AUC INSERTIONS TO REFLECT
NRC TALKING POINTS
OPEN/CONFIRMATORY ISSUES

AUC insertions are all in red text. Text in normal print is explanatory in nature. *Text in italics represent AUC's proposed language for revising the TR.*

1. Hydrogeology Open Issues

1(a) Draft SER Section 2.3.3.4 TR Section 2.6.3; RAI Response N/A
Plugging Abandoned Drill Holes

AUC states that approximately 2665 drill holes and plugged wells had been installed by others and 100 cased wells have been plugged. AUC has drilled an additional 807 drill holes of which 45 drill holes were completed as cased wells and the remainder were plugged and abandoned. AUC further states that 12 drill holes have been found in the southwestern portion of project area at which AUC opened the drill holes to its total depth, performed geophysical logging and abandoned the drill hole.

In the future, AUC proposes to (1) open drill holes to its total depth, performed geophysical logging on abandoned drill holes that may yield information beneficial to AUC; (2) plug old drill holes in proximity of future production units if the hydrogeologic testing indicates leakage through the old drill holes "might" be a problem; (3) not plug drill holes because the 1982 Hydrogeologic Integrity Evaluation Report documents a "strong" indication that re-plugging of old drill holes "may not" be necessary; and (4) plug any old "open" hole that may be encountered while working anywhere in the Project Area.

The above commitments are insufficient for staff's reasonable assurance finding that the applicant can confine the possession and use of source and byproduct material to the locations and purposes authorized (10 CFR 40.41(c)). Consistent with previous ISR licenses, staff will be issuing a license condition which requires abandonment and plugging of all wells within a wellfield prior to hydrogeologic testing for the wellfield hydrogeologic data package.

AUC Talking Point:

AUC agrees to the staff-proposed license condition, subject to finalizing the actual wording of the condition. AUC has reviewed such a condition in the Strata License (Condition 10.12) and finds it acceptable.

1(b) Draft SER Section 2.4.3.4 TR Section 2.7.2.3; RAI Response N/A
Potentiometric Surface for OM Aquifer

AUC states that a potentiometric surface contour map for the OM aquifer could not be constructed due to the discontinuous nature of this aquifer across the project area.

Staff will include a requirement for constructing an OM potentiometric surface contour map in the license condition to provide a wellfield hydrogeologic data package consistent with guidance in the Standard Review Plan.

AUC Talking Point:

AUC agrees with the staff suggested requirement.

1(c) Draft SER Section 2.4.3.4 TR Section 2.7.2.3; RAI Response 19(d)
SM Unit is Uppermost Aquifer

AUC states that the SM unit is perched, non-contiguous and low yielding and thus is not an aquifer. If the SM unit is not an aquifer it cannot be the uppermost aquifer.

Staff does not find the arguments in the application and responses to staff's RAIs that the SM unit is not an aquifer. Two nearby livestock water supply wells are screened at depths consistent with the depth for the SM unit (Summary of Wells Sampled for Pre-Operational Environmental Program (revised December 2014) on page 2-65). AUC needs to commit to modifying the TR to remove references that the SM unit is not an aquifer.

AUC Talking Point:

AUC agrees that stock wells GW1 and GW 11 may be reasonably interpreted to occur in the surficial hydro-stratigraphic zone, lying above the Overlying hydro-stratigraphic zone. All other stock wells in the Permit Area are most reasonably to be interpreted to occur in the Overlying hydro-stratigraphic zone. AUC specifically tested the surficial hydro-stratigraphic zone with 7 wells. This gives us 9 wells that clearly tested the hydrologic capacity of the actual or potential surficial hydro-stratigraphic zone that neither GW1 nor GW11 has construction details, logs, or aquifer tests. They just show the TD and existence of water. Stock wells are used seasonally, but only for a few weeks during the summer when cattle are brought to a particular pasture.

The following table summarizes the characteristics of the wells:

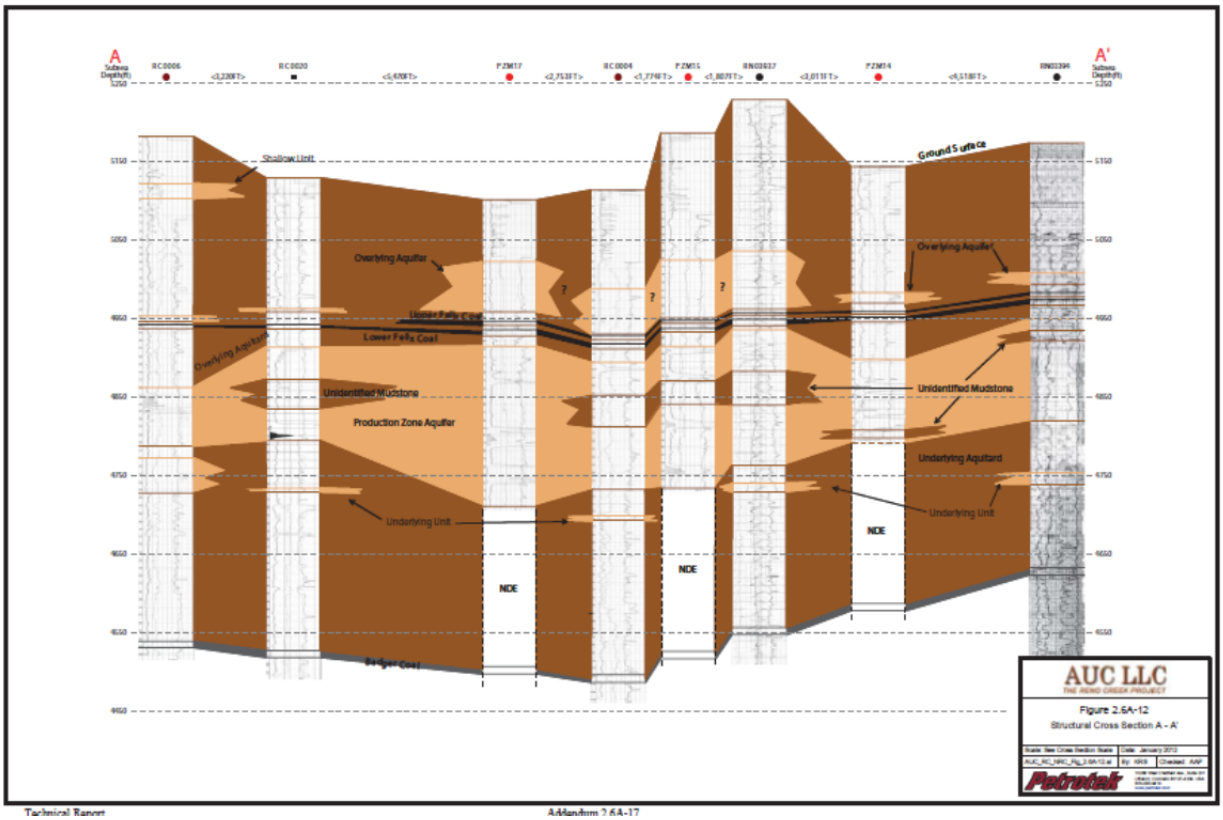
Well	Dry/Wet	Aquifer Character	Location
SM1	Dry	Dry	Hill
SM2	Dry	Dry	Hill
SM3	Wet	No	Hill
SM4	Dry	Dry	Hill
SM5	Wet	No	Upper drainage
SM6	Wet	No	Hill
SM7	Wet	No	Upper drainage
GW1	Wet	Yes	Lower drainage
GW11	Wet	Yes	Lower-Mid drainage

Note the map, Fig 2.7A-8 and cross sections Fig 2.6A-12 and Fig 2.7B-18 below.

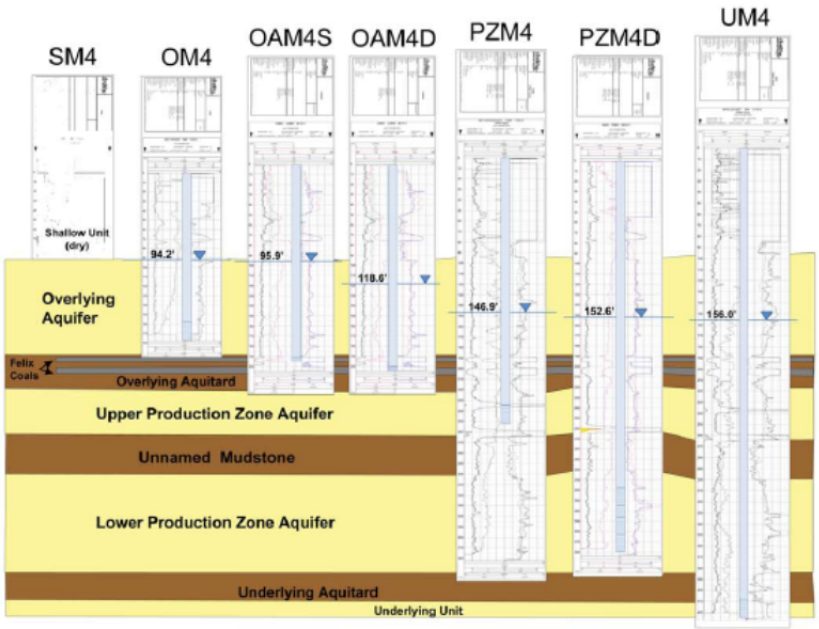
The data do not support the notion that the SM hydro-stratigraphic zone is a regional aquifer. The SM may be reasonably characterized as locally exhibiting some aquifer characteristics with a limited areal extent.

AUC agrees to revise the TR to remove references that the SM is not an aquifer and to describe it with the above characterization.

PROPOSED RENO CREEK PROJECT
CAMPBELL COUNTY, WYOMING
Figure 2.7A-8
Baseline Radiological Sampling Locations
Prepared for:
AUC LLC
Prepared by:
TRICT, Inc.
Legend



Technical Report Addendum 2.6A-17



Technical Report Addendum 2.7B-96

1(d) Draft SER Section 2.5.3.2 TR Section 5.2.6; RAI Response 19(d)
Pre-operational Sampling of Nearby Wells within 2 km

In response to RAI 19, AUC clarified several tables and reported two new wells and one longstanding well that was excluded from the pre-operational monitoring program. Based on guidance in Regulatory Guide 4.14 and NUREG-1569, AUC committed to sampling these wells prior to operations in RAI Response 19(d).

Criterion 7 of 10 CFR Part 40 Appendix A requires conducting the pre-operational monitoring program prior to any major site construction. Staff will include a pre-operational license condition that requires AUC to sample all wells within 2 kilometers of the project area and providing NRC with a report that lists all known wells (functional and non-functional) and their intended use, if known, within 2 kilometers of the project area.

AUC Talking Point:

AUC agrees to the staff suggested license condition.

1(e) Draft SER Section 2.5.3.2 TR Section 5.2.6; RAI Response N/A
Annual Survey to Document Wells within 2 km

Based on guidance in Section 5.2 of NUREG-1569, AUC committed to providing a land-use survey in its annual report to NRC. As part of the land-use survey, NRC staff will incorporate a license condition that AUC perform an annual survey of water supply wells within 2 kilometers of the project boundary.

AUC Talking Point:

AUC agrees to the staff suggested license condition.

1(f) Draft SER Section 2.5.3.2 TR Section 2.7.2.10.2; RAI Response 16
Resample Well PZM2 for First Two Sampling Events

In Table 2.7B-31 of TR Addendum 2.7-B, AUC presents the laboratory data for 10 PZM wells sampled quarterly for the pre-operational characterization and, in Table 2.7B-31a of the RAI 16 response, AUC presents the laboratory data for 8 non-baseline PZM wells which were sample one time only (one well was sampled twice and one well was sampled for only uranium and the field parameters). AUC did not discuss the water quality sampling results except for summary tables of exceedances to State or Federal standards or summary figures consisting of Piper or Stiff Diagrams.

Based upon staff's review, results for several parameters for the first two sampling events for well PZM2 are distinct from the results for the latter two sampling events. Compared to the last

two sampling events, the first two events yielded higher pH levels and lower uranium and other radionuclides. The field data sheets for the first sampling event notes that the high pH was attributed to the recent well development. Staff also notes that the first two sampling events were conducted using non-dedicated equipment whereas the latter two sampling events were conducted using dedicated sampling equipment. Use of non-dedicated equipment required installation immediately prior to sampling/purging and use of low-flow sampling was insufficient.

Therefore, staff finds that the first two sampling events are not representative of the aquifer and require a license condition for AUC to resample this well for two sampling events to complete the pre-operational characterization data because the Standard Review Plan requires four quarterly sampling events to document seasonality.

AUC Talking Point:

1. AUC agrees to pre-operational resampling for PZM2 prior to the development of a wellfield package.

1(g) Draft SER Section 2.5.3.2 TR Section 2.9.8.1; RAI Response 22
Prohibit Low-flow Sampling Methodology for Groundwater Protection Programs

AUC utilized a modified low-flow groundwater sampling methodology to sample wells for the site characterization. In its response to RAIs, AUC justified the use of low-flow sampling methodology by citing the benefits of a low-stress to the aquifer, well construction that permits placement of the pumps in the well screen, a study that showed the pump placement within the well screen does not significantly affect the water quality, and specifying procedures (e.g., minimum purge volume based on sampling equipment volumes) used in its low-flow sampling methodology. AUC then states in TR Section 5.7.8 that low-flow purging methodology may be used for the subsequent groundwater protection monitoring programs (i.e., wellfield baseline and excursion monitoring programs).

Staff finds that, while the sampling method may be sufficient to obtain site characterization data, this methodology is not appropriate for the groundwater protection monitoring programs. Staff requests that the applicant modify the application to specifically state that low-flow sampling will not be conducted as part of the groundwater protection programs and/or that staff will impose a license condition because staff has to have reasonable assurance that the proposed monitoring program is sufficient to detect a release and provides accurate baseline data. Staff will not verify that a wellfield hydrogeologic data package if the baseline data were collected using the low-flow sampling methodology, nor verify standard operating procedures for sampling under the groundwater detection monitoring programs that utilize the low-flow sampling methodology or accept excursion monitoring program data using low-flow sampling methodology.

AUC Talking Point:

AUC is not aware of the technical issues that NRC staff is using to draw the conclusions regarding low-flow sampling. However, AUC is willing to accept the staff suggested condition to have AUC modify the application to specifically state *that low-flow sampling will not be conducted as part of the groundwater protection program during operations of the Reno Creek Project.*

1(h) Draft SER Section 3.1.3.2 TR Section 3.1.3.1; RAI Admin-18
Limit Use of Method 4 Well Construction

AUC proposed four methods for well construction/completion. The first three (3) methods are those typically used by the industry (i.e., screen interval under-reamed after cementation with telescoping screen) whereas the fourth method is unique as far as methods proposed by an ISR applicant (i.e., screen and casing installed with the annulus space filled with sand, grout and cement. AUC utilized well construction Method 4 for installation of the first approximately 27 wells used for the pre-license site characterization and states that the well construction Method 4 may be used for the monitoring wells in the groundwater detection monitoring programs. In response to RAI ADMIN-18, AUC anticipates using 2-inch diameter wells (completed using Method 4) for the piezometer/leak detection wells related to the storage pond.

Staff finds that well construction Method 4 is used widely in the shallow, small diameter wells for numerous environmental studies and is consistent with approved standards (see ASTM D5092-04). Therefore, staff agrees that this Method may be appropriate for shallow wells including those for the pond detection systems. However, staff finds that the applicant's description of well construction Method 4 is too generalized to be acceptable for wells in the groundwater detection monitoring program. For example, the applicant's placement of material in the annulus by free fall is not consistent with WDEQ's rule that specifies placement of material by tremie pipe. Furthermore, the applicant's specifications provide a "minimum" thickness of the sand filter pack but do not provide a maximum thickness. The lack of a maximum thickness may result in the sand filter pack for a well providing a conduit for fluid migration and/or difficulties for well abandonment if the sand filter were significantly longer than the PVC screen length. Well construction Method 4 also presents a problem with well abandonment. The applicant's proposed abandonment procedures of filling the well casing with cement would not eliminate Method 4 sand filter pack as a potential conduit for fluid migration.

Therefore, staff will require the applicant's commitment to not use well construction Method 4 for monitoring wells that could be affected directly by the ISR operations and a license condition that the existing UM, PZM and OM wells constructed using Method 4 are abandoned by removing the sand filter pack prior to plugging the well.

AUC Talking Point:

AUC agrees with the staff conclusion that *AUC will install wells constructed by Method 4 appropriately for shallow, small diameter wells for numerous environmental studies, which are consistent with approved standards (ASTM D5092-04), including pond leak detection systems, determination of shallow*

effects of surface spills and leaks, including MIT tests, and similar applications. AUC will not employ Method 4 for monitoring wells that could be affected directly by the ISR operations.

AUC therefore agrees to the license condition proposed by the staff.

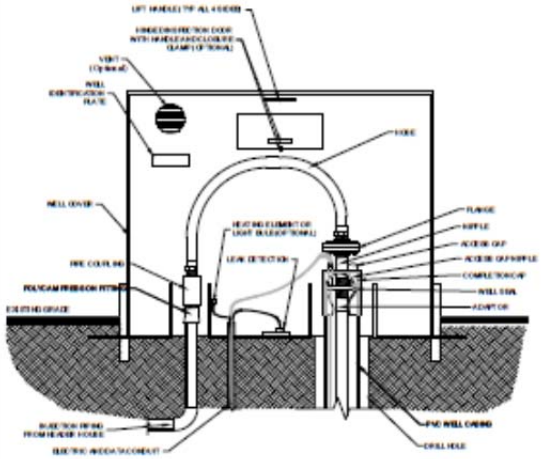
1(i) Draft SER Section 3.1.3.2 TR Section 7.2.5.2; RAI Response NA
Wellhead Protection Features

The applicant states that leak detection sensors will be included in the well head sumps but does not include a description of the wellhead completions. The details should discuss protection of the wellhead from accidental damage, freezing from cold temperatures and spills or leaks consistent with guidance in the Standard Review Plan. The wellhead enclosure will have the ability to contain small leaks and incorporate a leak detection system to notify the applicant of a leak before it is released to the environment.

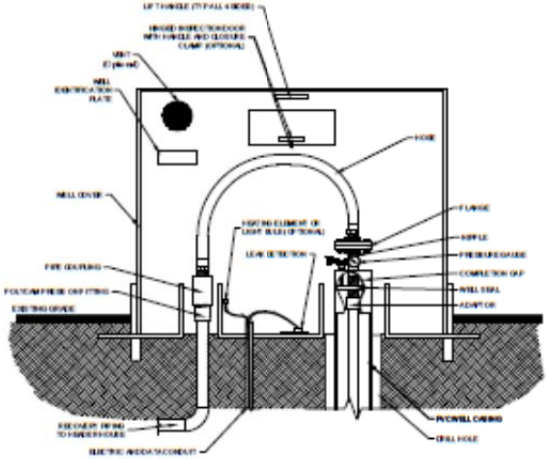
Therefore, staff will require a commitment from the applicant to modify the application to include a diagram which depicts the wellhead completion details.

AUC Talking Point:

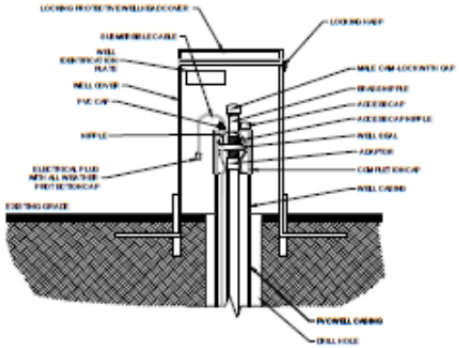
AUC will revise the TR to include the included diagram which depicts the wellhead completion details.



TYPICAL
RECOVERY WELLHEAD



TYPICAL
INJECTION WELLHEAD



TYPICAL
MONITORING WELLHEAD

AUC LLC
LAKEWOOD, COLORADO

NOT FOR CONSTRUCTION REVIEW SET ONLY

TREC, Inc.

TYPICAL WELLHEAD DETAILS
RENO CREEK ISR PROJECT

FIGURE

1(j) Draft SER Section 2.5.3.2 TR Section 2.9.8.1; RAI Response 22
Commit to Fully or Partially Penetrating Wells for Perimeter Wells

AUC does not commit to having fully or partially penetrating screens for monitoring wells in the perimeter monitoring ring. Such a commitment is a criterion in the Standard Review Plan.

AUC will have to commit to either fully or partially penetrating screens for monitoring wells and provide justification in the application.

AUC Talking Point:

AUC will revise the TR to specify that it commits to the use of partially penetrating screens for monitoring wells, and to provide therein a justification for the decision.

1(k) Draft SER Section 2.5.3.2 TR Section 2.9.8.1; RAI Response 22
Screened Horizon for OM Wells

AUC states the thickness of the OM aquifer may exceed 20 feet. The Standard Review Plan instructs staff to ensure the monitoring program provides early time detection of an excursion. Having the overlying wells screened in the lowermost portion of the overlying aquifer provides the best potential to detect an excursion.

AUC will have to commit to screening the lowermost 20-foot horizon if the OM aquifer is greater than 20 feet.

AUC Talking Point:

AUC will revise the TR to specify that it commits to *screen the lowermost 20-foot horizon if the OM aquifer is greater than 20 feet thick.*

1(l) Draft SER Section 2.5.3.2 TR Section 2.9.8.1; RAI Response 22
Monitoring the Lower Sand if CBM well is located within Production Area

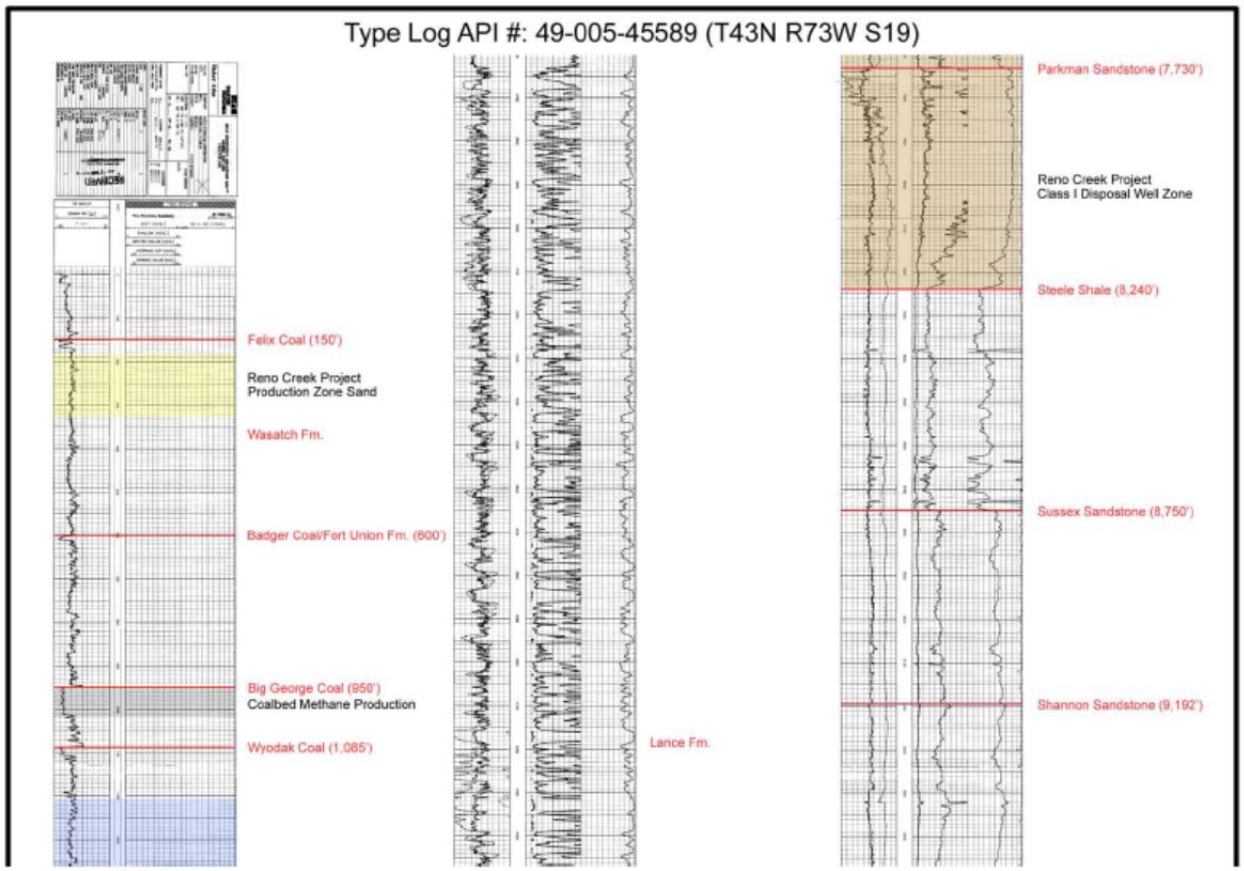
If a CBM well exists within a production area, staff finds that at least one monitoring well in the OM aquifer should be located immediately (within 500 feet) of that well to ensure the casing cement does not provide a conduit for fluid migration. For the underlying aquifer, staff agrees with the applicant and will not require monitoring of the UM aquifer. However, should a CBM well be located within a production area, staff will require that at least one well in the first transmissive sand underlying the PZM aquifer (immediately below the Badger Coal).

This requirement will be a license condition.

AUC Talking Point:

1. AUC requires confirmation that staff is concerned about impacts in the Underlying Unit (aquifer).
2. Can staff provide a description of where they have experienced the situation that seems to be risky?
3. Is there such monitoring at other ISR facilities where equivalent CBM related risks are occurring?
4. The Underlying Unit is the section immediately below the base of the PZA—and has no aquifer properties. It lies above, not below, the Badger Coal. Please see strat section and Type Log TR Fig 2.6-4 below which illustrates the position of the Badger Coal approximately 150 feet below the base of the PZA.
5. However, mention of the Badger Coal is confusing to AUC. Is staff under the impression that the Badger Coal produces for CBM development? It does not; it is the Big George that produces CBM—400 feet deeper yet.

AUC agrees with the first condition" *If a CBM well exists within a production area, at least one monitoring well in the OM aquifer should be located immediately (within 500 feet) of that well to ensure the casing cement does not provide a conduit for fluid migration."*



1(m) Draft SER Section 2.5.3.2 TR Section 2.9.8.1; RAI Response 22
Abandon Existing Wells Constructed by Method 4

The extended sand horizon for the existing wells used for the site characterization will act as conduits from lixiviant migration if one of the existing wells is located within a production area. The well will increase the flare within the production aquifer. Staff will include a license condition to have the well properly abandoned prior to start of operations in any such wellfield.

AUC Talking Point:

AUC agrees to a staff suggested license condition *to have each such well with extended screens and constructed by Method 4 properly abandoned prior to the start of operations of any such wellfield in which they are located*.

1(n) Draft SER Section 2.5.3.2 TR Section 2.9.8.1; RAI Response 22
Request to Abandoned BLM's All Night Well if located within a Wellfield

BLM's well cluster is likely located within the applicant's proposed Production Area 12A. Staff will include a license condition that AUC contact BLM to abandon the well prior to operations in that production area.

AUC Talking Point:

1. AUC requires clarification as to the concern that staff has. The All Night Cluster wells are piezometers, not installed or prepared for any purpose except water level measurement.
2. AUC needs confirmation that staff's concern relates to the All Night well completed in the PZA.
3. What are the technical, safety, or other reasons to abandon the well?
4. What is NRC's legal basis to require another Federal agency to abandon such a well?

1(o) Draft SER Section 2.5.3.2 TR Section 2.9.8.1; RAI Response 22
Commit to Providing a QA/QC Plan as a Pre-Operational License Condition

AUC did not describe with sufficient detail its propose QA/QC program. Staff will include a pre-operational license condition requiring submittal and approval of a QA/QC program.

AUC Talking Point:

AUC agrees to the staff suggested license condition requiring submittal and approval of a QA/QC program prior to the commencement of operations of the Reno Creek Project.

1(p) Draft SER Section 2.5.3.2 TR Section 2.9.8.1; RAI Response 22
Perimeter Wells Limited to 400 feet (Distance and Spacing)

Staff finds AUC's numeric groundwater flow model setup may have biased the predictive simulations. As a result, staff revised the model (e.g., modified boundary conditions, 5 layers, limited number of hydraulic zones, etc.) in an effort to evaluate the predictive simulations.

The revised model demonstrated that the effective hydraulic conductivity and storativity are slightly lower than those used in the model by AUC. Based on these results, and the fact that AUC acknowledged that the pumping test results suggest potential preferential pathways, staff will require 400-foot spacing and distance for wells in the perimeter ring in both the fully and partially saturated areas.

Staff will include a license condition for this requirement.

AUC Talking Point:

1. When did staff conduct the independent groundwater flow modeling?
2. What were the different assumptions and inputs into the modeling?
3. On what factual basis were those assumptions and inputs made?
4. When can the results of the modeling be provided to AUC for review?

2. NRC Engineering Open Issues

In its initial application, AUC stated that "Prior to commencement of pond construction, AUC will submit to NRC a backup storage pond design plan based on the site specific geotechnical investigation." AUC identified several components of the design that would be provided at a later date, including:

- Site and material characterization;
- Configuration and location;
- Slope stability analysis;
- Settlement;
- Liquefaction potential analysis;
- Pond storage/freeboard analysis;
- Surface water diversion design;
- Erosion protection design (embankment slopes and diversion ditches);
- Liner design;
- Leak detection system design;
- Hydrostatic uplift analysis;
- Construction specifications;
- Quality control testing program (methods and frequencies);
- Operational inspection plans; and
- Closure plans.

NRC staff issued several requests for additional information related to storage pond design, RAIs 32, 33, 34, 35, 39 and RAI 40. Staff has reviewed AUC's responses to these RAIs and has identified the following open issues.

2(a) Draft SER Section 4.2.3 (TR Section 4.3.5)(12/2014 Revised RAI Response 39)
Slope Stability Analysis

In its response to RAI 39, AUC stated that it would submit a slope stability analysis for the backup storage ponds prior to NRC licensing. To date, this analysis has not been submitted to the NRC staff. The staff cannot make a reasonable assurance finding that the ponds meet the requirements of 10 CFR Part 40, Appendix A, Criterion 5A(5) without reviewing a slope stability analysis. The NRC staff observes that Section 2 of Regulatory Guide 3.11 outlines acceptable methods for slope stability analyses. AUC can resolve this open issue by submitting a copy of the analysis.

AUC Talking Point:

AUC agrees to supply a copy of the slope stability analysis to staff. The date of submission will be determined during the public meeting.

2(b) Draft SER Section 4.2.3 (TR Section 4.3.5)(12/2014 Revised RAI Response 39)
Settlement calculations

In its response to RAI 39, AUC provided a narrative explanation regarding the low potential for settlement of the pond embankment. However, in its response to RAI 33, AUC identified an anticipated settlement amount of 0.5 ft. The response to RAI 33 did not provide information or calculations supporting 0.5 ft of settlement. To be able to reach a reasonable assurance finding related to 10 CFR Part 40, Appendix A, Criterion 5A(4) and (5), the staff needs to be able to review a calculation of anticipated settlement of the backup storage pond embankments. AUC can resolve this open issue by preparing and submitting an analysis of embankment settlement.

AUC Talking Point:

AUC agrees to supply a copy of the settlement calculations analysis to staff. The date of submission will be determined during the public meeting.

2(c) Draft SER Section 4.2.3 (TR Section 4.3.5)(12/2014 Revised RAI Response 39)
Liquefaction potential

In its response to RAI 39, AUC provided a narrative explanation regarding liquefaction potential for Wyoming. The response has a general discussion of liquefaction in Wyoming and did not appear to consider or evaluate the potential for liquefaction based on soil conditions at the Reno Creek site. Without this information, the staff cannot make a reasonable assurance finding that the ponds meet the requirements of 10 CFR Part 40, Appendix A, Criterion 5A(5) without reviewing a liquefaction potential analysis. AUC can resolve this open issue by submitting a copy of the analysis.

AUC Talking Point:

AUC agrees to supply a copy of the liquefaction potential analysis to staff. The date of submission will be determined during the public meeting.

2(d) Draft SER Section 4.2.3 (TR Section 4.3.5)(12/2014 Revised RAI Response 33 and 39)
Freeboard Analysis

In its response to RAI 39, AUC provided a storage and freeboard analysis for the backup storage ponds. The analysis presented anticipates wave run up of 1.1 ft. However, it is not clear to the staff which method AUC used to calculate wave run up. The regulations in 10 CFR part 40, Appendix A, Criterion 5A(4) require that a surface impoundment be designed to prevent overtopping of a pond resulting from wind or wave actions. AUC can resolve this open issue by identifying, in writing, the method used to calculate wave run up.

AUC Talking Point:

AUC agrees to revise the TR to show that AUC utilized the US Army Corps of Engineers method to calculate the wave runup for the backup pond. The date of submission will be determined during the public meeting.

2(e) Draft SER Section 4.2.3 (TR Section 4.3.5)(12/2014 Revised RAI Response 39)
Liner System Design

In its response to RAI 39, AUC stated that the liner system design was contained in Technical Report section 4.3.5.1. NRC staff reviewed the information in the technical report and understands that AUC intends for the liner to consist of the following components (listed from top to bottom):

- A 0.036 inch thick (minimum) high density polyethylene (HDPE) or polypropylene (PP) liner;
- A drainage layer to serve as a leak detection system;
- A 0.036 inch thick (minimum) secondary liner; and
- Foundation material.

NRC staff reviewed the drawings presented in Attachment 3A (ADAMS Accession No. ML13219A203) and the liner thickness was not identified on the drawings. As required by 10 CFR Part 40, Appendix A, Criterion 5A(2), the NRC staff has to have reasonable assurance that the liner system has appropriate chemical properties and sufficient strength to withstand contact with liquid and the stress of daily operation. AUC can resolve this open issue by clarifying that it intends to use a geosynthetic liner with the material and thicknesses identified above in the backup storage pond.

AUC Talking Point:

AUC agrees to revise the TR to reflect AUC's commitment to use a geosynthetic liner with the material and thicknesses identified above. This will take the form of inserting the proposed thickness of the liners into the actual engineering drawings. The date of submission will be determined during the public meeting.

2(f) Draft SER Section 4.2.3 (TR Section 4.3.5)(12/2014 Revised RAI Response 32 and 39)
Construction Specifications

In its response to RAI 39, AUC stated that construction specifications were located on drawings C-3.3 and C-3.4 of Addendum 3-A. The NRC staff also reviewed the response to RAI 32, which did contain some information on specifications for the drainage layer. The NRC staff was able to locate some specifications, such as the 95 percent compaction requirement for the subgrade below the liner and the transmissivity of the drainage material. However, the NRC staff has not been able to identify the minimum strength requirements for geosynthetics planned for use in the liner system. Note that 10 CFR part 40, Appendix A, Criterion 5A(2), 5A(4), and 5A(5) applies to both design and construction of surface impoundments. AUC can resolve this open

issue by identifying engineering properties for items used in construction of the storage pond liner system.

AUC Talking Point:

AUC agrees to revise the TR to reflect AUC's commitment to identify engineering properties for items used in construction of the storage pond liner system described above. The date of submission will be determined during the public meeting.

2(g) Draft SER Section 4.2.3 (TR Section 4.3.5)(12/2014 Revised RAI Response 39)
Quality Control for Pond Construction

In its response to RAI 39, AUC stated that quality control plan for pond construction could be found in TR section 4.3.5.3. NRC staff reviewed this section of the TR and observed that it addressed operational pond inspections. NRC staff has not been able to identify a quality control plan for pond construction. The NRC staff observes that proper quality control during construction is the best way to minimize the potential for leaks during operation. Note that 10 CFR part 40, Appendix A, Criterion 5A(2), 5A(4), and 5A(5) applies to both design and construction of surface impoundments. AUC can resolve this open issue by providing a quality control plan for construction of the ponds. The plan should address testing techniques and frequencies to evaluate items such as: engineering properties of materials used in construction; seam integrity; compaction of earthen materials, etc.

AUC Talking Point:

AUC will employ an Engineering Procurement Construction Management (EPCM) firm for initial construction of the project. The EPCM will integrate a Quality Control (QC) program for pond construction in accordance with guidance provided in Reg Guide 3.11 into its site wide QC program. The site wide QC requirements are embedded into the construction specifications that are developed as part of the final project engineering design package, but before pond construction begins. AUC will include a synopsis of the pond QC program in the TR, however do to the integrated site wide QC program, a stand-alone pond QC program will not be available.

2(h) Draft SER Section 4.2.3 (TR Section 4.3.5)(12/2014 Revised RAI Response 40)
Disposal capacity

In its response to RAI 40, AUC stated that it does not plan to use land application as a liquid disposal method. Additionally, AUC does not plan to construct an additional backup storage pond. The NRC staff understands that AUC intends to use a tank within the processing building to provide some liquid waste storage capacity between the plant and the disposal wells. The NRC staff is aware of the need to provide adequate disposal capacity, especially upon startup of the facility. NRC staff has observed situations where the ability of a licensee to dispose of liquid byproduct material is compromised during startup of a facility. This can happen as a result of diminished disposal well injection capacity, a leak in a pond liner system, or other unanticipated events. AUC can resolve this open issue by clearly committing to maintaining a certain

minimum disposal capacity and by committing to reduce production flows if a disposal issue arises.

AUC Talking Point:

AUC agrees to revise the TR to reflect AUC's commitment *to operate its production, including the generation of wastewater requiring disposal in Deep Disposal Wells, to levels that AUC's Deep Disposal Well capacity can handle within permit limits. In the event that some part of AUC's Deep Disposal Well capacity becomes unavailable, AUC will reduce is production rate to restore its ability to dispose of all wastewater.*

3. Health Physics Open Issues

3(a) RAIs 20, 23, 24, 25, and 26
Pre-Operational Environmental Monitoring

Due to the change in the location of the Central Processing Plant (CPP), NRC staff identified additional sampling that needs to be conducted to be consistent with Regulatory Guide 4.14. These issues were identified in RAI, 20, RAI 23, RAI 24, RAI-25, and RAI-26. This change affected air particulate, air radon, direct radiation, soil vegetation and livestock sampling. AUC committed to conduct additional sampling in the October 2014 Public Meeting. Regulatory Guide 4.14, Revision 1, Regulatory Position C.1 states that a complete pre-operational report with twelve consecutive months of data should be submitted prior to beginning milling operations. Prior to the start of operations, monitoring data, including airborne radon measurements, should be submitted to the NRC staff.

NRC staff request that AUC consolidate the aforementioned open items, including all previous environmental data reported in the original application into one final pre-operational environmental report (prior to the final approval of the license), and provide a date for submittal to NRC.

AUC Talking Point:

AUC requires clarification regarding this Open Issue.

1. Per AUC discussions with Staff regarding RAI 20, two air particulate monitor stations, AM#7 and AM#8 (as shown in revised TR Figure 2.9-1), are currently planned for relocation (subject to landowner consultation and approval, weather, etc.). The two monitors will collect pre-operational baseline Regulatory Guide 4.14-specified air particulate, environmental radon and environmental gamma radiation data for a 12 month period, with laboratory results available probably by mid-2017.
2. All other baseline radiological data will be available much sooner, by summer of 2015 (after completion of the 3rd set of vegetation sampling).
3. AUC wishes to confirm that, either:
   a) NRC wants to receive a complete pre-operational environmental report, by mid-2017 (incorporating the AM#7 and AM#8 data),

or (AUC's recommended alternative):

b) NRC will accept a partial pre-operational environmental report in the summer of 2015 (containing all but the AM#7 and AM#8 monitoring data), and will accept the remaining data via a supplemental report to be provided by the summer of 2017. This alternative is recommended by AUC because the later AM#7 and #8 data should be very similar to baseline data from the other monitoring stations, providing no new information useful during the pre-license evaluation process. Its purpose is to refine the pre-operational baseline database.

3(b) RAI 74 (includes RAIs 37 and 50)
Effluent Monitoring

NRC staff could not determine from the original application how AUC will meet NUREG-1569 Acceptance Criteria 4.1.3(2). AUC captured the RAIs and consolidated the responses in RAI-74. NRC staff had additional concerns and requested clarification of the use of MILDOS. NUREG-1569 Acceptance Criteria 4.1.3(2) states that monitoring and control systems for the facility are appropriate for the types of effluents generated. The intended purposes of measurement devices are clearly stated and criteria for monitoring are provided. The acceptance criteria from Section 5.7.7.3 of this standard review plan needs to be met.

NRC request that AUC update RAI-74 and discuss in more detail how MILDOS will be used to assess emissions from the wellfields and any other potential sources. AUC will discuss specifically the source terms used in MILDOS to compute quantities (wellfields) and any concentrations and radiation dose to receptor points and provide a date for submittal to NRC.

AUC Talking Point:

AUC agrees with the staff request to produce a final revised RAI 74 response to comprehensively discuss how MILDOS will be used to assess emissions from the wellfields and other potential sources. The date for submittal will be discussed in the public meeting.

3(c) Additional Meteorology RAI identified in March 26, 2014 Public Meeting
Meteorological Representativeness

NRC staff is reviewing the information provided by AUC in the report “Demonstration of Long-Term Representativeness of On-site Meteorological Data” dated, October 2014. Regulatory Guide 3.63 recommend that the continuous twelve month period of data collected on-site be representative of a concurrent period of meteorological data from a National Weather Service (NWS) station with long-term and short-term periods.

There is no additional information needed at this time. This issue is still pending and a decision will be reached and documented in the summary of this public meeting.

AUC Talking Point:

AUC awaits the decision.

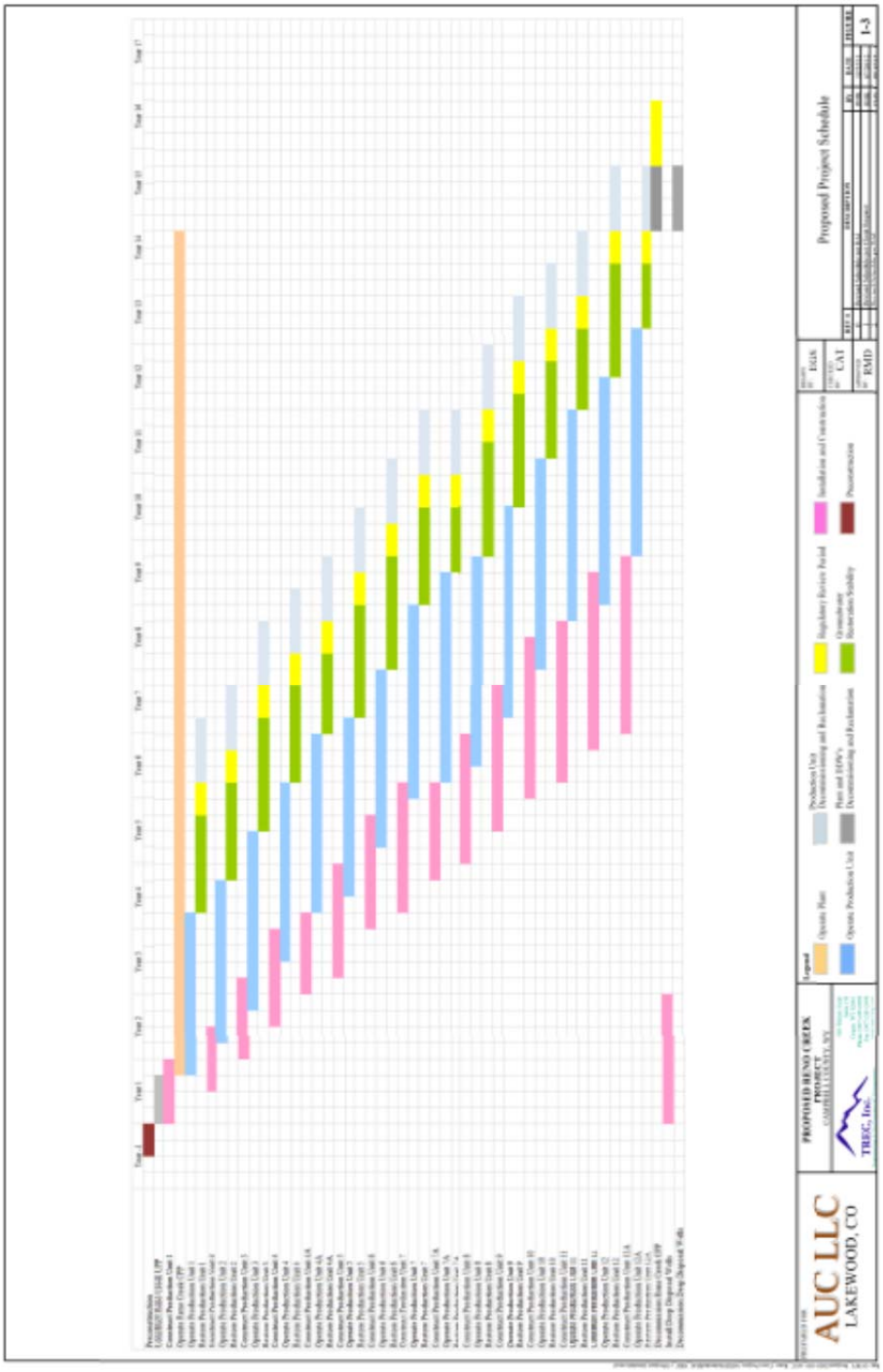
4. NRC Miscellaneous Open Issues

4(a) Draft SER Section 1.3 (TR Section 1)(12/2014 Revised RAI-2 Response)
Proposed Project Schedule

RAI-2 stated if AUC commits to implement a phased decommissioning approach, revise Figure 1-3 (Proposed Project Schedule) to show how the approach affects the start of decommissioning activities, but AUC's revised RAI-2 response but did not include a revised Figure 1-3. Staff notes that AUC's revised RAI response package contains an Appendix F that includes a figure of the Proposed Project Schedule which appears to incorporate a couple changes that do not appear in Figure 1-3 (such as, preconstruction activities prior to installation and construction activities, and changes to the figure legend. The staff requests that AUC commit to ensure Figure 1-3 is consistent with any other Proposed Project Schedule for this application.

AUC Talking Point:

AUC agrees to revise the TR to reflect the modified Figure 1-3, attached below.



4(b) Draft SER 5.1.3 (TR Section 5.1)(RAI Response N/A)
Integration between Plant Construction and Plant Management

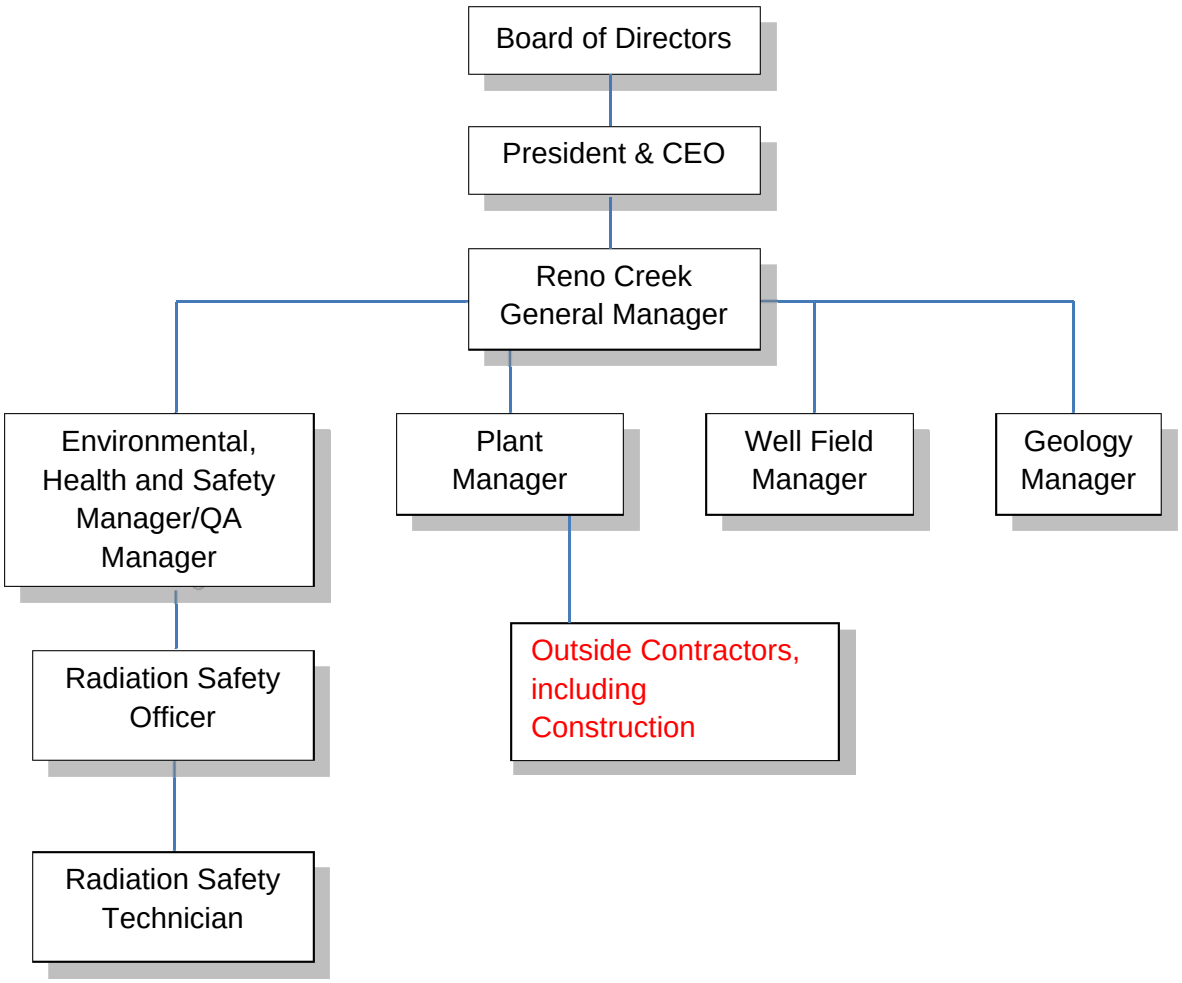
TR Section 5.1 does not address the integration between plant construction and plant management. Also, AUC's Organization Chart in Figure 5-1 shows the Plant Manager position under the General Manager, but it does not show where plant construction and plant maintenance are in the organization. The Standard Review Plan, Section 5.1.3, Acceptance

Criteria #2 states “The organizational structure shows integration among groups that support the operation and maintenance of the facility. If the facility is new, integration between plant construction and plant management should be detailed.” The staff requests that AUC add clarifying text in the TR to address the integration between plant construction and plant management. Also, clarify the role of the Plant Manager position in Figure 5-1 relative to the integration between plant construction and plant management.

AUC Talking Point:

AUC agrees to revise the TR to reflect the modified Figure 5-1, attached below. This figure shows that the Plant Manager is responsible for construction and vendor activities for the Project.

Figure 5-1: AUC Organizational Chart



4(c) TR Section 5.2
RSO or Individual with Equal or Equivalent Qualifications

In TR Section 5.2, AUC should revise or clarify wording when referring to an individual equal or equivalent qualifications to the RSO. For example, Section 5.2.1 states "All procedures involving radioactive material will be review and approved by RSO or individual with equal qualifications…", and Section 5.2.5 states that the third member of SERP will be the "RSO, or equivalent, with the responsibility for assuring that changes conform to radiation safety and environmental requirements." In referring to an individual with equal or equivalent qualifications to the RSO, AUC needs to clarify and/or demonstrate how this individual has equal or equivalent qualifications.

AUC Talking Point:

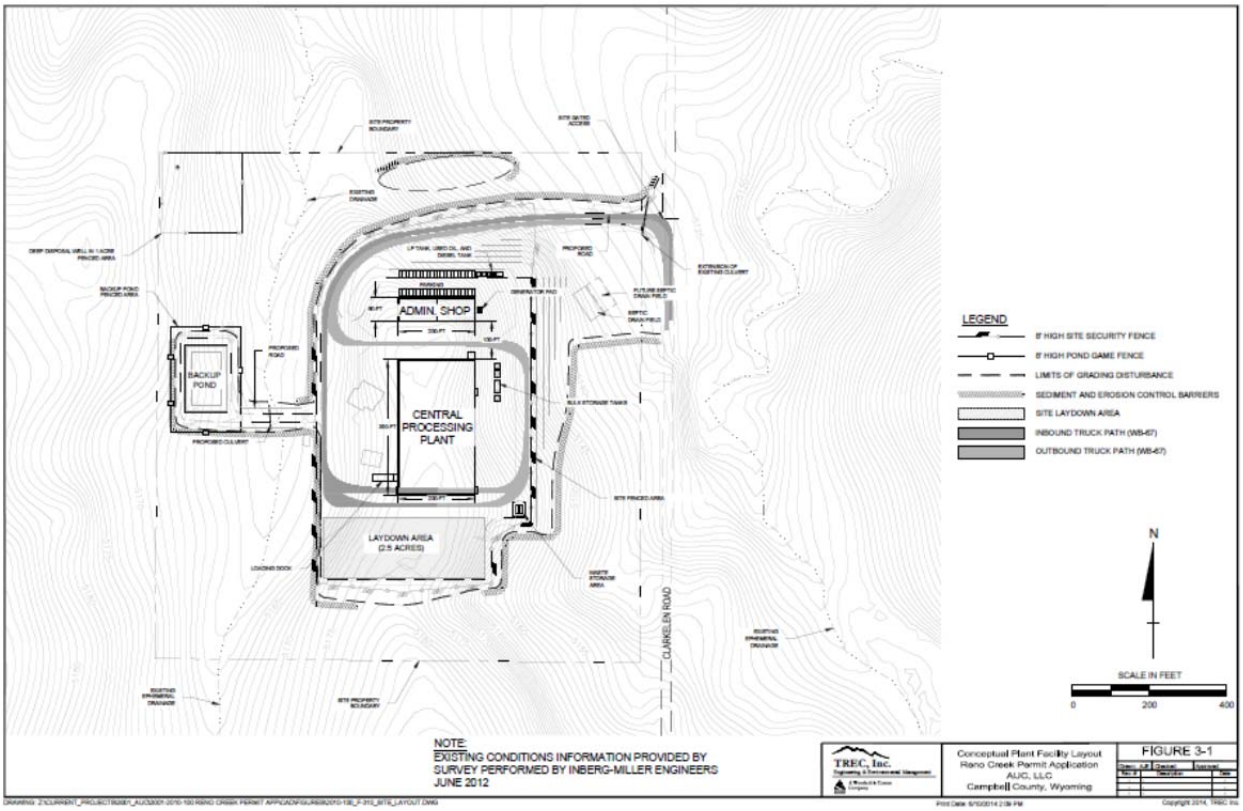
AUC agrees to revise the TR to remove terminology in Section 5.2.1 and 5.2.5 referring to an individual with qualifications equal or equivalent to the RSO. Only the RSO will be authorized to approve procedures involving radioactive materials, and only the RSO will have the responsibility to assure that changes conform to radiation safety and environmental requirements.

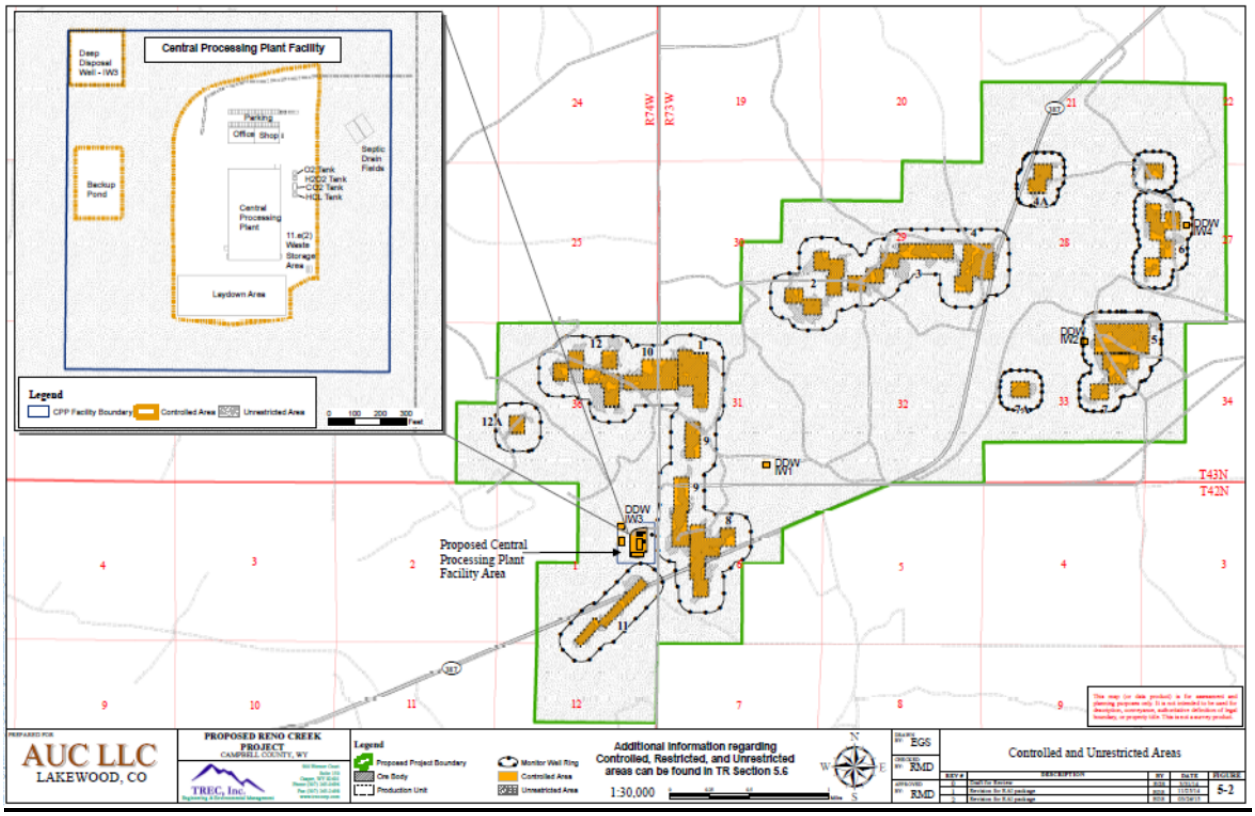
4(d) TR Section 5.6
CPP Facility Controlled Area

AUC's revised response to RAI-44 added a new Figure 5-2, which shows the controlled area around the CPP. This figure includes an enlarged view of the CPP Facility showing a fenced controlled area that appears to encompass the backup storage pond. However, Figure 3-1 of the TR appears to show the backup storage pond and CPP Facility as 2 separate fenced enclosures. AUC should ensure that the controlled area in Figure 5-2 and Figure 3-1 are consistent.

AUC Talking Point:

AUC agrees to revise the TR to reflect that Figure 3-1 and Figure 5-2 show identical fenced or controlled areas. See attached figures.


ADMIN. SHOP
BACKUP POND
CENTRAL PROCESSING PLANT
LAYDOWN AREA (2.5 ACRES)
CLARKELEN ROAD
LEGEND
IF HIGH SITE SECURITY FENCE
IF HIGH POND GAME FENCE
LIMITS OF GRADING DISTURBANCE
SEDIMENT AND EROSION CONTROL BARRIERS
SITE LAYDOWN AREA
INBOUND TRUCK PATH (WB-67)
OUTBOUND TRUCK PATH (WB-67)
N
SCALE IN FEET
0
200
400
NOTE:
EXISTING CONDITIONS INFORMATION PROVIDED BY SURVEY PERFORMED BY INBERG-MILLER ENGINEERS JUNE 2012
TREC, Inc.
Conceptual Plant Facility Layout
Reno Creek Permit Application
AUC, LLC
Campbell County, Wyoming
FIGURE 3-1


Central Processing Plant Facility
Deep Disposal Well - IW3
Backup Pond
Parking
Office
Shop
Septic Drain Fields
CO2 Tank
H2O2 Tank
CO2 Tank
HCL Tank
Central Processing Plant
11.e(2) Waste Storage Area
Laydown Area
Legend
CPP Facility Boundary
Controlled Area
Unrestricted Area
R74W
R73W
T43N
T42N
DDW IW1
DDW IW2
DDW IW3
Proposed Central Processing Plant Facility Area
AUC LLC
LAKEWOOD, CO
PROPOSED RENO CREEK PROJECT
CAMPBELL COUNTY, WY
TREC, Inc.
Legend
Proposed Project Boundary
Ore Body
Production Unit
Monitor Well Ring
Controlled Area
Unrestricted Area
Additional information regarding Controlled, Restricted, and Unrestricted areas can be found in TR Section 5.6
1:30,000
Controlled and Unrestricted Areas
5-2

4(e) TR Section 5.6
Surveillance

TR Section 5.6.1 states “All access to containers and vehicles where licensed material is located when not in storage will be locked, if possible, and under surveillance.” 10 CFR Part 20, Subpart I, Section 20.1802 (Control of Material not in Storage) states “The licensee shall control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage.” AUC needs to explain the difference between “under surveillance” and “maintain constant surveillance”.

AUC Talking Point

"AUC commits to store all licensed material in locked storage."

General Talking Point

AUC requests a discussion of the process for:

1. Submission of additional information required in the above Open Issues.
2. Timing of the revision of the TR.