

## **REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE ENVIRONMENTAL REPORT FOR THE RENO CREEK ISR PROJECT**

The purpose of the following Requests for Additional Information (RAIs) is to provide additional information and data that are necessary for the U.S. Nuclear Regulatory Commission (NRC) to fulfill the requirements of NRC's National Environmental Policy Act of 1969 (NEPA) - implementing regulations at Title 10 *Code of Federal Regulations* (CFR) Part 51 (10 CFR 51), and the Domestic Licensing of Source Material requirements in 10 CFR Part 40. These RAIs were developed during the NRC staff's review of AUC LLC's (the "applicant") *Environmental Report* (ER) and *Technical Report* (TR), which were submitted to the NRC as part of its license application for the proposed Reno Creek ISR Project. The staff's environmental review will become a supplement to the Generic Environmental Impact Statement for In Situ Leach Uranium Milling Facilities [NUREG-1910 (GEIS)] that was published in May 2009. NEPA requirements as well as NRC implementing regulations and guidance documents serve as the basis for these requests.

### **GENERAL**

#### **RAI - GEN-1 Preconstruction Activities**

On September 15, 2011, the U.S. Nuclear Regulatory Commission (NRC) published a final rule in the *Federal Register* (76 FR 56951) to clarify the definitions of *commencement of construction* and *construction* with respect to materials licensing actions conducted under the NRC's regulations. This final rule was effective on November 14, 2011. The parts of the final rule that are applicable to the NRC's licensing action for the proposed Reno Creek in situ recovery (ISR) project are in Title 10 of the *Code of Federal Regulations* (10 CFR) 40.4 (Definitions) (repeated in 10 CFR 51.4 (Definitions)) and 10 CFR 51.45 (Environmental Report).

The applicable definitions in 10 CFR 40.4 follow. *Commencement of construction* means taking any action defined as "construction" or any other activity at the site of a facility subject to the regulations in this part (i.e., 10 CFR Part 40) that has a reasonable nexus to: (1) radiological health and safety; or (2) common defense and security. *Construction* means the installation of wells associated with radiological operations (e.g., production, injection, or monitoring well networks associated with in situ recovery or other facilities), the installation of foundations, or in-place assembly, erection, fabrication, or testing for any structure, system, or component of a facility or activity subject to the regulations in this part that are related to radiological safety or security. The term "construction" does not include:

- (1) Changes for temporary use of the land for public recreational purposes;
- (2) Site exploration, including necessary borings to determine foundation conditions or other preconstruction monitoring to establish background information related to the suitability of the site, the environmental impacts of construction or operation, or the protection of environmental values;
- (3) Preparation of the site for construction of the facility, including clearing of the site, grading, installation of drainage, erosion and other environmental mitigation measures, and construction of temporary roads and borrow areas;
- (4) Erection of fences and other access control measures that are not related to the safe use of, or security of, radiological materials subject to this part;
- (5) Excavation;

- (6) Erection of support buildings (e.g., construction equipment storage sheds, warehouse and shop facilities, utilities, concrete mixing plants, docking and unloading facilities, and office buildings) for use in connection with the construction of the facility;
- (7) Building of service facilities (e.g., paved roads, parking lots, railroad spurs, exterior utility and lighting systems, potable water systems, sanitary sewerage treatment facilities, and transmission lines);
- (8) Procurement or fabrication of components or portions of the proposed facility occurring at other than the final, in-place location at the facility; or
- (9) Taking any other action that has no reasonable nexus to:
  - (i) Radiological health and safety, or
  - (ii) Common defense and security.

The above defined activities comprising what *construction* does not include are alternately referred to by the NRC staff as “site preparation” or “preconstruction” activities.

Note that activities included under what the definition of what *construction* means are considered to be part of the proposed action for the purposes of evaluating the environmental impacts of a proposed project. However, the defined activities comprising what *construction* does not include are not considered by the NRC to be part of the proposed action. The NRC’s regulations in 10 CFR 51.45(c) specify what the analyses in applicant’s environmental reports must include with regard to the proposed action and site preparation activities.

Regarding the applicant’s environmental reports for materials licenses under 10 CFR 51.60, provide the following:

- (a) a separate description of those Reno Creek ISR Project site preparation (or preconstruction) activities excluded from the definition of construction (i.e., a description separate from that of the description of the proposed construction activities) which have been or will be undertaken, regardless of when those activities may occur in relation to the potential issuance by the NRC of the license to construct and operate the proposed ISR facility;
- (b) a separate description of the environmental impacts of such excluded site preparation activities (also including a description of any proposed measures to avoid or reduce adverse effects of the impacts); and
- (c) an analysis of the cumulative impacts of the proposed action (i.e., the incremental impact of the proposed action) on the human environment when added to the impacts of such excluded site preparation activities and to the impacts of other past, present, and reasonably foreseeable future actions (regardless of what agency (Federal or non-Federal) or person undertakes such other actions (see 40 CFR 1508.7)).

Provide a separate description of the proposed Reno Creek ISR Project activities included in the definition of construction, and a separate description of the environmental impacts of those construction activities (also including a description of any proposed measures to avoid or reduce adverse effects of the impacts). Further, the analyses for both the site preparation and construction activities shall, to the fullest extent practicable, quantify the various factors considered. To the extent that there are important qualitative considerations or factors that cannot be quantified, those considerations or factors shall be discussed in qualitative terms. The applicant’s response for both the site preparation and construction activities should be presented at equivalent levels of detail and should contain sufficient data to aid the NRC staff in its development of an independent analysis.

## **RAI - GEN-2 Cumulative Effects**

In Section 1.8 of the TR, the applicant states that the Central Processing Plant (CPP) will have the capacity to process up to two million pounds of  $U_3O_8$  per year from the proposed Reno Creek ISR Project operations as well as future ISR facilities operated by AUC and other uranium-loaded resin generators. The acceptance of loaded resin from outside sources along with future amendment areas in the Pumpkin Buttes Uranium District could potentially extend the life of the CPP facilities at the Proposed Project. In order for the NRC to assess the cumulative impacts of past, present, and reasonably foreseeable future actions (RFFA) per Section 5 of the GEIS, the geographic boundaries of the area must be explicitly established for each resource area as noted in Step 2 of the 11-step process established by the Council on Environmental Quality and included as Appendix F in the GEIS. A discussion of RFFA must be included in the cumulative-impact analysis.

Clarify nature and scope of AUC's plans with respect to future ISR facilities operated by AUC and other uranium-loaded resin generators from outside sources. Address any potential cumulative impacts of these future ISR operations.

Provide the following information:

- (a) Parameters used to develop the scope of the cumulative-impact assessment.
- (b) Geographic boundaries of the area that was used in Section 4.14 for each resource area to assess cumulative impacts and explain why this area was selected. Explain how this compares with the criteria from Section 5 and Appendix F of the GEIS.
- (c) Identify and describe RFFAs that may potentially contribute to the impacts of the proposed Reno Creek Project in addition to available information regarding the schedule for development of identified actions.
- (d) Quantitative information about each feature of the actions that was used to assess cumulative impacts for each resource area.
- (e) Address the implications of these future ISR operations outside of the Proposed Reno Creek Project (Per 40 CFR 1502.4, Proposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action are to be evaluated in a single NEPA document).

## **RAI – GEN-3 Permit Updates**

Table 1-4 of the ER identifies necessary environmental approvals and status of each with corresponding Federal and State agencies. Text in Section 1.6 states that all listed approvals are in progress. These approvals are necessary before operations can commence.

Provide an update of the status of proposed, ending and approved licenses and permits for the Reno Creek ISR Project. Update ER Table 1-4 on Federal and state licenses and permits required for the proposed Reno Creek ISR Project. Also include any additional county and tribal permits or approvals.

The information provided should identify the issuing agency, describe the type of license, permit or approval needed, and provide the current status of securing the license, permit or approval. This information is needed to complete the description of the proposed action and determine the environmental impacts of the licensing and permitting process on the proposed project.

## **RAI - GEN-4 Waste Disposal Options**

Table 2-1 of the ER includes a comparison of waste disposal options in terms of advantages and disadvantages but does not fully compare the disposal options or provide information including:

- land size/footprint,
- relevant regulations and permits,
- construction requirements,
- wastewater storage prior to disposal,
- wastewater treatment,
- decommissioning,
- environmental benefits,
- climate influences, and
- health and safety issues.

Provide detailed information for waste disposal options. This information will allow NRC staff to analyze the options in terms of both specific and general environmental impacts.

## **RAI - GEN-5 Alternatives**

Section 2.1.3 of the ER describes reasonable alternatives considered but rejected. However, as part of the NEPA process, NRC staff must analyze a full range of reasonable alternatives which are both economically and technically feasible in accomplishing the project goals. Currently the application describes the Proposed Action and the No Action alternative and does not give additional information for those alternatives that were considered but rejected.

Provide additional detailed information across all resource areas to allow NRC staff to access reasonable alternatives which may include relocation of the CPP or off-site processing. This information will be used to develop the Alternatives analyses which will allow a comparison of this Alternative with the Proposed Action across all resource areas.

## **LAND USE**

### **RAI - LU-1 Land Use Classification**

Table 3.1-1 and Figure 3.1-1 of the ER indicate that most land within and surrounding the proposed project is classified as non-agricultural land. This is not consistent with Section 3.1.4 (Agriculture) of the ER, which indicates that land within and surrounding the proposed project is predominantly rangeland used for livestock grazing – an agricultural activity.

Provide information for land use classification by providing an explanation of the classification system used to describe land use (e.g., the classification of livestock grazing rangeland as non-agricultural).

## **RAI - LU-2 Local Residences**

Section 3.1.5 of the ER states that there are approximately eight occupants currently living in five residences within 5 mi of the proposed project boundary based on landowner correspondence.

Please provide additional details for nearby residences. Please identify each residence and the number of occupants currently living at each residence within 5 mi of the proposed project boundary.

## **RAI - LU-3 Hunting and Hunting Restrictions.**

Section 3.1.7 of the ER indicates that the parcel of State of Wyoming land within the proposed project area is accessible via County Road 22 (Clarkelen Road) and provides potential hunting opportunities. However, Section 4.1.1.1.5 of the ER indicates that hunting will be restricted within the proposed project area on private lands.

Provide information regarding:

- Hunting restrictions on the parcel of state-owned land within the proposed project area.
- Whether Wyoming Department of Game and Fish (WGFD) leases any privately-owned land within the proposed project area for hunting.
- Communications or agreements with WGFD concerning hunting restrictions on the parcel of state-owned land and potential state-leased private land within the proposed project area.

## **RAI - LU-4 Potential Impacts between Proposed Construction and Infrastructure**

Figure 3.1-2 of the ER shows existing gas pipelines and coal bed methane (CBM) infrastructure within the proposed project area. This infrastructure includes buried water lines, buried powerlines, and buried gas pipelines. Figure 1-5 (Conceptual Site Plan) of the ER shows planned site facilities and infrastructure including wellfields, trunklines, and pipelines. Based on examination of these two figures, it appears that some of the planned ISR facilities and infrastructure will overlap with existing gas pipelines and CBM infrastructure.

Provide information regarding potential impacts between proposed construction of ISR facilities and infrastructure with existing gas pipelines and coal bed methane facilities and infrastructure at the Reno Creek site including:

- Whether planned ISR construction activities (e.g., earthmoving activities associated with wellfield and pipeline construction) will overlap or cross existing gas pipelines or CBM infrastructure.
- The mitigation measures that will be implemented to ensure that earthmoving activities associated with planned ISR construction will not impact existing gas pipelines and CBM infrastructure.

## **AIR QUALITY**

### **RAI - AQ-1 Emission Inventory Calculations for Greenhouse and Non-Greenhouse Gases**

Section 4.6 of the ER provides summary information concerning the project level emissions but in some cases, does not provide the details on how this summary information was reached.

Provide a greater level of detail for the project emission inventory calculations for both greenhouse gases and non-greenhouse gases. This would also help address inconsistencies in the environmental report (see AQ-2).

Examples of additional information to provide include, but are not limited to the following:

- Equations and associated constants for calculating the fugitive dust emissions for travel on unpaved roads and wind erosion,
- Quantities of each type of mobile equipment,
- Projected emissions from each mobile source,
- Methodology for determining operational time of drill rigs, and
- Carbon dioxide emissions associated with electricity consumption.

### **RAI - AQ-2 Emission Inventory Clarification**

Section 4.6 of the ER provides emission inventory information that appear inconsistent.

Examples of inconsistencies include, but are not limited to the following:

- Text on ER page 4-61 states that for all pollutants, the maximum emissions are projected to occur during the first year of construction/operation. However, ER Table 4-8 data shows that maximum particulate emissions occur in year 6.
- Text on ER page 4-61 states that no control factors were assumed for the emissions calculations whereas text on ER page 4-63 states that a 50% control factor for water suppression was applied for the fugitive dust calculations.

Review the emission inventory information provided in the ER for consistency. Provide clarification when appropriate.

### **RAI - AQ-3 Emission Levels**

Section 4.6 of the ER provides quantitative life cycle project emission levels but only qualitative descriptions of project phase emission levels. However, page 4-61 of the ER states that the projects emission were calculated by project phase. Although it is important to provide life cycle emission levels, the phase emission levels are required to independently verify the accuracy of the characterization of the project level emissions.

Provide quantitative project emission levels by the four phases or provide a method to calculate this from the life cycle emission levels (i.e., the combined emission level from all four phases).

### **RAI - AQ-4 Emission Generating Activities**

In Section 4.6 of the ER, it is unclear whether drilling is only a construction phase activity or if it is also an operation phase activity. Clarification concerning which activities are associated with

each phase is needed to accurately characterize the project level emission inventory and potential impacts.

Identify emission generating activities associated with each phase.

#### **RAI - AQ-5 Proposed Mitigation**

Text on page 4-63 of the ER states that a 50% control factor was applied to the fugitive road dust emission factors to account for water application for dust suppression. Two paragraphs later on that same page, the text states that the application of water to unpaved roads will reduce the amount of fugitive dust levels equal to or less than existing conditions (i.e., a control factor of 100% or more). The basis for either of these control factor values was not found in the ER. This information is required to provide a clear understanding of the effectiveness of the proposed mitigation that is incorporated into the inventory calculations as well as the basis used to properly characterize the project level emissions used to determine the impact magnitude.

Clarify the effectiveness of all proposed mitigation that is incorporated into the emission inventory calculations and provide the basis.

#### **RAI - AQ-6 Accuracy of Emission Inventory**

Section 4.6 of the ER provides summary information concerning the project level emissions but in some cases, does not provide the details how this summary information was reached. Detailed information is needed to verify the conclusions in the ER.

Provide detailed information and methodology for determining project level emissions, document additional information, and revise the inventory, if appropriate.

Examples topics include, but are not limited to the following:

- Exclusion of commuter traffic combustion emissions since the project NO<sub>x</sub> emission levels are at about 205 metric tons [226 short tons] per year (ER page 4-69),
- Comprehensiveness of the mobile emissions sources since the Dewey-Burdock ISR project inventory (NRC, 2012) identifies 26 mobile sources while the inventory in ER Section 4.6 lists only 11 mobile sources.
- Calculation for the amount of time equipment, such as, the drill rigs are used and generate emissions (i.e., based on equipment availability or estimations of actual use).

#### **RAI - AQ-7 Project Level Visibility**

In the ER, the visibility analysis is limited to Section 5.4 (cumulative effects) and is limited to a statement that visibility impacts (page 5-12) will have a small incremental effect on the cumulative impacts. Nitrogen oxides are pollutants that contribute to visibility impacts. According to ER Table 4-8, the pollutant with the highest annual emission from project activities (other than carbon dioxide) is nitrogen oxides with up to 205 metric tons [226 short tons] per year. This level of nitrogen oxide generated from the project activities indicate that a more detailed project level visibility analysis should be completed. This is consistent with EPA expectations for ISR SEIS analyses (Svoboda, 2010).

Provide a detailed project level visibility analysis for the near field and far field impacts.

### **RAI - AQ-8 Cumulative Impact**

The cumulative impact assessment in ER Section 5.4 relies on the Powder River Basin Coal Review analyses for the Bureau of Land Management which models air impacts until 2020. This addresses less than half of the 16 year period for the Reno Creek proposed action. The analyses should consider the air quality cumulative effects over the entire lifespan of the proposed project.

Provide cumulative air analyses that addresses the entire lifespan associated with the proposed action.

### **RAI - AQ-9 Fugitive PM10 emissions**

Section 4.6 of the ER states that atmospheric dispersion modeling generally shows that fugitive PM10 (particulate matter with a diameter less than 10 micrometers) emissions on the order of 200 tons per year results in an insignificant impact to ambient air beyond a distance of a few hundred yards from the source but no documentation is provided.

Provide the reference or basis for the statement in Section 4.6 of the ER.

### **RAI - AQ-10 Bulk Hazardous Chemical**

Section 1.4.8 of the ER states that the proposed ISR process will store and use bulk hazardous chemicals. However, the air impacts analysis in ER Section 4.6 does not address these bulk hazardous chemicals or other hazardous air pollutants.

Describe the expected emission level of any hazardous air pollutants and other material stored in bulk (e.g., acids) and any associated impacts.

### **RAI - AQ-11 Air Permit Information**

Table 1-4 of the ER indicates that an air permit application will be submitted to Wyoming Department of Environmental Quality (WDEQ) during the third quarter of 2013. Section 4.6 of the ER provides air emission inventory data. This type of information will likely be provided to WDEQ as part of the permitting process. An understanding of any distinctions between these two inventories relates to the adequacy and accuracy of the SEIS information used to determine impact significance.

Provide the status of the WDEQ Air Quality Permit application and discuss any differences between the emission inventory supporting the SEIS analyses and the emission inventory supporting the WDEQ analyses. See also RAI – Gen-3.

### **RAI - AQ-12 Baseline Ambient Criteria**

Section 4.6 of the ER states that air quality near the proposed project has been monitored extensively. However, the ER does not provide any baseline ambient criteria air pollutant concentrations for the proposed site.

Provide appropriate baseline ambient criteria air pollutant concentrations for the proposed Reno Creek ISR Project site.

## RAI - AQ-13 Emission Estimates

The level of quantitative analysis in Section 4.6 of the ER is limited to annual mass emission estimates. EPA expects ISR projects presenting a substantial increase in emission levels compared to Nichols Ranch, Moore Ranch, or Lost Creek ISR projects to contain a more quantitative approach to modeling direct impacts other than just annual mass emission estimates (Svoboda, 2010). The Reno Creek emission estimates for individual pollutants can be up to nearly 21 times greater than those for the other three ISR projects. Additional information is needed to ensure that an appropriate level of analyses is conducted relative to project emission levels. Therefore, a greater level of quantitative analysis is required (e.g., site specific or analogous pollutant concentrations including consideration of short-term time frames) or a reduction in the pollutant levels similar to the values for three other ISR projects.

Provide a more quantitative approach to modeling direct impacts beside annual emission levels or reduce emission levels to values similar to the three previous ISR projects as documented Table 1 (for example).

Table 1. Emission Estimates (Metric Tons\* per year) for Various ISR Projects

Project	Pollutant				
	Carbon Monoxide	Nitrogen Oxides	Particulate Matter PM10	Particulate Matter PM2.5	Sulfur Dioxide
Reno Creek	45.4	205.0	142.4	31.7	20.9
Lost Creek	10	39	156	na	1
Nichols Ranch	18	58	125	na	1.4
Moore	5	20	15	na	1

Sources: Reno Creek from ER, Lost Creek from NRC 2011a, Nichols Ranch from NRC 2011b, and Moore Ranch from NRC 2010.  
\*To convert metric tons to short tons, multiply by 1.1023

### References:

Svoboda, L. "NUREG-1910, Supplement 1, Environmental Impact Statement, Final Report for Moore Ranch ISR Project, Campbell County, Wyoming." CEQ No. 20100337. Letter (September 27) to D. Skeen, U.S. Nuclear Regulatory Commission, Environmental Protection and Performance Assessment Directorate. Denver, Colorado: U.S. Environmental Protection Agency, Region 8. 2010.

## ECOLOGY

### RAI - EC-1

Section 3.5.4.3.4.3 of the ER states that "... (the eastern one-third of the survey area) is also designated by the Wyoming Game and Fish Department (WGFD) as a Crucial Habitat Priority Area for the sagebrush/mixed grassland habitats".

Clarify the number of acres of the proposed project area that has been designated as a Crucial Habitat Priority Area by the WGFD. Additionally, clarify how many acres of the proposed project that are designated as Crucial Habitat Priority Area are planned to be disturbed by project activities.

## **RAI - EC-2 Planned Disturbance Area for Plant Communities**

Tables 1-3 and 4-1 of the ER provide a detailed assessment of disturbance calculations for proposed infrastructure, but does not break down the planned disturbances by plant community type during each project phase.

Provide a breakdown of the acreage of long term and short term disturbances for each plant community for each phase of each alternative including the proposed action.

## **RAI - EC-3 Mitigation Activities for Sage-grouse**

Section 3.5.4.3.4.3 of the ER states that sagebrush habitats within the area could provide adequate nesting and wintering habitat for Greater sage-grouse (*Centrocercus urophasianus*), and the moist drainages in the area could also provide adequate brood-rearing and late summer habitat. Part of the project area is also designated as WGFD Crucial Habitat Priority Area and an Enhancement Habitat Priority Area for the sagebrush/mixed grassland habitat within sage-grouse complexes. Project development and operations may occur within T43N R73W Sections 21, 22, 27, and 28, which are in part located within 2 miles of the occupied Porcupine Creek sage-grouse lek. The State of Wyoming Executive Order E.O. 2011-5 recommends limiting activities outside of core population areas as follows: no more than a 0.25 mile no surface occupancy standard and a 2 mile seasonal (Dec 1 – March 14) buffer should be applied to occupied leks. In addition, ER page 4-51 states potential impacts could include sage-grouse mortality from the backup storage pond or temporary mud pits, limited habitat loss or fragmentation, and increased noise and activity that may deter sage-grouse use of the area. The ER page 4-51 also states that ER Section 6 describes mitigation measures that will be put in place to help minimize potential impacts to sage-grouse. ER Section 6.5.2 states AUC will implement mitigation measures included in regulatory guidelines and requirements designed to prevent or reduce impacts to wildlife “which may include one or more of the following practices”; however, ER Sections 4.5.2.3.2 and 6 do not describe sage-grouse mitigation measures that the applicant commits to employ in order to meet regulatory guidelines and requirements. Further, the ER states AUC does not plan to conduct operational monitoring for sage-grouse at this time (ER page 7-14).

Provide additional information regarding planned mitigation activities to protect sage-grouse during all phases of the project that follow published State of Wyoming guidelines.

## **RAI - EC-4 Observed Plant Species**

ER page 3.5-7 states that 62 plant species were observed within the big sagebrush shrubland plant community, however only 48 plant species are listed as observed in the plant species summary for the big sagebrush shrubland plant community.

Explain the differences between the number of plant species reported in each plant community (ER Section 3.5.4.1.2) and the number of plant species reported as observed in the plant species summary (ER Addendum 3.5B).

### **RAI - EC-5 Mitigation for Above Ground Power Lines**

Section 3.1.6 of the ER states that because electrical power will be readily available for the proposed project facilities and operations, large-scale installation of new electrical transmission lines is not required. However, new power lines and poles will be needed to connect buildings, pumps, etc. to the existing lines. These new above-ground power lines can impact waterfowl and other birds, primarily through their collision with the lines and any ground wires. Additionally, associated power line poles can provide supplemental perches for raptors, which will provide them with a competitive advantage over sage-obligate prey species. Section 6.5.2 states the applicant will implement mitigation measures included in regulatory guidelines and requirements but does not identify which mitigation measures will be employed. Identification of planned mitigation measures should be in place before impacts occur.

Please clarify the mitigation measures AUC proposes to implement to protect wildlife from above-ground power lines and associated poles.

### **RAI - EC-6 Weed mitigation**

Section 4.5.2.1 of the ER states that Section 6.5.1 discusses mitigation measures to lessen impacts on native vegetation and control Wyoming State Listed Noxious Weeds (Canada thistle, field bindweed, and Russian olive); however, Section 6.5.1 does not discuss weed control measures AUC will employ during the project. Similarly, Section 6.1.3.6 does not discuss weed control measures that will be employed during the project. Additional sections in Chapter 6 describe revegetation efforts, but do not describe active weed control measures or techniques approved by Campbell County Weed and Pest Control District.

Provide planned mitigation measures to lessen impacts from weeds throughout the project life.

### **RAI - EC-7 Mitigation Measures for Avian Injury and Death**

Page 4-45 of the ER states "...the lined backup storage pond will be fenced to exclude wildlife and if significant avian wildlife injuries or deaths are noted then an avian deterrent system will be installed for the pond, consistent with other licensed ISR operations." In the technical report of the application (TR) page 7-15 states that if significant avian wildlife deaths are noted then an avian deterrent system will be installed for the pond. However, there is no discussion of mitigation measures to deter injury or death.

- a. Describe mitigation measures that will be employed before wildlife deaths occur. In particular, provide additional information regarding the design features of storage ponds and temporary mud pits created during the drilling activities that would prevent birds from entering the storage ponds and temporary mud pits (such as netting, noise makers, and/or additional deterrents), and design features that would allow small trapped animals (i.e. birds, small mammals, reptiles and amphibians) to escape the pond and temporary mud pits.
- b. Identify the pollutants listed on EPA's water quality criteria for aquatic life table (EPA, 2013) and radiological constituents and estimated maximum concentrations in waste streams that would be collected/stored in any proposed surface impoundments including the backup storage pond and mud pits.

## **RAI - EC-8 Wetlands Delineation**

In ER Addendum 3.5-G, the U.S. Army Corps of Engineers stated, by letter, that once the project plans are developed in such detail to specify locations where aquatic resources would be affected, a delineation can be conducted in the areas where the U.S. Department of the Army authorization is actually required. Section 4.4.1.1 of the ER references Figure 1-5 and Table 4-1 that provide the proposed project surface disturbances of 154.3 acres; however, the location and acreage of potential wetlands disturbed during the life of the proposed project is not provided in the ER.

Calculate and provide the type and sum of wetlands and open water acres that occur within the proposed disturbed areas during the life of the project.

### **References:**

EPA. "National Recommended Water Quality Criteria, Aquatic Life Criteria Table." Washington DC: U.S. Environmental Protection Agency.  
<<http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#R>> (June 27, 2013). June 11, 2013.

## **SURFACE WATER**

### **RAI - SW-1 Water Quality Data**

Section 3.4.1.9 of the ER states that water quality data were available from one USGS stream gage (# 06364700) located on Antelope Creek near Teckla, WY, collected during the period October 3, 1977 through September 7, 2005. The ER also provides mean values and ranges for the following water quality parameters at this gaging station: temperature, dissolved oxygen, total nitrogen, ammonia as nitrogen, and nitrite plus nitrate as nitrogen, as well as the mean values for phosphate and selenium. A tabulated summary of monthly or seasonal average values of these water quality parameters provides clarity and is required to accurately describe water quality in the affected environment as basis for impact evaluation.

Please provide a tabulated summary of historical water quality data for USGS stream gage # 06364700 located on Antelope Creek near Teckla, WY.

### **RAI - SW-2 Surface Water Uses**

Section 3.4.1.6. of the ER refers to Table 2.7A-11 in the TR Addendum 2.7-A for a listing of all surface water uses obtained from the Wyoming State Engineers Office (SEO) Water Rights Database. This table does not include the amount of water use allowed under the permit. Please provide the quantity of surface water uses or expand Table 2.7A-11 in TR Addendum 2.7-A to include water rights quantities for the listed permits.

Provide bulk estimates of surface water uses in and around the project area. This information is needed for the NRC to evaluate consumptive use impacts of the proposed project.

### **RAI - SW-3 Monthly Average Flows**

Section 3.4.1.2 narrates the summary statistics of streamflow data obtained from the USGS National Water Information System website as reference but does not provide a tabulated summary of the monthly average values of these flow data. This information is needed to describe surface water resources in the affected environment as basis for impact evaluation.

Please provide summary tables showing monthly average flows observed at USGS stream gage sites within the two-mile buffer of the proposed Project.

### **RAI - SW-4 Wetlands**

Wetlands associated with the proposed project site are described under Ecological Resources in Section 3.5 of the ER, but not in the Surface Water section (Section 3.4). A discussion in the Surface Water section on the relevance, or otherwise, of wetlands to the evaluation of surface water impacts is missing. This information is needed to accurately characterize wetlands in the description of the affected environment for the proposed project.

Please clarify the relevance of wetlands in the surface water impacts evaluation.

## **GROUNDWATER**

### **RAI - GW -1 Baseline Groundwater quality information**

Section 3.4.2.10.2 of the ER indicates that 21 baseline groundwater monitoring wells were installed in the Production Zone Aquifer. Figure 2.7B-6 of TR Addendum 2.7-B shows the locations of monitoring wells used to characterize baseline groundwater quality. Table 2.7B-31 in TR Addendum 2.7-B lists groundwater quality data for only 10 of the 21 monitoring wells used to characterize baseline groundwater quality.

Provide baseline groundwater quality data for all monitoring wells installed to characterize baseline groundwater quality in the Production Zone Aquifer or an explanation of why these data are not provided.

### **RAI - GW-2 EPA-Designated Sole-Source Aquifers**

NUREG 1748 (Section 6.3.4) requires the ER include a qualitative description of groundwater aquifers, including identification of EPA-designated sole-source aquifers. If there are no sole-source aquifers near the site, then the information should be explicitly stated.

Provide information regarding the identification of EPA-designated sole-source aquifers in the vicinity of the proposed ISR site.

### **RAI - GW-3 Groundwater Model**

Section 4.4.2.3.3, page 4-38 of the ER, cites the groundwater model as the basis for the conclusions that the potential impact from consumptive use of groundwater during operations is expected to be small. It also asserts that the potential impacts on groundwater due to consumptive use outside of the proposed project area are expected to be negligible. The groundwater model is cited as the basis for these conclusions. The groundwater flow model

results indicate that an average production bleed rate of one percent will be sufficient to maintain an inward gradient in both the fully and partially saturated portions of the PZA during uranium recovery operations. The groundwater model also demonstrates that the amount of consumptive use during all phases will generate negligible drawdown outside of wellfield areas. The ER notes that there is minimal use of groundwater in the recovery zone sands near or adjacent to the wellfield areas. Hence, the conclusion in the ER is that there is no potential impact to (i) other users of groundwater in the area, and (ii) water users outside of the proposed project boundary.

In Section 7.2.1.2 of the ER, the groundwater model was used to determine: (i) the distance between perimeter ring monitoring wells, and (ii) the distance between production patterns and perimeter ring monitoring wells for the production units located within the fully saturated and partially saturated portion of the PZA. In addition, in Section 7.2.2.2 of the ER, the applicant relied on the groundwater model to demonstrate that an excursion can be recovered under hydrologic conditions present at the proposed project. The numerical model was used to simulate the occurrence and recovery of an excursion using pumping rates that could be achieved and maintained at the site.

A re-evaluation of these conclusions should be submitted if there are any changes made to the groundwater model in response to safety RAIs related to the groundwater model. Additionally, provide a discussion of the impacts of the safety-RAIs related to groundwater model (Addendum 2.7C) on the (i) potential impacts during operation, (ii) monitoring well locations, and (iii) potential excursion verification and corrective actions.

#### **RAI - GW-4 Mitigation to Adjacent Wells**

Section 4.4.2.3.3 of the ER states that if significant impacts to either the adjacent domestic wells or to stock wells in the vicinity of the proposed project are observed, the following mitigation measures will be *considered*: (i) lowering the pump level in the wells, if possible; (ii) deepening the wells, if possible; or (iii) replacing the wells with new wells completed in sands that are not impacted by ISR operations.

Clarify commitment to mitigate any significant impacts to adjacent wells in the vicinity during operations.

#### **RAI - GW-5 Best Management Practices**

Section 4.4.2.2 of the ER presents several measures to minimize impact of construction operations on the overlying and production zone aquifer. The Generic Environmental Impact Statement for In Situ Leach Uranium Milling Facilities [NUREG-1910 (GEIS)] notes that potential impacts to groundwater during construction of an ISR facility are from the consumptive use of groundwater, injection of drilling fluids and mud during well drilling, and spills of fuels and lubricants from construction equipment. Surface activities that can introduce contaminants into soils are more likely to affect near-surface and shallow aquifers during construction. NRC staff concluded in the GEIS that during construction, groundwater use is limited and groundwater quality is protected by implementing best management practices (BMPs), which include spill prevention and cleanup programs. The application discusses various spill prevention measures to mitigate impacts to surface water resources (ER Section 6.4.1.3). However, the application does not present any information related to implementing best management practices (BMPs

that focus on protecting groundwater resources (i.e., near-surface and shallow aquifers) during construction.

Identify BMPs, if any, will be implemented during construction to limit groundwater use and protect groundwater quality.

#### **RAI – GW-6**

Results of site-specific baseline groundwater quality sampling for chemical parameters and constituents measured to characterize baseline groundwater quality are presented in Tables 2.7B-22 through 2.7B-40 in TR Addendum 2.7-B. Table 2.7B-22 lists the chemical parameters and constituents measured in groundwater quality samples. Chemical parameters include pH, total dissolved solids, and conductivity. Constituents include major and minor cations and anions, metals, and radionuclides. The tables in TR Addendum 2.7-B also report parameters and constituents in groundwater quality samples that exceed WDEQ class of use standards and EPA primary and secondary maximum contaminant level (MCLs). However, Section 3.4.2.10.2 of the ER (Proposed Reno Creek Project Groundwater Quality) only discusses and evaluates the concentration of major cations and anions in groundwater quality samples. No discussion and evaluation is provided for metals, radionuclides, and general parameters such as pH, total dissolved solids, and conductivity. In addition, with respect of all chemical parameters and constituents, no discussion and evaluation is provided for exceedences in WDEQ class of use standards and EPA primary and secondary MCLs.

Provide additional site-specific baseline groundwater quality information.

- A. Provide a discussion and analysis of the concentration of metals (e.g., uranium, selenium, vanadium, molybdenum, arsenic, etc.) and radionuclides (e.g., Ra-226) in baseline groundwater quality samples.
- B. Provide a discussion and analysis of the range of chemical parameters (e.g., pH, total dissolved solids, conductivity) in baseline groundwater quality samples.
- C. Provide a discussion and analysis of exceedences in WDEQ class of use standards and EPA primary and secondary MCLs in baseline groundwater quality samples with respect of all chemical parameters and constituents.

#### **PUBLIC AND OCCUPATIONAL HEALTH**

##### **RAI - POH-1 Clarify Applicable Requirements for Decommissioning**

Section 1.3 of the ER refers to satisfying 10 CFR Part 20, Subpart E requirements in the context of decommissioning and unrestricted release of the site. Based on the scope described in 10 CFR 20.1401(a), Subpart E requirements do not apply to in-situ uranium recovery facilities. Unrestricted release of the site should be based on compliance with 10 CFR Part 40, Appendix A, Criterion 6 (as noted on ER page 6-20) which establishes the release criterion for radium. An acceptable method for deriving unrestricted release criteria for other radionuclides based on the site-specific dose applicable to Criterion 6 is described as the benchmark dose approach detailed in NUREG-1569.

Describe any revisions to the ER that may be required to ensure correct and consistent citations to the applicable decommissioning regulations.

## **RAI - POH-2 Well Equipment Removal at Decommissioning**

Section 6.1.9 of the TR (Well Plugging and Abandonment) states the following:  
*Wellfield plugging and surface reclamation.....The following procedure will be used to plug the wells: 1) All pumps and piping will be removed from wells, when practicable;*

The application should clarify under what circumstances it would be impracticable to remove pumps and piping from wells. The application should also describe whether leaving equipment in place would affect the integrity of well plugging. This information is needed to completely describe the applicant's proposal regarding what equipment is expected to be removed or remain in place after decommissioning. This information would inform the impact analyses for public and occupational health regarding potential sources of contamination or migration of contaminants, groundwater resources regarding integrity of well plugging, and waste management regarding the proposed management practices and the potential volumes of waste requiring offsite disposal.

Provide clarification regarding the removal of well equipment under the classification of "when practicable" during decommissioning.

## **RAI POH-3 Maximum Radon Emission**

Addendum 7A of the TR, contains radon emission estimates for each radon generating activity but does not provide a maximum annual radon emission based on the combination of radon-emitting activities that would be occurring concurrently during any year of the proposed sixteen year facility lifecycle. A combined release estimate is needed for evaluation of potential impacts because the annual public dose impact would be an accumulation of dose from all radon releases that occur in that year. Identifying the year of highest radon emissions is informative and allows for efficient documentation and analysis (only that year's release and dose needs to be described because all other years would be lower than the maximum). This information is needed to describe the bounding annual radon release and dose from the proposed action that will be evaluated in the impact analysis of public health.

Based on the analysis in TR Addendum 7A, provide the year of highest total radon emission based on the analysis in Addendum 7A of the TR and the basis for the estimate. Also provide or otherwise reference the location of the calculated public dose that corresponds to the year of highest radon release.

## **RAI - POH-4 Missing Technical Report Figure**

Section 3.2.1.4 (Yellowcake Drying and Packaging System) of the TR references Figure 3-10; however, this figure could not be located in the TR.

Provide missing Figure 3-10. Additionally, provide a complete description of the proposed yellowcake dryer so that the potential impacts from yellowcake drying, including worker safety and radiological air emissions, can be evaluated.

## **TRANSPORTATION**

### **RAI - TR-1 Clarify Local and Regional Traffic Count Data**

Table 3.2-2 of the ER provides traffic count data from the Wyoming Department of Transportation. The first two entries are labeled “Hwys 50 and 387” and “Hwys 59 and 387.” By listing two roads, the labels are not clear which road the traffic count was taken. The traffic count information for roads in the vicinity of the site is used to evaluate potential impacts to traffic in the transportation impact analysis.

Provide clarification of data in Table 3.2-2.

### **RAI - TR-2 Basis for Traffic Estimates**

The ER (Page 4-13, first paragraph) projects daily vehicle traffic during construction and operations phases at 75 vehicles but provides no basis or reference for the estimates. The number provided in the application appears inconsistent with the number of construction workers described in ER Sections 4.10.1.1 of 146 direct construction phase jobs and Section 4.10.1.2 of up to 44 operational staff. Similarly, traffic estimates are provided for the decommissioning phase with no bases.

Provide the basis for traffic estimates for each phase of the proposed facility lifecycle so the license application is complete.

### **RAI - TR-3 Methods Used to Evaluate Traffic Impacts**

#### **Clarify the Description of the Methods Used to Evaluate Traffic Impacts**

The methods and data used for the traffic analysis on page 4-12 of the ER are not clearly described. For example, the analysis refers to ER Table 3.2-5 as projected traffic during all project phases but does not include traffic from the proposed action (comparable numbers match those provided in ER Table 3.2-2, Local and Regional Traffic Counts). The traffic analysis on ER page 4-12 also provides estimates of other projected traffic volumes in year 2015, however, the analysis does not provide clear description of how these estimates were derived.

Provide details of the traffic analysis so staff can understand basis of the estimates including methodology, data sources, and bases for any assumptions made. This information is needed to evaluate traffic impacts for each phase of the proposed action.

### **RAI - TR-4 Traffic Mitigations**

Section 6.2.2 of the ER lists traffic mitigations as potential mitigations, but does not specify if AUC proposes to commit to these mitigation measures to reduce potential traffic impacts. Additional information is needed because NRC staff can only rely on mitigation measures if they are requirements imposed by regulatory agencies or commitments from the applicant.

Clarify if any of the described mitigations are commitments or options.

## **WASTE MANAGEMENT**

### **RAI - WM-1 Capacity for Disposition of Non-Hazardous Solid Waste**

The ER does not describe the available disposal capacity for non-hazardous solid waste generated by the proposed action, in particular, during the decommissioning phase. This information is needed to describe the affected environment and evaluate potential impacts to waste management resources.

Provide the available capacity for disposition of non-hazardous solid waste.

### **RAI - WM-2 Description of Wastewater Constituents**

Table 4-3 of the TR provides a summary of anticipated liquid byproduct material water quality that lists minimum and maximum concentrations of 11 chemical parameters of the waste stream. Some constituents that are commonly present in ISR wastewater that could be harmful to humans or wildlife if exposures were to occur are not included in the table including arsenic, barium, cadmium, chromium, lead, magnesium, molybdenum, nickel, selenium, and Th-230.

Provide concentration estimates for these additional constituents in the liquid byproduct material wastewater stream for the proposed project. (This information is needed to evaluate the level of potential hazard to humans and wildlife from wastewater solutions under both normal and accidental release scenarios.)

### **Addition Non-RAI Information Needs – Figures for Staff’s Use**

The following requests are not required to complete staff’s analysis of the review but would aid in development of the environmental documents. Please provide the figures in digital form for the staff’s use in developing the Reno Creek ISR SEIS. It is requested that the revised figures do not contain figure numbers and that figures are provide in a non-flattened format or in black and white (b/w) when indicated in the list of needs.

#### AIR QUALITY:

- Figure 3.6-1: NWS and Coal Mine Meteorological Stations (ER page 3.6-35)
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
  - Enlarge to full portrait page
- Figure 3.6-13: Casper Airport 8-Year Wind Rose (ER page 3.6-47)
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
  - Add gradient for wind rose
- Figure 3.6-14: Antelope Mine 25-Year Wind Rose (ER page 3.6-48)
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
  - Add gradient for wind rose

- Figure 3.6-15: Glenrock Mine 14-Year Wind Rose (ER page 3.6-49)
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
  - Add gradient for wind rose
- Figure 3.6-24: Reno Creek Project Wind Rose (ER page 3.6-58)
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
  - Add gradient for wind rose
- Figure 3.6-25: Proposed Project Wind Rose: 1st Quarter (ER page 3.6-59)
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
  - Add gradient for wind rose
- Figure 3.6-26: Proposed Project Wind Rose: 2nd Quarter (ER page 3.6-60)
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
  - Add gradient for wind rose
- Figure 3.6-27: Proposed Project Wind Rose: 3rd Quarter (ER page 3.6-61)
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
  - Add gradient for wind rose
- Figure 3.6-28: Proposed Project Wind Rose: 4th Quarter (ER page 3.6-62)
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
  - Add gradient for wind rose
- Figure 3.6-33: Antelope Mine Short and Long-Term Wind Roses (ER page 3.6-67)
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
  - Add gradient for wind rose
  - Rotate to Landscape and enlarge.
- Figure 3.6-45: Proposed Project Meteorological Monitoring Map (ER page 3.6-79)
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
- Figure 5-1: Energy Developments (ER page 5-30)
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.

PUBLIC AND OCCUPATIONAL HEALTH:

- TR Fig 1-3, Project Schedule (of general interest but will cite it in my section):
- Vacuum Dryer : TR Fig 3-10
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.

- TR Fig 2.9-1, Rad Site Characterization Sampling Locations:
  - (note: this is large figure with a significant amount of info, if possible, modified to fit on 8.5x11 page and b/w)
- ER Fig 3.1-3, Residences within 2 miles:
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.

TRANSPORTATION:

- ER Fig 3.2-1, Automated Traffic Count Sampling Locations:
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability

WASTE MANAGEMENT:

- TR Fig 2.1-3, Conceptual Site Plan:
  - This is large figure with a significant amount of information. It would be useful if it could be collapsed for 8.5x11 page, converted to b/w, with emphasis on waste management related information such as locations of production units, central processing plant, deep disposal wells, deep disposal well pipelines, roads

LAND USE:

- ER Figure 3.1-1. Change to b/w. Increase size of labels, legend text and symbols, and scale for readability.
- ER Figures 1-3 and 1-4. Change to b/w. Increase size of labels, legend text and symbols, and scale for readability.
- ER Figure 3.1.2. Change to b/w. Increase size of labels, legend text and symbols, and scale for readability.
- ER Figure 3.1-5. Change to b/w. Increase size of labels, legend text and symbols, and scale for readability.

GEOLOGY:

- TR Figure 2.6A-1. Change to b/w. Increase size of labels, legend text and symbols, and scale for readability.
- TR Figure 2.6A-3. Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
- TR Figure 2.6A-9. Change to b/w. Increase size of labels and figure text for readability.
- TR Figure 2.6-14. Change to b/w. Increase size of labels and figure text for readability.

## NOISE:

- ER Figure 3.7-1. Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
- ER Figure 3.1-4. Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
- ER Figure 3.1-6. Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
- ER Figure 1-5. Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.

## GROUNDWATER:

- Gray-scale figure to represent general conceptualizations of the site hydrostratigraphy for the: (i) fully saturated PZA region, and (ii) partially saturated PZA region based on Figures 2.7B-16 through 2.7B-19. Information from Figures 2.6A-11 through 2.6A-33 could also be used.
  - a. Staff understands that developing a “general conceptualization” may be difficult given the spatial variability. If that is the case, then just modifying Figures 2.7B-16 through 2.7B-19 with the following aspects is also acceptable.
    - i. Delete the borehole logs.
    - ii. Show the most recent Potentiometric Surface (i.e., water table location) to scale.
- TR Addendum 2.6A-8, Figure 2.6A-3 Generalized Stratigraphic Column for the Powder River Basin
  - Change to b/w
  - Need to modify the figure to clearly identify the host rock formation

## SURFACE WATER:

- TR Figure Addendum 2.7A-39, Drainages
  - Reduce size to 8.5” x 11”
  - Increase contrasts for contours
  - Increase size of labels, legend text and symbols, and figure text for readability
- TR Figure Addendum 2.7A-40, Gaging Station Locations
  - Reduce size to 8.5” x 11”
  - Increase contrasts for contours
  - Increase size of labels, legend text and symbols, and figure text for readability
- TR Figure Addendum 2.7A-40, Figure 2.7A-8, Baseline Radiological Sampling Locations
  - Reduce size to 8.5” x 11”
  - Increase contrasts for contours
  - Increase size of labels, legend text and symbols, and figure text for readability

## ECOLOGY:

Vegetation (Provide two figures minimum but can split into more figures if too much info makes it unreadable)

- Black/white figure from map in ER Addendum 3.5-E that fits on one 8.5"x11" page, including legend, north arrow and scale. This figure will show the baseline vegetation communities mapped at the proposed Reno Creek project area. Do not need to include all of ½ mile buffer, but identify it on parts that are included in the figure. Include tree stand and noxious weed locations. Do not include sample locations or habitat survey points.
- Using this veg map as a base, create a new figure showing the proposed facilities (well fields, ponds, well, pipelines, roads, structures, etc.) and facilities for the proposed alternatives (backup storage pond, etc.) (see Dewey Burdock Figs. 4.6-1 and 4.6-3 as an example).

Biological Resources (Provide two figures minimum but can split into more figures if too much info makes it unreadable)

- Black/white figure that fits on one 8.5"x11" page, including legend, north arrow and scale showing site boundary. Show the proposed Reno Creek project area and 1-mile wildlife survey buffer (could use ER Figure 3.5-1 as a base). Add WGFD Crucial Habitat Priority Area and an Enhancement Habitat Priority Area for the sagebrush/mixed grassland habitat within Greater sage-grouse complexes (Find these shapefiles. Do not know if they are at <http://gf.state.wy.us/web2011/wildlife-1000819.aspx> different from the pronghorn habitat range). Add sage grouse lek locations (160 Acre, Porcupine Creek, and Spring Creek) that are known within 4 miles. Add the 13 raptor nest locations from ER Figure 3.5-1 and identify by species. [there may be updated lek and raptor information provided by WGFD, BLM, etc. that will need to be added to this figure]
- Using this map as a base, create a new figure only keeping the sage grouse lek locations and raptor nests. Place a 2-mile radius ring around the active leks, and add all planned and alternative facilities. The map area can be zoomed in to include just the boundaries of the 2-mile rings. (See Dewey figure 4.6-4 as an example) [there may be updated sage grouse lek and raptor spatial/timing information provided by WGFD, BLM, etc. that will need to be added to this figure]

Wetlands (1 figure)

- Black/white figure that fits on one 8.5"x11" page, showing jurisdictional wetlands and waters of the US and proposed facilities (See Dewey Figure 4.5-1 as an example) [from what I understand, the applicant has not conducted a survey to receive ACE jurisdictional determination yet. This is typically included in an EIS.]

## CULTURAL RESOURCES:

- GIS file with coordinates and elevation of the site and surrounding areas. If a GIS file is not available, provide a spreadsheet with x, y, z coordinates describing the site topography. Provide details such as a coordinate system and type of elevation.

## GENERAL:

- Proposed Reno Creek Project General Location Map:
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
- Proposed Project Map
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
- Site Surface Ownership
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
- Site Mineral Ownership
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
- Conceptual Site Plan (wellfield map)
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
  - There is too much in this figure. Please separate out the layers of this image and make into separate figures
    - 1-showing only the wellfield locations with simplified CPP, trunk lines and power lines
    - 1-showing wellfield locations and monitoring wells
- Proposed Project Schedule
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
- Facility Layout
  - Remove contours
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.
- CPP Building Layout
  - Change to b/w. Increase size of labels, legend text and symbols, and figure text for readability.