifying specific areas within the project area where the condition or nature of the geology or soils is such that measures will have to be proposed to avoid, minimize, or mitigate potential effects from project construction, operation, and/or maintenance. The proposed project includes the construction of: a 1,900-foot-long earth dam, having a maximum height of 75 feet, and forming a reservoir with a storage capacity of 11,720 acre-feet. The study will indicate any special design and construction measures that Peabody would need to incorporate into the project design, based on the results of the geologic investigations.

§5.8(b)(6) – *Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.*

The study plan should address how the following specific information will be gathered by Peabody:

- 1) A comprehensive review and preliminary analysis of existing geologic and soil resources using existing soils maps, aerial photography, or both;
- 2) An analysis of regional stratigraphy and geologic structure based on review of existing literature;
- 3) Field investigations to determine the properties of rock and soil units,

- including their occurrence and distribution at the proposed project area;
- 4) A preliminary analysis of the effect of the composition of soils in the project area on the construction, operation, and maintenance of the proposed project;
  - 5) A description of all borrow sites and spoil material sites, including an investigation into local needs for the waste material, such as for backfill, reclamation, or construction; and
  - 6) A description of all access roads, worker camps, and construction areas, including an investigation into existing site conditions and needs for backfill, waste material, reclamation, or construction.

Peabody should prepare a report that includes the results of the surveys and field investigations and identifies, describes, and assesses the extent to which project-related actions and activities may be affected by, or may affect, local geology and soils. The report should describe all methods used; discuss regional geology and soils distribution; describe the lithologies, stratigraphy, and soils types present in the construction zones; document the results of all field investigations; and include maps showing the areas investigated.

The report should also propose measures and any specific implementation plans needed to reduce any adverse potential effects of project construction, operation and maintenance to or from soil and geologic resources, and recommend design details to account for unique soil and geologic features. The information gathered during this analysis should also be used to inform Peabody's supporting design report (submitted to the Commission with the final license application). All existing data relied on to develop the supporting design report should be filed with the Commission for this proceeding.

*§5.9(b)(7) – Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.*

Given the amount of scope of the proposed project, the estimated cost of literature review, some additional field investigations, and report compilation is between \$40,000 and \$50,000. Local geologic conditions may influence the number of samples needed for a full investigation of the site. The study efforts can be completed within 1 year.