

NRC Staff Response to AUC Comments on Draft License for October 8, 2015 NRC-AUC Public Meeting

Draft LC#	Draft License Condition	AUC Comments	NRC Response
9.2	<p>The licensee shall conduct operations in accordance with the commitments, representations, and statements contained in the license application dated October 3, 2012 (Agency wide Documents Access and Management System (ADAMS) Accession No. ML122890785), and supplemented by submittals dated June 7, 2013 (ML131680092), July 19, 2013 (ML132190282), June 13, 2014 (ML14169A452), June 24, 2014, (ML14182A470), September 4, 2014 (ML14251A011), December 23, 2014 (ML15002A077), April 22, 2015 (ML15119A317), and Date (MLXXXXXXXXXX). The approved application and supplements, hereby, are incorporated by reference, except where superseded by specific conditions in this license. The licensee must maintain the approved, updated, license application on site.</p> <p>Whenever the word “will” or “shall” is used in the above referenced documents, it shall denote a requirement. The use of the word “Wellfield” in this license is synonymous with the use of the term “Production Unit” or as a general descriptive term; it may or may not equate to wellfield as defined in the approved license application. A “wellfield production area” means the area in which lixiviant is injected into the subsurface. The use of “verification” in this license with respect to a document submitted for NRC staff review means a written acknowledgement by U.S. Nuclear Regulatory Commission (NRC) staff that the specified submitted material is consistent with commitments in the approved license application, or requirements in a license condition or regulation. A verification will not require a license amendment.</p>	<p>Insert "electronic" prior to license in the last sentence of the 1st paragraph.</p> <p>Revise the sentence as follows: "The licensee must maintain the approved, updated, electronic license application on site."</p>	<p>Staff disagrees with AUC comment. NRC inspectors cannot use licensee computers and need access to license application during inspections. Therefore, licensee must maintain hard copy of approved updated license application on site for NRC inspections.</p>

9.5

Financial Assurance. The licensee shall maintain an NRC-approved financial surety arrangement, consistent with 10 CFR 40, Appendix A, Criterion 9, adequate to cover the estimated costs, if accomplished by a third party, for decommissioning and decontamination, which includes offsite disposal of radioactive solid process or evaporation pond residues, and ground water restoration. The surety shall also include the costs associated with all soil and water sampling analyses necessary to confirm the completion of decontamination.

Proposed annual updates to the financial assurance amount, consistent with 10 CFR Part 40, Appendix A, Criterion 9, shall be provided to the NRC 90 days prior to the anniversary date (e.g. renewal date of the financial assurance instrument/vehicle). The financial assurance update renewal date for the Reno Creek Project will be determined following consultation with the licensee and the State of Wyoming. If the NRC has not approved a proposed revision 30 days prior to the expiration date of the existing financial assurance arrangement, the licensee shall extend the existing arrangement, prior to expiration, for one year. Along with each proposed revision or annual update of the financial assurance estimate, the licensee shall submit supporting documentation, showing a breakdown of the costs and the basis for the cost estimates with adjustments for inflation, maintenance of a minimum 15-percent contingency, changes in engineering plans, activities performed, and any other conditions affecting the estimated costs for site closure. Within 90 days of NRC approval of a revised closure (decommissioning) plan and its cost estimate, the licensee shall submit, for NRC staff review and approval, a proposed revision to the financial assurance arrangement if estimated costs exceed the amount covered in the existing arrangement. The revised financial assurance instrument shall then be in effect within 30 days of written NRC approval of the documents.

At least 90 days prior to beginning construction associated with any approved, planned expansion or operational change that was not included in the annual financial assurance update, the licensee shall provide, for NRC approval, an updated estimate to cover the expansion or change. The licensee shall also provide the NRC with copies of financial assurance-related correspondence submitted to the State of Wyoming, a copy of the State's financial assurance review, and the final approved financial assurance arrangement. The licensee also must ensure that the financial assurance instrument, where authorized to be held by the State, identifies the NRC-related portion of the instrument and covers the aboveground decommissioning and decontamination, the cost of offsite disposal of solid byproduct material, soil, and water sample analyses, and ground water restoration associated with the site.

Add "as warranted" following ground water restoration in the second sentence. Revise the sentence as follows: "The licensee shall maintain an NRC-approved financial surety arrangement, consistent with 10 CFR 40, Appendix A, Criterion 9, adequate to cover the estimated costs, if accomplished by a third party, for decommissioning and decontamination, which includes offsite disposal of radioactive solid process or evaporation pond residues, and ground water restoration as warranted."

Staff disagrees with AUC comment. "As warranted" does not clarify or add meaning to draft LC.

9.6

Release of surficial contaminated equipment, materials, or packages for unrestricted use shall be in accordance with the NRC guidance document, "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material," (the Guidelines) dated April 1993 (ADAMS Accession No. ML003745526) or suitable alternative procedures approved by NRC prior to any such release.

Where surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits established for alpha- and beta-gamma-emitting nuclides shall apply independently.

Personnel performing contamination surveys for items released for unrestricted use shall meet the qualifications as health physics technician or radiation safety officer as defined in Regulatory Guide 8.31 (as revised). Personal effects (e.g., notebooks and flash lights) which are hand carried need not be subjected to the qualified individual survey or evaluation, but these items should be subjected to the same survey requirements as the individual possessing the items.

Regulatory Guide 8.30 (as revised), Table 2 shall apply to the removal to unrestricted areas, of equipment, materials, or packages that have potential accessible surface contamination levels above background radiation levels. The contamination control program shall provide sufficient detail to demonstrate how the licensee will maintain radiological controls over the equipment, materials, or packages that have the potential for accessible surface contamination levels above background, until they have been released for unrestricted use as specified in the Guidelines, and what methods will be used to limit the spread of contamination to unrestricted areas. The contamination control program shall demonstrate how the licensee will limit the spread of contamination when moving or transporting potentially contaminated equipment, materials, or packages (i.e. pumps, valves, piping, filters, etc.) from restricted areas through unrestricted areas. Prior to its implementation, the licensee shall receive written NRC verification of the licensee's contamination control program if recommendations in Regulatory Guide 8.30 are not followed.

The licensee may identify a qualified designee(s) to perform surveys, as needed, associated with the licensee's contamination control program when moving or transporting potentially contaminated equipment, materials, or packages from restricted or

The second to last sentence in the fourth paragraph should include "controlled or". Revise the sentence to read as follows: "The contamination control program shall demonstrate how the licensee will limit the spread of contamination when moving or transporting potentially contaminated equipment, materials, or packages (i.e. pumps, valves, piping, filters, etc.) from controlled or restricted areas through unrestricted areas."

Staff agrees with AUC comment.

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9.7

The licensee shall follow the guidance set forth in NRC Regulatory Guides 8.22, "Bioassay at Uranium Recovery Facilities" (as revised), 8.30, "Health Physics Surveys in Uranium Recovery Facilities" (as revised) and 8.31, "Information Relevant to Ensuring that Occupational Radiation Exposure at Uranium Recovery Facilities will be As Low As Is Reasonably Achievable (ALARA)," (as revised) or NRC-approved equivalent with the following exception:

The licensee may identify qualified designee(s) to perform daily inspections in the occasional absence of the RSO and radiation safety technician(s) (RST). The qualified designee(s) will have health physics training, and the licensee will specify the training program to qualify a designee and submit it to the NRC staff for review and written verification. A qualified designee may perform daily inspections on weekends, holidays, or times when both the RSO and RST(s) must both be absent (e.g., illness or offsite training). A designee shall not perform daily inspections for more than two consecutive days except in the event of a Federal or company holiday, whereby the designee will not exceed more than three consecutive days. Reports generated by the designee will be reviewed by the RSO or RST as soon as practical, but no later than 3 hours from the beginning of the next work day following an absence, weekend, or holiday. The licensee will also have the RSO or RST available by telephone while the qualified designee is performing the daily inspections.

Notwithstanding the License Condition (LC) 9.4 change process, no additional exceptions to the guidance will be implemented without written NRC verification that the criteria in LC 9.4 do not require a license amendment.

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In the fifth sentence of the second paragraph please remove the requirement that reports generated by the designee be reviewed "no later than 3 hours from the beginning of the next work day".

The approved license application states in Section 5.4.3 Qualifications and Requirements for Daily Walkthrough Inspections that "The RSO or RST will review the inspection forms as a top priority upon return to the site, and will deal with noted problems." (See response to TR RAI 42).

Revise the sentence to read as follows: "Reports generated by the designee will be reviewed by the RSO or RST as soon as practical and as a top priority upon return to the site from the beginning of the next work day following an absence, weekend, or holiday."

The approved license application also states in Section 5.4.3 Qualifications and Requirements for Daily Walkthrough Inspections that "With the exception of the Thanksgiving holiday, the DO will not conduct the inspections for more than two days per week, or three days per week if a Federal holiday falls on Friday or Monday. For the Thanksgiving holiday, the DO may perform the inspections for up to four consecutive days." Please revise the fourth

There was no technical basis provided for AUC's comment. Staff seeks clarification discussion on following points: (1) come to agreement on urgency (open ended is not acceptable), and (2) get better understanding of four day request for Thanksgiving.

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<p>9.8</p>	<p>Cultural Resources. Before engaging in any developmental activity not previously assessed by the NRC, the licensee shall administer a cultural resource inventory. All disturbances associated with the proposed development will be completed in compliance with the National Historic Preservation Act (as amended) and its implementing regulations (36 CFR Part 800), and the Archaeological Resources Protection Act (as amended) and its implementing regulations (43 CFR Part 7).</p> <p>In order to ensure that no unapproved disturbance of cultural resources occurs, any work resulting in the discovery of previously unknown cultural artifacts shall cease. The artifacts shall be inventoried and evaluated in accordance with 36 CFR Part 800, and no disturbance of the area shall occur until the licensee has received authorization to proceed from the NRC, Wyoming State Historic Preservation Officer or the Bureau of Land Management (BLM), as appropriate.</p>	<p>The Reno Creek Project area does not contain any Bureau of Land Management (BLM) surface, therefore please remove the reference to the BLM in the last sentence of the second paragraph.</p> <p>Revise L.C. as follows: "The artifacts shall be inventoried and evaluated in accordance with 36 CFR Part 800, and no disturbance of the area shall occur until the licensee has received authorization to proceed from the Wyoming State Historic Preservation Officer or the NRC, as appropriate."</p>	<p>Staff agrees with AUC comment with the following additional wording:</p> <p>In 1st sentence of 1st paragraph, after "NRC" add "and within the direct area of potential effects (APE), ..."</p> <p>After last sentence of 2nd paragraph add new sentence "For developmental activities outside of the direct APE, the NRC shall be notified and provide appropriate authorization before commencement of those activities."</p>
<p>10.1</p>	<p>The licensee shall use a lixiviant composed of native ground water; carbon dioxide, sodium carbonate and/or sodium bicarbonate; and hydrogen peroxide and/or oxygen, as specified in Section 3.1.4.1 of the licensee's approved license application.</p>	<p>Add sodium chlorate as an oxidant since sodium chlorate is discussed in Section 3.1.4.1, Lixiviant, as a possible oxidant for use in the partially saturated portion of the PZA.</p> <p>Revise L.C. as follows: "The licensee shall use a lixiviant composed of native ground water; carbon dioxide, sodium carbonate and/or sodium bicarbonate; and hydrogen peroxide, oxygen and/or sodium chlorate, as specified in Section 3.1.4.1 of the licensee's approved license application."</p>	<p>Staff disagrees with AUC comment. Sodium Chlorate is not typically used at NRC-licensed sites, and AUC did not provide any analysis on the potential effects of its use or storage.</p> <p>AUC can perform a test or pilot using sodium chlorate through the SERP process (draft LC 9.4), and if test or pilot is successful and AUC wants to extend to commercial activities, AUC could submit an</p>

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			amendment request.
10.4	<p>The licensee shall develop and implement written standard operating procedures (SOPs) prior to operation for:</p> <p>A. All routine operational activities involving radioactive and non-radioactive materials associated with licensed activities that are handled, processed, stored, or transported by employees;</p> <p>B. All routine non-operational activities involving radioactive materials including in-plant radiation protection and environmental monitoring; and</p> <p>C. Emergency procedures for potential accident/unusual occurrences including significant equipment or facility damage, pipe breaks and spills, loss or theft of yellowcake or sealed sources, significant fires, and other natural disasters.</p> <p>The SOPs shall include appropriate radiation safety practices to be followed in accordance with 10 CFR Part 20. SOPs for operational activities shall enumerate pertinent radiation safety practices to be followed. A copy of the current written procedures shall be kept in the area(s) of the production facility where they are utilized. Should an activity be deemed 'non-routine', its procedures will be documented in a specific Radiation Work Permit for that non-routine activity.</p>	<p>Revise the condition in Section A as follows: "All routine operational activities involving radioactive materials and potentially hazardous bulk chemicals, gasoline and diesel associated with licensed activities that are handled, processed, stored, or transported by employees."</p>	<p>There was no technical basis provided for AUC's comment. Staff requests AUC that explain why non-"Radioactive material" is not acceptable?</p>
10.5	<p>Mechanical Integrity Tests. The licensee shall construct all wells in accordance with methods described in Section 3.1.3 of the approved license application. Mechanical integrity tests shall be performed on all wells (injection, extraction, and monitoring wells) before the well is utilized and on wells that have been serviced with equipment or procedures that could damage the well casing. Each well shall be retested at least once every five years it is in use. Integrity tests shall be performed in accordance with Section 3.1.3.3 of the licensee's approved license application. Any failed well casing that cannot be repaired to pass the integrity test shall be appropriately plugged and abandoned in accordance with Section 3.1.3.3 of the approved license</p>	<p>Delete the unnecessary L.C. (10.5) because this issue is adequately handled in the TR. Mechanical Integrity Testing is already detailed in the approved license application in Section 3.1.3.3.</p>	<p>Staff disagrees with AUC comment. This is a standard license condition. Some license conditions are included to reinforce a regulatory requirement or commitment.</p>

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<p>10.7</p>	<p>application. The licensee shall maintain a net inward hydraulic gradient at a Production Unit as measured from the surrounding perimeter monitoring well ring starting when lixiviant is first injected into the production zone and continuing until initiation of the stabilization period.</p>	<p>Delete the unnecessary L.C. (10.7) because this issue is adequately handled in the TR since AUC commits to maintain an inward gradient from the start of uranium recovery operations until initiation of the ground water stabilization period in Section 3.1.5, Wellfield Design, of the approved license application.</p>	<p>Staff disagrees with AUC comment. This is a standard license condition. Some license conditions are included to reinforce a regulatory requirement or commitment.</p>
<p>10.9</p>	<p>The licensee is permitted to construct and operate a single lined storage pond as described in Section 4.3.5 of the approved license application. The pond will be used for retention of liquid byproduct material prior to disposal in a deep disposal well. Routine pond inspections will be conducted in accordance with procedures defined in Sections 4.3.5.3 and 5.3.1 of the approved license application. The inspections include:</p> <p>A. Daily Inspection. The licensee will perform daily inspections in accordance with Sections 4.3.5.3.1 and 5.3.1.1 of the approved license application. The inspections will include visual inspections of the piping, berms, diversion ditches, freeboard and leak detection systems. The minimum freeboard is two feet. If during the daily inspections, a fluid height in any of the standpipes for the pond leak detection system is found to be in excess of six vertical inches, then the licensee will collect a sample of the fluid for analysis of specific conductance. If the specific conductance of the fluid in the leak detection system is in excess of 50 percent of the specific conductance of fluids in the pond, then it is concluded that a leak has occurred in the pond primary liner and the licensee will perform mitigative and corrective actions. The corrective actions include notifying the NRC Headquarters Project Manager (PM) by telephone or electronic (email) within 48 hours and lowering the</p>	<p>AUC committed to review of the weekly pond inspection report by the Manager of Health, Safety and Environmental Affairs, and the Operations Manager in Section 4.3.5.3.2 Weekly Inspections of the approved license application.</p> <p>4.3.5.3.2 Weekly Inspections</p> <p>Weekly inspections will include visual inspection of the entire area, including perimeter fencing. The Manager of EHS and Regulatory Affairs, and the Operations Manager, will review the inspection report. Routine weekly inspections reports will be maintained onsite by the RSO for NRC staff to review during routine site inspections.</p> <p>Delete RSO from the fourth</p>	<p>Staff understands AUC comment, but seeks clarification on whether or not AUC proposes a change to this draft LC?</p>

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<p>water level in the pond sufficiently to eliminate the leak. If corrective actions are not completed within 60 days, the pond will not be used to store any byproduct material until the liner is inspected by qualified personnel as required by Subsection D (Annual Technical Inspection). The licensee will submit a report to NRC upon completion of the corrective actions including documentation of all pond repairs. Routine daily inspections reports will be maintained on-site for NRC staff to review during routine inspections.</p> <p>B. Weekly Inspection. The licensee will conduct weekly inspections in accordance with Sections 4.3.5.3.2 and 5.3.1.2 of the approved license application. The inspections will include visual inspection of the entire area including perimeter fencing. The inspection report will be reviewed by the RSO, Manager of Health, Safety and Environmental Affairs, and the Operations Manager. The weekly inspection reports will be maintained on-site for NRC staff to review during inspections.</p> <p>C. Quarterly Inspection. The licensee will conduct quarterly inspections in accordance with Section 4.3.5.3.3 of the approved license application. Results of the quarterly inspections will be included in the semi-annual report submitted to NRC as required by LC 11.1. If ground water quality in the monitoring wells indicates a release of fluids from the pond, then the licensee will immediately perform corrective actions to eliminate the leak and any appropriate remedial actions including characterization of impacts to shallow soils and water in the uppermost aquifer. Results of the quarterly inspections will be submitted to NRC for review.</p> <p>D. Annual Technical Inspection. The licensee will conduct annual inspections in accordance with Section 4.3.5.3.4 of the approved license application. The annual inspection will include a review of the previous year's daily, weekly, and quarterly inspections, assessment of the hydraulic and hydrologic capacities, and a survey of the embankment by qualified personnel. A copy of the report will be submitted to NRC for review.</p>	<p>sentence of item B and include the term "weekly pond" for clarity. The revised sentence will read as follows: "The weekly pond inspection report will be reviewed by the Manager of Health, Safety and Environmental Affairs, and the Operations Manager."</p>	
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<p>10.10</p>	<p>The licensee shall submit to NRC staff for review and approval, plans for equipment and procedures prior to the use, storage, handling and transport of biological or chemical materials for reductant injections during restoration.</p>	<p>Delete the unnecessary L.C. (10.10) because this issue is adequately handled in the TR. AUC has addressed the use of chemical reductants such as sulfide and/or sulfite compounds in the approved license application in Section 6.1.4.3 Reverse Osmosis Treatment with Permeate Injection and Reductant Addition.</p> <p>AUC has also addressed the possible development of bio-remediation to create reducing conditions within a Production Unit undergoing groundwater restoration in the approved license application. In TR Section 6.1.4.4 Alternate Groundwater Restoration Method AUC states that it will SERP the development and field testing of bio-remediation. As part of the SERP process, the committee will consider the use, storage, handling and transport of biological materials for reductant injection prior to approving the use or implementation of bio-remediation for groundwater restoration.</p>	<p>Staff disagrees with AUC comment. Biological reductant is not widely accepted and needs approval based on site specific conditions. AUC did not provide discussion or evaluation of its safe storage or use.</p> <p>AUC can perform a test or pilot using the biological reductant through the SERP process (draft LC 9.4), and if test or pilot is successful and AUC wants to extend to commercial activities, AUC could submit an amendment request.</p>
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Prior to conducting tests for a wellfield data package, the licensee will attempt to locate and abandon all historic drill holes within:

A) The perimeter well ring for the Production Unit; and B) To the extent the historic drill holes extend into the first underlying aquifer, the area that is downgradient of the Production Unit and is between the perimeter well ring for the Production Unit and the closer of either:

- i. The Reno Creek Project area boundaries shown in Figure 1-2 of the approved license application; or
- ii. The outer boundary of the exempted aquifer as defined by the Class III Underground Injection Control (UIC) permit issued by the Wyoming Department of Environmental Quality (WDEQ).

The licensee will document such efforts to identify and properly abandon all drill holes in the wellfield data package.

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Please reference the discussion contained in Mr. Chad Glenn's memorandum (MFL 15112B316) on the March 31, 2015 Public Meeting in Section 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.

Disposition:

“AUC agreed to the NRC staff’s proposed license condition. This issue is open pending the NRC staff’s review of the proposed license condition which will require the abandonment and plugging of all wells within a wellfield prior to hydrogeologic testing for the wellfield hydrogeologic data package.”

During the discussion between AUC and NRC, AUC agreed to the language in Mr. Glenn’s disposition discussion. Specifically, for the license condition, historic drill holes within the perimeter monitoring well ring would be attempted to be located and plugged. At no time during the discussion did the NRC staff mention plugging historic drill holes outside of the perimeter monitoring well ring nor was this condition agreed to by AUC.

Staff disagrees with AUC comment. For clarification, AUC was never expected to agree to a license condition at the March public meeting. What was said at the public meeting was that a license condition "similar to the one for Strata" would be acceptable provided AUC had a chance to review the exact language. What AUC didn't fathom was that the BOARD's January 2015 decision made that the effective Strata's license condition revision.

NRC's understanding is that AUC agrees with paragraph (A). NRC proposes the following language for paragraph (B): “For purposes of an ACL application (if one were to be pursued for this wellfield) pursuant to 10 CFR Part 40 Appendix A Criterion 5B(5)(c), the licensee will document in the wellfield package the expected downgradient direction after operations have ceased, location of the anticipated point of exposure for any hazard assessment, and drillholes that potentially need to be properly abandoned between the expected point of exposure and perimeter well ring. In consideration of the potential for drillholes to be abandoned, the licensee

Wellfield Data Package. Prior to conducting principal activities in a new Production Unit, the licensee shall submit a hydrologic test data package (wellfield data package) to the NRC. The initial wellfield data package will be submitted for NRC staff review and verification. Each wellfield data package shall be submitted at least 60 days prior to the planned start date of lixiviant injection. In each wellfield data package, the licensee will document that: (1) all perimeter monitoring wells are screened in the appropriate horizon in order to provide timely detection of an excursion; and (2), the baseline values to establish ground water protection standards and Upper Control Limits (UCLs) for the Production Unit in accordance with LC 11.3. The wellfield data package will adequately define heterogeneities that may affect the chemical signature and groundwater flow paths within the ore zone as described in Sections 2.7.2.3, 3.1.1 and of the approved license application with the following conditions:

(a) The licensee will not construct monitoring wells used for the ground water detection monitoring programs at the Production Units by Methods 1, 2 or 3 as defined by the approved license application. The licensee will document the potentiometric surface isopleth map for the OM aquifer in the wellfield data package. The licensee will include an analysis of flare in the wellfield data package. The flare should be based on operational history after the initial wellfield data package. If the Production Unit contains atypical patterns (e.g., line or staggered line patterns), the licensee will provide justification for the flare of the atypical patterns.

(b) If a non-AUC controlled well (e.g., Coal Bed Methane (CBM) well, BLM All Night Creek wells) exists within a proposed Production Unit, the licensee will evaluate the need for including a monitoring plan to monitor the well water quality or install monitoring wells to monitor the potential migration should the casing cement pose a possible conduit for fluid migration. The monitoring may include a well in the first transmissive sand below the ore zone. If the non AUC controlled well is screened within the ore zone, the licensee will document that the well has been abandoned.

(c) If the Production Unit is located within 400 feet of a tract of land for which the licensee does not have the mineral holdings, the licensee will submit in the wellfield data package a Memorandum of Reciprocal Well Agreement with the mineral holder.

(d) If production or monitoring wells are completed in a 100-year flood plain, the licensee will ensure the wellheads have proper mitigation measures for flood protection.

In section (a) delete the word "not" from the first sentence. AUC will use Methods 1, 2 or 3 as defined in the approved license application for groundwater detection monitoring programs. Method 4 has been restricted to shallow well monitoring use only.

Revise the sentence as follows: "The licensee will construct monitoring wells used for the ground water detection monitoring programs at the Production Units by Methods 1, 2 or 3 as defined by the approved license application."

The discussion of flare relating to standard five spot pattern configurations was covered in the groundwater modeling report included in the approved license application therefore delete the following two sentences from Section (a): "The licensee will include an analysis of flare in the wellfield data package. The flare should be based on operational history after the initial wellfield data package." AUC agrees flare analysis should be addressed for atypical patterns.

Section (b): Please reference the discussion contained in Mr. Chad Glenn's memorandum (ML15113B306) on the Public Meeting held on March 31, 2015, Section

Staff agrees in part and disagrees in part with AUC comment. This response relates to three items: the word "not", flare analysis, and non-AUC wells.

Staff agrees with AUC on removing the word "not".

Staff disagrees with AUC on removing the flare analysis requirement. Although the flare was addressed in the application (by modeling), staff had made it clear that a one layer model was insufficient to model flare. A flare analysis should be part of the wellfield package based on the final design of a wellfield.

For the non-AUC wells, staff agrees with AUC on the change but with further revision:

The sentence "If the non-AUC controlled well is screened within the ore zone, the licensee will document that the well has been abandoned." to "If the non-AUC controlled well is screened within the ore zone, the licensee will submit to NRC, for review and

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<p>10.13</p>	<p>Facility and Wellfield Inspection. Injection manifold pressures and flow rates shall be measured and recorded daily by the in-line computer system and/or Wellfield Operator. During wellfield operations, injection pressures shall not exceed the maximum operating pressure as specified in Section 3.1.3.3 of the approved license application. To the extent possible, the daily inspections shall include visual inspections and document leaks or other abnormalities in the wellfield piping, wellheads, or header houses in accordance with Section 3.1.6 of the approved license application. The licensee shall conduct the weekly in-plant inspection and audit programs described in Section 5.3.1 of the approved license application. In addition, as described in Section 5.7 of the approved license application and supplements, the RSO shall document that radiation control practices are being implemented appropriately. Requirements for inspections of the storage pond are listed in LC 10.9.</p>	<p>The requirements for this L.C. are contained in the approved license application in Sections 3.1.3.3, 3.1.6, 5.3.1 and 5.7. Therefore, delete the unnecessary L.C. (10.13) because this issue is adequately handled in the TR.</p>	<p>Staff disagrees with AUC comment. This is a standard license condition. Some license conditions are included to reinforce a regulatory requirement or commitment.</p>
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All liquid effluents from process buildings and other process waste streams, with the exception of sanitary wastes, shall be returned to the process circuit or disposed of as allowed by NRC regulations. Additionally, the licensee is authorized to dispose of process solutions, injection bleed, and restoration brine using deep well injection, as permitted by WDEQ and described in the approved license application.

The licensee will obtain the necessary permits and construct a minimum of two Class I UIC deep disposal wells prior to the commencement of operations of the Reno Creek Project. The licensee shall ensure the deep disposal wells shall have enough capacity to handle the disposal of the total liquid effluent generation as stated in Section 3.1.8 of the approved license application. The licensee will ensure adequate deep well disposal capacity exists to dispose of liquids under normal operating conditions during production, production and restoration, and restoration phases as stated in the approved license application. The licensee will notify the NRC Headquarters PM by telephone or electronic mail (email) within 24 hours if a disposal well is shut down and becomes inoperable, with the exception of routine maintenance or required testing that is completed within 48 hours of shutdown. If necessary, the licensee will use additional deep well capacity, surge tanks, or reduce and/or cease injection activities until the operation of the disposal well is restored.

The licensee will notify the NRC Headquarters PM by telephone or email when the disposal well is placed back into service and report any repairs or service completed on the well that is not associated with routine maintenance. The licensee shall maintain a record of the volumes of solution disposed in each disposal well and submit this information in the annual monitoring report.

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Please reference the Disposition discussion contained in Ms. Chad Glenn's memorandum (ML15113B306) on the March 31, 2015 Public Meeting in Section 2(h) Draft SER Section 4.2.3 (TR Section 4.3.5)(12/2014 Revised RAI Response 40), Disposal Capacity

Disposition:
"AUC agreed to revise the TR to include 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 its production rate to restore its ability to dispose of all wastewater. This issue is open pending NRC staff's verification that the revised TR incorporates this AUC commitment."

AUC believes that only one DDW is required for initial startup of operations since NRC staff agreed in the Public Meeting with AUCs commitment to reduce its production rate as necessary in the event of a reduction in DDW capacity. AUC will include this commitment in the approved license application.

Staff agrees with AUC comment with addition of following statement after 3rd sentence of 2nd paragraph of LC: "In the event of a decrease in disposal capacity, AUC shall decrease or stop its production rate (except to maintain an inward gradient per LC 10.7) to adequately dispose of all liquid effluents and increase its disposal capacity by completing another of the approved deep disposal wells."

11.3

Establishment of Background Water Quality. Prior to injection of lixiviant in a Production Unit, the licensee shall establish background water quality data for the ore zone and overlying aquifers. The background water quality sampling shall provide representative baseline data and establish ground water protection standards and excursion monitoring upper control limits, as described in Section 5.7.8 of the approved license application and this license condition. The data for each Production Unit shall consist, at a minimum, of the following sampling and analyses:

A. Ore Zone. To establish a Commission-approved background concentration pursuant to Criterion 5B(5)(a) of 10 CFR Part 40 Appendix A, samples shall be collected from production and injection wells at a minimum density of one production or injection well per four acres of wellfield production area, or, if a wellfield production area is sufficiently isolated from the other wellfield production areas in the Production Unit, a minimum of two wells. Wells selected for the baseline data will be the same ones used to measure restoration success and stabilization.

B. Perimeter Monitoring Wells. Samples shall be collected from all perimeter monitoring wells that will be used for the excursion monitoring program. The perimeter wells will be installed for a Production Unit in accordance with information presented in Sections 3.1.6 and 5.7.8.1.3 of the approved license application with the following qualifications: The distance to and spacing of the perimeter wells will be 400 feet in both fully saturated and partially saturated portions of the aquifer; and the perimeter wells will be partially penetrating at the horizon corresponding to the nearest inject/production wells. In no case will the perimeter monitoring wells be installed outside of the exempted aquifer as defined by the Class III UIC permit issued by the WDEQ.

C. Overlying Aquifer. Samples shall be collected from all monitoring wells in the first overlying aquifer at a minimum density of one well per four acres of Production Unit.

D. Sampling and Analyses. Four samples shall be collected from each well to establish background levels. The sampling events shall be at least 14 days apart. The samples shall be analyzed for parameters listed in Table 2.7B-22 in Addendum 2.7-B of the approved license application. The third and fourth sample events can be analyzed for a reduced list of parameters; the parameters that can be deleted from analysis are those below the minimum analytical detection limits (MDL) during the first and second sampling events provided the MDLs meet the data quality objectives

In section (A) replace the term "ore zone" with "Production Zone Aquifer" in the first sentence to be consistent with the terminology in the approved license application.

To be consistent with the approved license application, Section 5.7.8.1.3, in section (E) replace the term "the mean values" in the second sentence with the term "established based on a statistically valid analysis of the data". Revise the sentence as follows: "For the perimeter ring monitoring wells (Section B) and monitoring wells in the overlying aquifer (Section C), the background levels shall be established based on a statistically valid analysis of the data on a parameter-by-parameter, well-by-well, Production Unit or sub-set of the Production Unit basis, as deemed appropriate, in accordance with Section 5.7.8.1 of the approved license application."

In section (E) replace the term "ore zone" with "Production Zone Aquifer" in the fourth sentence to be consistent with the terminology in the approved license application.

Revise the sentence as follows: "For the Production Zone Aquifer monitoring wells, the background levels shall be established on a parameter-by-parameter

Staff agrees with AUC comment.

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<p>11.4</p>	<p>Establishment of UCLs. Prior to injection of lixiviant into a Production Unit, the licensee shall establish excursion control parameters and their respective UCLs in the designated overlying aquifer and perimeter monitoring wells in accordance with Section 5.7.8.1.5 of the approved license application. The default excursion parameters for wells in the ore zone and overlying aquifer are chloride, conductivity, and total alkalinity. The UCLs shall be established for each excursion control parameter and for each well, Production Unit or subset of the Production Unit, as appropriate, based on the mean plus five standard deviations of data collected for LC 11.3. The UCL for chloride can be set at the background mean concentration plus either five standard deviations or 15 mg/l, whichever is higher.</p>	<p>Replace the term "ore zone" with "Production Zone Aquifer" in the third sentence to be consistent with the terminology in the approved license application.</p> <p>Revise the sentence as follows: "The default excursion parameters for wells in the Production Zone Aquifer and overlying aquifer are chloride, conductivity, and total alkalinity."</p>	<p>Staff agrees with AUC comment.</p>
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12.12

At least 90 days prior to the preoperational inspection, the licensee shall submit its analysis of the meteorological data collected to demonstrate long-term meteorological conditions at the Reno Creek ISR Project. The licensee shall continue to collect meteorological data on a continuous basis at a data recovery rate of at least 90 percent and may not commence operations until the data collected are verified in writing by NRC headquarters staff to be representative of long-term meteorological conditions at the Reno Creek ISR Project. The data collected on-site shall include, at a minimum, wind speed, wind direction, an annual wind rose and a summary of the stability classification.

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Delete the unnecessary L.C. (12.12) because this issue was adequately handled in an RAI response.

Staff agrees with AUC comment.

Please reference the Disposition discussion contained in Mr. Chad Glenn's memorandum (ML15113B306) on the March 31, 2015 Public Meeting in section 3(c) Additional Meteorology RAI identified in March 26, 2014 Public Meeting Meteorological Representativeness. The disposition statement reads: "This issue is closed based on information provided in AUC's December 2014 revised RAI response regarding meteorological representativeness."

In addition, on July 23, 2015, NRC staff rendered a decision to remove this same license condition from Strata Energy, Inc. (Strata), Materials License SUA-1601. In the decision contained in Accession Number ML15197A102 NRC staff concludes "The NRC staff has verified that meteorological data collected by Strata from 2010 through 2013 are representative of long-term

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<p>12.15</p>	<p>The licensee shall submit to the NRC, for review and verification, its method for determining with specificity the maximum pressure for a header house. The maximum pressure should include a factor of safety.</p>	<p>AUC proposes adding the following maximum injection pressure calculation method to TR Section 3.1.3.3, rather than including as a license condition.</p> <p>Example maximum injection pressure calculation: Maximum Injection Pressure = Sf* De* (FFP - Vg) Where: Sf = safety factor; 90% De= depth of screen in feet; 310 ft. FFP= Formation Fracture Pressure; 0.8 psi/ft. Vg =vertical pressure gradient of water; 0.433 psi/ft. MIP = 0.90 * 310 ft.* (0.8 - 0.433) = 102 psi</p> <p>Delete this L.C. (12.15) because this issue will be adequately handled in the TR.</p>	<p>Staff agrees with AUC comment to add proposed wording to TR with AUC's commitment to also include references to public sources supporting the justification for a fracture gradient of 0.8 psi/foot.</p>
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12.17

Prior to the construction of the storage pond, the licensee shall submit a copy of the quality control plan for NRC review and verification.

NRC Staff Response to AUC Comments on Draft License for October 8, 2015 NRC-AUC Public Meeting

Delete the unnecessary L.C. (12.17) because this issue is adequately handled in the TR. Please reference the Disposition discussion contained in Mr. Chad Glenn's memorandum (ML15113B306) on the March 31, 2015 Public Meeting in Section 2(g) Draft SER Section 4.2.3 (TR Section 4.3.5) (12/2014 Revised RAI Response 39), Quality Control for Pond Construction.

Disposition:
"AUC agreed to provide above information and revise the TR to include a synopsis of the backup pond QC program. This synopsis will describe items in light of Reg.

Guide 3.11 as part of AUC's site wide project construction QC plan. AUC also agreed to notify NRC by letter when the Site wide QC plan, including Pond specific items, is available for NRC inspection prior to construction. This issue is open pending AUC's submittal of this information and NRC staff's verification that the revised TR includes this AUC commitment. AUC plans to provide this information in the late April 2015 timeframe."

As discussed and agreed to in the Public Meeting our Engineering Procurement Construction Management (EPCM) firm will integrate a Quality Control (QC) program

Staff disagrees with AUC comment. Staff also proposes the following change to draft LC wording:
"Prior to the construction of the storage pond, the licensee shall notify NRC staff of the availability of the site wide QA program."

As discussed earlier, some license conditions are included to reinforce a regulatory requirement or commitment. Notification of NRC is helpful so staff is aware of activities and can schedule a site visit, if necessary.

