

# Attachment 1

<b>General</b>	
<p><b>GEN-1</b> Please confirm plans for the Ruth site during the proposed license renewal period.</p> <p>If Cameco plans to develop the Ruth site during the proposed license renewal period, please provide detailed information regarding the scope and timing of these activities. Also, provide additional information to support an evaluation of the impacts to each resource area (as recommended in NUREG-1748). This information should include current data on the Ruth site and its vicinity, and also address, as appropriate, the information requested below as for the other sites in the Smith Ranch Project. This information should address each of the phases of the ISR process.</p> <p>In Sections 1.5 of the ER and TR, Cameco writes that “[s]ince Cameco is not actively developing the Ruth Remote Satellite at this time [January 2012] and available data for Ruth are limited, Cameco will defer submittal of an operating plan and updated environmental evaluation for Ruth until closer to the time of commencing operations.” On the other hand, Cameco also included environmental information regarding the Ruth area and, in Section 3.3.4 of the TR, stated that “Cameco has plans to extract uranium at Ruth within the next ten years, but an updated operations plan that details the extraction and production plans, including mine units, satellite layout and other details have yet to be developed.” Thus, the NRC requests clarification of Cameco’s intentions regarding the Ruth site.</p>	<p><b>CAMECO RESPONSE:</b> Cameco does not intend on developing the Ruth property into a production center within the next renewal period. TR Section 3.3.4 has been revised to reflect this business decision.</p>
<p><b>GEN-2</b> Please clarify the following apparent discrepancies in the license renewal application related to the size of the various sites and some of the respective flow rates.</p> <ul style="list-style-type: none"> <li>- The areal extent (i.e., size) of the Smith Ranch site is stated differently on page 1-7 of the TR than on page 2-1 of the TR.</li> <li>- The areal extent of the North Butte site is stated differently on pages 1-7 and 2-8 of the TR as compared to page 3-3 of the TR.</li> <li>- The areal extent of the Gas Hills site is given differently on page 1-8 of the TR than on page 2-5 of the TR.</li> </ul> <p>The respective flow rates at the different sites also seem to contain some discrepancies, including:</p> <p>Smith Ranch Site:</p>	<p><b>CAMECO RESPONSE:</b> The discrepancies noted in the comment were primarily due to conversion errors and rounding. All corrections have been made as requested.</p>

<ul style="list-style-type: none"> <li>- The current, maximum, and nominal flow rates for Satellite 2, 3, SR-1, and SR-2 are stated differently on page 1-15 of the TR as compared to the rates provided on page 3-47 of the TR.</li> </ul> <p>Reynolds Ranch Site:</p> <ul style="list-style-type: none"> <li>- The currently licensed flow rate is given differently on page 1-6 of the TR than on page 3-3 of the TR.</li> <li>- Proposed increased flow rate is stated differently on pages 1-6 and 1-15 of the TR than as given on page 3-3 of the TR.</li> </ul> <p>North Butte Site:</p> <ul style="list-style-type: none"> <li>- The currently licensed flow rate is specified differently on page 1-5 of the TR than on page 3-3 of the TR.</li> <li>- The proposed increased flow rate is stated differently on pages 1-5 and 1-15 of the TR than on page 3-3 of the TR.</li> </ul> <p>iv. Gas Hills Site:</p> <ul style="list-style-type: none"> <li>- The flow rate is given differently on TR page 1-15 and ER page 2-1, than is stated on TR pages 3-4, 3-54, and 3-64.</li> </ul>	
<p><b>GEN-3</b> Please resolve apparent discrepancies concerning information for some of the facility-design data related to the Smith Ranch Project.</p> <p>A. The approximate footprint for the proposed North Butte satellite building is stated differently on page 3-3 of the TR, as compared to page 3-51 of the TR.</p> <p>B. The flow rate for the Carol Shop Satellite Building at the Gas Hills site is given differently on page 3-54 of the TR, than is stated on page 3-64 of the TR.</p> <p>C. On page 2-1 of the ER, it states that the total flow rate for the Gas Hills site would increase from the currently licensed 45,000 lpm to 51,000 lpm, while on page 1-15 of the TR, the currently licensed flow rate for the Gas Hills site is given as 51,000 lpm.</p> <p>D. The reported dimensions of the surface impoundment at Smith Ranch's Central Processing Plant (CPP) is stated differently on page 3-45 of the TR, than is stated on page 4-6 of the TR.</p>	<p><b>CAMECO RESPONSE:</b> The noted discrepancies have been corrected.</p>

<p><b>GEN-4</b> Please update the status of all federal, state, and local permits submitted or required for the Smith Ranch Project. Identify each individual permit and provide additional information as needed.</p> <p>A. Please update the status of all federal, state, and local permits and identify each individual permit.</p> <p>B. Please provide an update regarding the status of Cameco's permit applications indicated as under technical review by the WDEQ.</p> <p>C. Please provide any additional information that may have been developed by Cameco during the preparation of the permit applications shown in Tables 1-2 through 1-4 as "to be prepared." Please include in revised Tables 1-2 through 1-4 any new permit applications that may have been submitted by Cameco (or accepted by the WDEQ) since the submittal of its license renewal application to NRC.</p> <p>The permitting status of the Smith Ranch Project presented in the ER as Tables 1-1 through 1-4 indicates that some of the identified permits have been approved, while other permit applications are either under review or are yet to be prepared. In nearly all cases, however, the individual permits themselves (e.g., their tracking numbers) are not specified. Additionally, in Section 1.4.2 of the TR, Cameco indicates that a Combined Permit Application for the Smith Ranch, Highland, and Reynolds Ranch sites (i.e., to combine WDEQ Permits 633 and 603) has been submitted to the WDEQ and that it was under technical review by the WDEQ at the time of the license-renewal application's submittal to the NRC.</p> <p>Please provide any additional information from these permits and permit applications provided to the federal, state, or county agencies since the ER was submitted, or provide the permits and permit applications themselves, for NRC's consideration in the NRC's EA.</p>	<p><b>CAMECO RESPONSE:</b> Tables 1-1 through 1-3 of the ER have been revised to include permit numbers and updated status as of May 2014 for SRH, North Butte, and Gas Hills. Table 1-4 (Ruth) was updated; however, this site has had no development during the renewal period.</p>
<p><b>GEN-5</b> Please provide the current progress on construction and ISR operations at each of the Smith Ranch Project sites.</p> <p>Cameco submitted its revised license renewal application in February 2012. Please provide an update to the current status of construction and operations at each of the Project sites.</p>	<p><b>CAMECO RESPONSE:</b> Progress updates have been provided as footnotes in Sections 1 and 2 of the ER.</p>

<b>Facility Design</b>	
<p><b>FD-1</b> Please provide additional information regarding header-house and wellhead structures.</p> <ol style="list-style-type: none"> <li>1. Please provide additional design details on the typical header house(s) that would be constructed to support wellfield operations at all Smith Ranch Project sites.</li> <li>2. Please provide the number of header houses and wells that would be constructed at each wellfield at each Smith Ranch Project site. For the Smith Ranch site itself, please compare the number of new header houses anticipated with the number currently located in the existing wellfields.</li> </ol> <p>Sections 3.6.1.6 and 4.2.4 of the TR describe the current design of the basements in header houses and also the equipment (i.e., leak detection system, sump) that would be contained within these basements. Sections 3.5.2.2 of the TR and 4.9.1 of the ER provide wellhead cover design details. Please provide additional detail information on the header houses and wellhead structures to address (1) the extent of surface disturbance during construction, (2) the depth of excavation for header house basements, (3) the dimensions, colors, and construction materials of the header houses and wellhead structures, and (4) the number of structures anticipated at the Smith Ranch site and at each of the three remote satellite sites. This information is requested to aid NRC's assessment of the related environmental impacts to affected resource areas.</p>	<p><b>CAMECO RESPONSE:</b></p> <ol style="list-style-type: none"> <li>1. Sections 3.5.2.1, 3.5.2.2, and 4.2.4 of the TR have been revised to provide this additional information.</li> <li>2. New Table 4-1.1 has been added to TR Section 4.2.4; it includes an estimated summary of the number of structures at the existing or current development projects. The actual number of wellfield structures will vary from mine unit to mine unit depending on the extent of the ore body. The number of header houses and well heads are defined after final delineation drilling and wellfield planning has been performed. This information is provided in each mine unit wellfield data package. Construction of these facilities will not result in additional disturbed acreage as they are all contained within the mine unit (monitor well ring) disturbed surface footprint. The disturbed surface calculation at each site is updated annually and is accounted for in each annual surety update. The number of structures will vary per project.</li> </ol>
<b>Cumulative Impacts</b>	
<p><b>CI-1</b> Please provide additional information on the cumulative-impact analyses contained in the ER.</p> <ol style="list-style-type: none"> <li>A. Please describe the geographic and temporal parameters used to develop the scope of the cumulative impact assessments in Section 4 of the ER for each resource area.</li> <li>B. Please provide additional quantitative information regarding the features of all past and</li> </ol>	<p><b>CAMECO RESPONSE:</b></p> <p>A. The geographic and temporal parameters used to develop the scope of the cumulative impact assessments in ER Section 4 for each resource area can be found in ER Sections</p>

present actions and reasonable foreseeable future actions (RFFAs) that were used in the assessment of cumulative impacts in each resource area. To the extent available, description of RFFAs should include the location, schedule and cumulative-impact analysis for each RFFA that could occur in the vicinity of each of the Smith Ranch Project sites, with respect to all resource areas.

C. Please provide a cumulative impact assessment for the following resource areas: geology and soils, ecology, historical and cultural resources, and public and occupational health and safety.

D. Analysis of cumulative impacts should be based upon, to the extent possible, quantitative comparisons between impacts as a result of the proposed relicensing of the Smith Ranch Project and the cumulative impacts of actions within a defined geographic and temporal scope. Section 2.2 of the ER states that cumulative impact assessments were performed for impacts that were considered to be meaningful. It is not clear how Cameco determined which impacts were meaningful; therefore, the NRC requests the geographic and temporal parameters used in developing the resource area-specific scope for the cumulative impact assessment.

E. Additionally, the cumulative impact assessment should make use of the most recent, available quantitative data. For example, with respect to transportation impacts, the traffic flow to and from other actions within each designated cumulative-impact area (i.e., for each resource area) and from RFFAs should be quantified to allow comparison with current baseline conditions and all increases as a result of the proposed relicensing of the Smith Ranch Project. Data on RFFAs made available since Cameco's submittal of its license renewal application should be reflected in the cumulative impact assessment.

F. Also, in Section 4 of the ER, cumulative impact evaluations of the Smith Ranch Project are not provided for the following resource areas: geology and soils, ecology, historical and cultural resources, and public and occupational health and safety. Evaluations that are provided in the ER for other resource areas generally are not specific to each site. Section 6.4 of NUREG-1748 indicates that cumulative impacts should be included among the impacts analyzed and described for each resource area. Such an analysis of the cumulative impacts for all resource areas and specific to each Smith Ranch Project site is requested by the NRC.

4.1.1.1 through 4.1.1.4. Temporal parameters are based on the production and restoration schedules for each resource area. Please see the production and restoration schedules in TR Sections 3.9 and 6.1.3, respectively, for more detail. General geographic parameters are similar for each resource area, but specific acreages associated with disturbances can be found in each subsection of 4.1.1.

In the case of hydrologic impacts, temporal parameters are also based on production and restoration schedules for each resource area. Geographic parameters for surface water impacts included drainages, surface water features (i.e., wetlands, impoundments, springs, etc.), and wastewater disposal locations. Geographic parameters for groundwater impacts include ore zone, overlying, and underlying aquifers surrounding the production zone or exempted aquifer as explained in Section 4.4.1.2. Geographic parameters for wildlife and vegetation encompass the license and project boundaries as required by the NRC and are discussed in Section 4.5. Geographic parameters of air quality impacts are discussed in ER Section 4.6 and TR Section 4.1.

Text has been added to Paragraph 2 of ER Section 4.1.1 clarifying types of disturbances and time horizons associated with those

	<p>disturbances. Also see response to ER RAI LU-1.</p> <p>B. The quantitative information of the proposed actions included in the February 2012 NRC Submittal include disturbances experienced by February 2012 and proposed future actions. Disturbances experienced by February 2012 are detailed in Sections 4.1.1.1 through 4.1.1.4 and Section 4.2.3. Quantitative and qualitative explanations of proposed actions are explained in sections: 4.1.1, 4.2.1, 4.2.2, 4.3.1, 4.4.1, 4.5.1, 4.6.1, 4.7.1, 4.8.1, 4.9.1, 4.10.1, 4.11.1, and 4.12.1. Cumulative impacts of proposed actions are contained as appropriate in sections: 4.1.4, 4.1.5, 4.4.4, 4.6.4, 4.7.4, 4.9.4, 4.10.4, and 4.11.4. These were all contained in the February 2012 NRC submittal.</p> <p>To the extent available, impacts of the proposed activities include the location, schedule, and cumulative impact analysis with respect to all resource areas. Production and restoration schedules can be found in TR Sections 3.9 and 6.1.3, respectively.</p> <p>C. Cumulative impact assessments for geology can be found in ER Section 4.3.1.1, soils impacts can be found in ER Section 4.3.1.2, ecological resources impacts can be found in ER Section 4.5, historical and cultural resources impacts can be found in ER Section 4.8, and various aspects of public and occupational health and safety can be found</p>
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	<p>in ER Section 4.12. Each section contains site-specific details.</p> <p>D. Please see response to A.</p> <p>E. Please see response to B.</p> <p>F. Please see response to C.</p>
<p><b>RAI CI-2</b></p> <p><b>Please provide an assessment of the impacts of the proposed Ludeman Project by Uranium One in the cumulative impacts analysis for the Smith Ranch site.</b></p> <p>In Table 2-1 of the ER, the Ludeman Project, an RFFA, is proposed to be developed within the same geographic area modeled for Smith Ranch site cumulative impacts; however, it is not clear how or if the Ludeman Project was addressed in Cameco's cumulative impact analysis. For example, the model of cumulative hydrologic impacts for the Smith Ranch site is presented in Appendix E of the ER, but the impacts of the Ludeman Project's operations are not evaluated in the ER's Appendix E's model. Additionally, the anticipated volumes of liquid process wastes at the Ludeman Project to be disposed via deep well injection should be included in Cameco's assessment of cumulative impacts to deep aquifers from deep well injection.</p> <p>Cameco's cumulative impact assessment should include impacts from the proposed Ludeman Project.</p>	<p><b>CAMECO RESPONSE:</b> Cameco has conducted an assessment to evaluate the hydrologic impacts of the Uranium One Ludeman ISR Project (Ludeman Project) as part of the Cumulative Hydrologic Impact Assessment for the Smith Ranch site. This assessment included an evaluation of the cumulative hydraulic impacts resulting from ISR wellfields and Deep Disposal Wells (DDW's) at the Ludeman Project and Smith Ranch. This assessment is included as Attachment D of the revised Cumulative Hydrologic Impact Assessment for Smith Ranch (Appendix E of the ER) and an introduction to the Ludeman Project and Deep Disposal Well Impact Assessment can be found in Section 4.2 of Appendix E to the ER.</p> <p>Uranium One conducted an analysis of the hydrologic impacts of their ISR wellfields in their response to ER RAI 56 for the Ludeman Project. Their analysis included calculation of the Radius of Influence (ROI) of ISR wellfields within 2 kilometers (1.2 miles) of each phase of their operation. Cameco's evaluation of the hydrologic impacts of the Ludeman ISR wellfields is an extension of Uranium One's</p>



	<p>impact assessment to include the evaluation of drawdown impacts beyond 2 kilometers (km) of the Ludeman Project boundary and including the Smith Ranch license area.</p> <p>Results of the ISR wellfield impact assessment indicates a small incremental increase in facility drawdown of less than 0.3 meters (1-foot) is predicted as a result of Ludeman and Smith Ranch impact on one another (see Figures 2 through 6 of Attachment D of Appendix E of the ER). The cumulative hydrologic impacts resulting from the combined Ludeman Project and Smith Ranch operations are therefore similar to individual facility impacts, and should not adversely impact ISR operations or water resources at either facility.</p> <p>Cameco is in the process of evaluating the hydrologic impact of DDWs as part of a combined Aquifer Exemption Boundary revision process. As part of this evaluation, the 10- and 20-year Cone of Influence (COI) radius, Emplaced Fluid (EF) radius, and Final Radius of Review (FROR) were calculated. The 20-year FROR for SRH-RR DDWs ranges from approximately 0.8 to 4.6 km (0.5 to 2.86 miles).</p> <p>Estimated hydrologic impacts of proposed DDWs at the Ludeman Project have not been published by Uranium One, and there is insufficient information concerning proposed injected waste volumes, rates, duration and</p>
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	<p>site-specific aquifer characteristics to justify precise impact calculations at this time. However, because the target injection interval for the Ludeman Project and Smith Ranch is the same (e.g. Parkman, Teapot, and/or Tekla Formations), DDWs should possess similar injection characteristics and we can infer that the hydraulic impacts from the Ludeman Project DDWs should be reasonably similar to Smith Ranch DDW impacts. Based on these assumptions, a FROR for the Ludeman Project DDWs of 3.2 km (2 miles) is considered reasonable and conservative for purposes of this evaluation. Results of the DDW impact assessment indicates that the operation of DDWs at the Ludeman Project and Smith Ranch should not hydraulically influence or otherwise adversely impact one another (see Figure 7 of Attachment D to Appendix E of the ER).</p>
<p><b>RAI CI-3</b></p> <p><b>Please provide the status of other ISR projects that Cameco has under consideration.</b></p> <p>During the August 2012 NRC visit to the Smith Ranch Project sites, one stop was made at the site of a potential future Cameco ISR property, Ruby Ranch. Additionally, during the NRC's February 7, 2013 public meeting with Cameco, Cameco has stated that the Brown Ranch property (located near North Butte) is also under consideration as a future ISR site. The NRC requests the current status of Cameco's development of the Ruby Ranch and Brown Ranch sites and Cameco's intentions for these properties over the next 10 years. Please also provide this information for any other sites that Cameco has under consideration for ISR-related activity in the next 10 years and that are located in the proximity of the current Smith Ranch Project sites.</p>	<p><b>CAMECO RESPONSE:</b> Cameco is currently developing a license amendment application for the Brown Ranch property. Brown Ranch will be operated as part of the North Butte Remote Satellite facility and will consist of additional wellfield areas only. The Ruby Ranch site will be a standalone satellite facility comprised of an IX processing facility, wellfields and associated waste water disposal facilities once it has been permitted and amended into SUA-1548. Current market conditions preclude the development of this</p>

	<p>project before 2021. Cameco also has a property in the Shirley Basin area of Wyoming (not associated with this license application) with plans to amend it into the license when market conditions improve. This site will also be a standalone satellite/wellfield facility similar to the current North Butte and proposed Ruby Ranch facilities.</p> <p>These plans could change depending on market conditions or business strategy. Cameco will remain in contact with NRC concerning future development plans and provide updates as necessary. No revisions have been made to the ER or TR as a result of this comment.</p>
<p><b>Land Use</b></p>	
<p><b>RAI LU-1</b></p> <p><b>Please clarify the extent and timing of all surface area disturbances resulting from activities at each Smith Ranch Project site for each ISR process phase.</b></p> <p>A. Please identify the anticipated locations for the various individual surface disturbances during the proposed license renewal period. Each disturbance area should be described thoroughly and consistently. Please identify the reason for these disturbances (e.g., well or wellfield construction, access road development); the respective maximum area (lateral extent) of each individual or related disturbance; the ISR phase during which these disturbances would occur; and the anticipated length of time that each area of disturbance would occur.</p> <p>B. For each area of disturbance, include description of the specific structures and other components of the Smith Ranch Project whose construction and operation would cause surface disturbance. Include short-term and long-term areas of disturbance for each</p>	<p><b>CAMECO RESPONSE:</b></p> <p>A. ER Sections 4.1.1 and 4.1.1.1 through 4.1.1.4 detail the surface disturbance areas and general locations, reasons for disturbances, areas of each disturbance, and the time horizon for each disturbance. Additionally, please refer to Response to RAI CI-1 for further discussion of time horizons for disturbances, areas of disturbance, and reasons for disturbances. Text from WDEQ Appendix D1 has been added to ER Section 4.1.1 which further describes the disturbance area, acreage, and associated time horizons for each site.</p>

<p>component of the proposed Smith Ranch Project.</p> <p>The ER describes the area disturbed at each site in different terms. At the North Butte and Gas Hills sites, the area of disturbance is described (1) over the total lifecycle of the Proposed Action and (2) as the maximum disturbance at any single point in time. For the Smith Ranch and Highland sites, the area of disturbance is identified only over the total lifecycle of the Project. For the Reynolds Ranch site, the WDEQ permit identifies land disturbance as short term (less than one year) or long term (greater than one year). However, the ER does not identify short-term and long-term areas of disturbance for each component of the proposed Smith Ranch Project.</p> <p>For the EA to assess impacts to land use, soils, cultural resources, and to other resource areas, please identify surface disturbances by area removed from other land uses, and please include any land with soil disturbance in the assessment of both land-use and soils impacts. In contrast, any land that would be fenced off and would have no surface disturbance, and thus not be impacted by Project activities, should be identified for the land-use impacts assessment.</p> <p>Further, the areas of disturbance should be further divided into areas associated with (1) processing facilities, (2) wellfields, and (3) access roads and pipelines outside the processing-facility and wellfield areas. The ER and the TR do not consistently identify the associated area of disturbance or the extent of fenced areas during the construction and operation of the proposed Smith Ranch Project, including all wellfields, buildings and other structures, surface impoundments, parking and storage areas, roads, and utility corridors. This information will be used by NRC in its evaluation of impacts related to surface disturbance associated with the Smith Ranch Project.</p>	<p>B. ER Sections 4.1.1 and 4.1.1.1 through 4.1.1.4 of the February 2012 NRC submittal detail the surface disturbance areas for Smith Ranch/Highlands/Reynolds Ranch, North Butte, Gas Hills, and Ruth Satellite areas in the same terms: 1) total area, 2) total area to be disturbed over the life of the mine, and 3) existing disturbed area. Please see response to LU-1 part A for incorporation of WDEQ text.</p> <p>TR Sections 7.1.2 and 7.2.3 explore the Potential Land Use Impacts of Construction and Operations, respectively, including the impacts of areas fenced off with no surface disturbance.</p> <p>See response to A. and see ER Section 4 for explanation of disturbance and analysis of impact by resource area. Areas removed from other land uses are long term disturbances which are discussed in Sections 4.1.1.1 through 4.1.1.4. The acreages associated with each of the following categories are included: wellfields; mine units, monitor wells, pipelines and utility trenches; uranium recovery satellites, processing facilities, mine unit header houses, pump stations, powerline corridors, and access roads.</p>
<p><b>RAI LU-2</b></p> <p><b>Please provide a map showing inhabited residences located within each Smith Ranch Project site's boundary or within 8 km (5 mi) of that boundary, and clarify the status and</b></p>	<p><b>CAMECO RESPONSE:</b> Additional information pertaining to the ranches (inhabited residences) located within the Smith Ranch Project sites or within 8 km (5 mile) radius of</p>

<p><b>locations of identified properties beyond the 8-km (5-mi) radius.</b></p> <p>The ER identifies the Vollman Ranch (located within the Smith Ranch site boundary), the Pfister Ranch (located about 0.5 mi south of the North Butte site boundary), and the JE Ranch (located about 12 miles northeast of the Gas Hills site boundary) as occupied residences. The ER and TR also identify the Fowler Ranch, the Duck Creek Ranch, and the Boner Ranch as being in the vicinity of the Smith Ranch site. It is not clear if these ranches are inhabited. Figure 5.7 in the TR shows the locations of air monitoring stations for the Smith Ranch site, with stations at the Vollman Ranch and Fowler Ranch indicated by stars. The Duck Creek Ranch and the Boner Ranch are not shown. There are no figures to show the locations of the Pfister Ranch or the JE Ranch. Therefore, please provide a map showing the locations of inhabited residences within 8 kilometers (km) [5 miles (mi)] of each project site's boundary, and clarify the status and distances of the ranches identified in the ER/TR if located outside the 8-km (5-mi) radius.</p>	<p>the license boundary is provided in Sections 3.1.6, 3.1.7 and 3.1.8 of the ER. Maps that show the location of the ranches are provided as Figures 3.1.4 (Smith Ranch Ownership), 3.1.6 (North Butte Ownership), and 3.1.8 (Gas Hills Ownership).</p>
<p><b>Transportation</b></p> <p><b>RAI TR-1</b></p> <p><b>Please provide additional information on the estimated vehicular traffic volumes at each Smith Ranch Project site during all ISR process phases.</b></p> <p>A. Please provide the current frequency of all deliveries and shipments (e.g., of process chemicals, fuels, byproduct materials, wastes, and yellowcake) during the operation of the Smith Ranch site.</p> <p>B. Please identify the anticipated increase in these Smith Ranch site deliveries and shipments resulting from all proposed Project activities, including the proposed increase in uranium production at the Gas Hills and North Butte sites.</p> <p>C. For the Gas Hills and North Butte sites, please confirm that the employee-vehicle volumes during operation at these sites is sufficient to base an impacts analysis on for the construction, aquifer restoration, and decommissioning phases, or please provide specific data for these process phases.</p> <p>D. For the Smith Ranch site, please confirm that the employee-vehicle volume during operation is sufficient to base an impacts analysis on for the aquifer restoration, and</p>	<p><b>CAMECO RESPONSE:</b></p> <p>A. Table 3.2-1 (SR Material Shipments table) has been added to ER Section 3.2.1 to show the delivery shipment frequency for Smith Ranch</p> <p>B. Table 3.2-2 (NB projected shipments table) has been added to ER Section 3.2.2 to show the trend for North Butte's estimated shipments for the next 20 years. These shipments from North Butte to Smith Ranch are based on North Butte's highest predicted flow and production rates. Due to similar production estimates, the production and shipment estimates used for North Butte can be used to anticipate the Gas Hill's production values when the project becomes operational. These estimates will be updated</p>

<p>decommissioning phases, or please provide specific data for these process phases.</p> <p>In Sections 3.2.1, 3.2.3, and 4.2.1 of the ER, information is provided regarding employee-vehicle and passenger-car traffic volumes during the Proposed Action at all Project sites; however, information is not provided regarding the expected traffic volumes during other Project phases (i.e., construction, aquifer restoration, and decommissioning) at the Gas Hills and North Butte sites. These could be different than during the sites' operation.</p> <p>Additionally, although information is provided about the number of shipments of uranium-laden and barren-eluted resins as noted in Section 4.2.1 of the ER, the numbers of any other deliveries and the shipments of yellowcake are not detailed. Please provide information concerning these deliveries and shipments, as these shipments would use several State and local roads. NRC requests this additional information in order to evaluate potential impacts to these roads by Project-related transportation.</p>	<p>when the Gas Hills project becomes closer to production. Text has also been added to ER Section 4.2.1.</p> <p>C. Cameco confirms that traffic volume will be at it maximum volume during operations and recommends employee-vehicle volumes data be carried over to base an impacts analysis on during construction, restoration, and decommissioning phases.</p> <p>D. Cameco confirms that traffic volume will be at it maximum volume during operations and recommends employee-vehicle volumes data be carried over to base an impacts analysis on during construction, restoration, and decommissioning phases.</p> <p>Table 3.2-1 (SR Material Shipments Table) has been added to show the delivery and shipment frequency for Smith Ranch. Various types of process chemicals, fuel, byproduct and waste, and yellowcake are all included in the table.</p>
<p><b>RAI TR-2</b></p> <p><b>Please provide additional information related to current traffic-volume data on local roads for all Smith Ranch Project sites.</b></p> <p>A. For the Smith Ranch site, please provide the best-available, current traffic-count data for Converse County Road 31, 762 Ross Road, Highway 93, and Highway 95.</p> <p>B. For the Gas Hills site, please provide best-available, current traffic-count data for Gas Hills Road.</p> <p>C. For the North Butte site, please provide best-available, current traffic-count data for</p>	<p><b>CAMECO RESPONSE:</b> The text of Section 3.2 of the ER has been changed to include the traffic volumes for the roads and highways requested.</p>

<p>Highway 50, Van Buggenum Road, and Christensen Road.</p> <p>Vehicles related to the construction, operation, aquifer restoration, and decommissioning at the Smith Ranch Project would use nearby highways and local roads. However, although information is provided for current traffic counts on some roads in Section 3.2 of the ER, the current traffic on all of the roads listed above is not discussed. In order for the NRC to evaluate the potential impacts to these roads and the surrounding environment, additional information is needed regarding current traffic volumes.</p>	
<p><b>RAI TR-3</b></p> <p><b>Please discuss the location(s) at which all toll-milling shipments of uranium-loaded ion-exchange (IX) resin or slurried yellowcake would be accepted, and provide additional information regarding the number of shipments and respective quantities.</b></p> <p>A. Please confirm that both the Smith Ranch CPP and the Highland Central Processing Facility (CPF) would accept and process toll-milling shipments.</p> <p>B. Please indicate whether all toll-milling shipments were included in the projected traffic counts on Section 4.2.1.1 of the ER. If not, please provide additional data on the anticipated number of trucks per month for all toll shipments to each respective receiving facility. For example, please specify the total number of such toll-milling shipments and their respective expected volumes by material (e.g., uranium-loaded IX resin and/or slurried yellowcake), to each facility (i.e., the CPP and the CPF). Please specify this information for the Proposed Action (i.e., the proposed conditions) and for continued operation under the existing license (i.e., the current conditions).</p> <p>Section 1.5 of the TR states that “SUA-1548 currently allows Cameco to receive and process up to 365 third party shipments of loaded IX resin at the CPP per calendar year.” This TR section also indicates that Cameco plans to receive third party shipments of loaded IX resin from other licensees at the refurbished Highland Central Processing Facility (CPF). Additionally, Cameco is requesting that the NRC reauthorize the refurbished Highland CPF to receive slurried source material from third party licensees (toll processing) for the purpose of drying, packaging, and transporting the material to a uranium conversion facility on their behalf. As a part of the NRC’s environmental-impact analysis, including transportation impacts, the information requested above is needed.</p>	<p><b>CAMECO RESPONSE:</b></p> <p>A. As detailed in TR Section 1.2, it is anticipated that the Smith Ranch CPP and/or the Highland CPF will accept and process toll milling shipments of slurry and/or loaded resin.</p> <p>B. All toll milling shipments were included in the projected traffic counts detailed in ER Section 3.2. Text has been added to ER Sections 3.2.1 and 4.2.1.1 clarifying this.</p>

<b>Geology</b>		
<b>RAI GEO-1</b>		
<p><b>Please provide information on the thickness of the confining layer below the 30-Sand unit that separates the 30-Sand unit from the Cloverly Formation in the southern portion of the Gas Hills site (i.e., Mine Unit 3).</b></p> <p>Section 3.3.3.3 of the ER describes the geology of the southern portion of the Gas Hills site (i.e., Mine Unit 3). The ER section also notes that the Cloverly Formation is considered an aquifer and that it is separated from the 30-Sand by confining units within the Wind River Formation. This arrangement is illustrated in the cross-section shown on Plate D5-3 in Appendix 5-D of the WDEQ Permit No. 687 Update. However, the estimated thickness of the confining layer is not provided. This information is requested for the NRC's impact analysis of the Gas Hills site.</p>		<p><b>CAMECO RESPONSE:</b> As shown on Cross Sections H-H' and J-J' in Appendix D5 of the Gas Hills WDEQ permit application, the 30-Sand within Mine Unit 3, as currently defined, is not underlain by the Cloverly Formation. It is underlain by thick sequences of shale and mudstone of the Upper Wind River, Thermopolis, Morrison, and Frontier formations. Section 3.3.2.3.3, subsection Mine Unit No. 3 has been revised to clarify the geologic sequences underlying Mine Unit 3. Additionally, as discussed in Section 3.12.5 of the Operations Plan contained in the WDEQ permit application, geologic investigations performed to date within Mine Unit 3 have found no underlying aquifers within 100 feet of the bottom of the 30-Sand. Additional geologic investigations will be performed during the mine unit development for Mine Unit 3. This language has also been added to the Mine Unit No. 3 subsection of ER Section 3.3.2.3.3</p>
<b>Water Resources</b>		
<b>RAI WR-1</b>		
<p><b>Please provide additional information on project-related, non-production water uses (e.g., domestic, equipment washing, dust control, irrigation) during all ISR process phases. This information should address the facilities and wellfields currently in operation (i.e., Smith Ranch site) and those not yet in operation (i.e., Gas Hills and North Butte sites).</b></p> <p>A. Please describe the current volumes of project-related, non-production water use for each Smith Ranch Project site and the estimated volumes for each site under Cameco's</p>		<p><b>CAMECO RESPONSE:</b> Surface water is not used at any of the Smith Ranch Project sites for any project related production or non-production water usage. Sections 3.4.2.1.2, 3.4.3.1.2, 3.4.4.1.2, 3.4.4.2.6, 3.4.5.1.2, 4.4.1.1.1, 4.4.1.1.2, and 4.4.1.2.1 of the ER have been revised to more clearly describe surface water use.</p>



<p>proposed license renewal changes.</p> <p>B. Please identify the source(s) of the volumes of water estimated in response to item A above, including the location(s) of the source(s) and the aquifer zone(s) targeted if ground water would be used.</p> <p>Sections 3.4 and 4.4 of the ER identifies surface water use at the Smith Ranch Project sites for livestock and wildlife watering, but does not address project-related, non-production water usage. This information is requested so that the NRC can accurately assess all water-resource impacts of the Smith Ranch Project.</p>	<p>Approximately one million gallons of water are utilized each year at the Smith Ranch Project site for non-production uses, which includes sanitary uses, non-process equipment cleaning, office cleaning, etc. The source of the water is groundwater that is obtained from Wyoming State Engineer's Office (WSEO) permitted water wells that are completed in non-uranium bearing sand units within the upper Fort union or lower Wasatch formations. Water wells used range in depth from 460 feet to 865 feet. The quality of the water used meets use suitability for WDEQ/WQD Class III (livestock) quality or better. Drinking water is obtained from a commercial water bottling supplier. Section 3.4.2.2.7 of the ER has been revised accordingly</p> <p>For the North Butte Remote Satellite site, it is estimated that maximum non-production water use will total between approximately 500,000 and 1 million gallons per year during the life of the project. The water is obtained from a WSEO permitted water well completed in a non-uranium bearing sand unit within the lower Wasatch formation. The well operates as a small public water supply and is permitted as such under the requirements of WDEQ/WQD Rules and Regulations Chapter 12. The well is 390 feet deep and is screened from 290 to 390 feet. Drinking water is obtained from a commercial water bottling company. Section</p>
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	<p>3.4.3.2.8 of the ER has been revised accordingly</p> <p>Although unknown at this time, it is anticipated that the non-production water use at the Gas Hills Remote Satellite site will be similar to the Smith Ranch site, or approximately one million gallons per year. The water used will be obtained either from a well completed in a non-uranium bearing sand unit of the Wind River Formation or from an external bulk water supplier. Drinking water will be obtained from a commercial water bottling company. Section 3.4.4.2.6 of the ER has been revised accordingly.</p>
<p><b>RAI WR-2</b></p> <p><b>Please provide additional information on the storm-water management approaches and proposed storm-water management infrastructure for each Satellite area.</b></p> <p>A. Please provide a general description of the storm-water management approaches (e.g., infiltration, evaporation, detention, or dispersion) that have been and would be implemented at each of the Smith Ranch Project sites.</p> <p>B. Please provide a figure illustrating the current and anticipated layout of each Smith Ranch Project site, including proposed waste-management surface impoundments, other storm-water-management infrastructure, and any surface-water drainages to which storm water(s) would be discharged.</p> <p>C. Please discuss the best management practices (BMPs) that are used currently or would be implemented at each Smith Ranch Project site for storm water management.</p> <p>As noted in Section 4.12.1.1 of the ER, storm-water management approaches would be implemented as required by the WDEQ, where "facility drainage is designed to route storm water away or around buildings, ancillary buildings and parking areas, chemical and fuel</p>	<p><b>CAMECO RESPONSE:</b> With respect to A and C, Sections 3.8.3 and 7.2.7.2 of the TR have been revised to provide a detailed description of the types of BMPs that are used at Smith Ranch Project sites and how and when they are used. New Table 3-19 and new Figure 3.41 have been added to the TR, which illustrate the types of erosion control and BMPs that are used at Smith Ranch Project sites. With respect to B, TR Figures 3.18, 3.20, 3.22, 3.23, 3.25, 3.27, 3.29, and 3.31 show topsoil protection and erosion controls, as applicable for each of the Smith Ranch contiguous satellite facilities. New TR Figures 3.18.1A and 3.18.1B show permanent BMPs in place at Smith Ranch while new TR Figure 3.18.2 shows BMPs in place at the</p>

<p>storage areas.” In addition, both the TR and ER discuss that BMPs would be implemented through a storm water pollution prevention plan (SWPPP) approved by the WDEQ. However, the specific BMPs in the current SWPPP for operation of the Smith Ranch site or those proposed for the respective satellites are not discussed. The NRC requests this information in order to discuss the potential for and mitigation of environmental impacts related to storm water at the Smith Ranch Project.</p>	<p>North Butte Remote Satellite. Satellite and mine unit planning for the Gas Hills Remote Satellite has not advanced to the point that BMPs can be proposed.</p>
<p><b>RAI WR-3</b></p> <p><b>Please provide additional information on the Cameco’s approach to plugging historical, improperly abandoned drillholes and wells.</b></p> <p>A. Please estimate the number of drillholes and wells that have not been abandoned properly that may exist within proposed wellfields of the Smith Ranch Project.</p> <p>B. Please describe how the drillhole- and well-abandonment approach described in Section 3.4.3 of the TR would ensure that all improperly abandoned drillholes and wells within each wellfield would be identified and abandoned properly.</p> <p>Section 2.4.1.3 of the GEIS notes “improperly abandoned exploration drill holes” can cause an excursion of lixiviant from the ore zone. Excursions could impact water quality in adjacent aquifers and outside the exempted ore-zone aquifer. Section 3.5.2.10 of the TR describes the computer database that lists information on all known exploration and mine development drill holes (more than 40,000) completed by previous mineral owners and Cameco within the SUA-1548 License areas. Information on the abandoned drill holes for Smith Ranch, North Butte, and Gas Hills are provided in Appendix D of the their respective Permit-to-Mine application submitted to WDEQ. Yet, Section 3.0 of the TR notes that a Section 3.5.2.10 should include a discussion on how Cameco would handle potentially leaking historical exploration drillholes, but the discussion is missing. Further, Section 3.4.3 presents Cameco’s approach to identifying and properly abandoning old holes as part of interpreting aquifer-pumping test results, but it is not clear if this activity would ensure that <i>all</i> improperly abandoned holes within each wellfield would be identified and abandoned properly. An estimate of the number of improperly abandoned drillholes and wells will support NRC’s evaluation of the potential for excursions.</p>	<p><b>CAMECO RESPONSE:</b> Section 3.0 of the TR has been revised to indicate that the approach for detecting and properly abandoning potentially improperly abandoned drill holes and wells is in Section 3.4.3 of the TR. Section 3.4.3 has been expanded to provide additional information related to Cameco’s methodology for detecting improperly abandoned drill holes and wells. This methodology has been approved by the WDEQ/LQD for the Smith Ranch Project sites.</p> <p>Cameco maintains a computer database for each project site that lists the coordinates, elevation, depth drilled and completion date of all known exploration and mine development drill holes completed by previous operators and Cameco. Appendix D5 of the WDEQ permit application for Smith Ranch-Highland, North Butte and Gas Hills properties provides a listing of these drill holes. As stated in Section 3.5.2.10, there are more than 55,000 known abandoned drill holes located within the Smith Ranch Project license areas, some dating back to the late 1950s. Although the listings are exhaustive,</p>

	<p>there is no guarantee that they are 100% complete. There is really no way of knowing for certain how many of these older drill holes were or were not properly abandoned. This is why Cameco, together with LQD, developed the methodology described in Section 3.4.3 of the TR.</p>
<p><b>RAI WR-4</b></p> <p><b>Please provide an evaluation of the potential interaction between the Underground Injection Control (UIC) deep-injection waste-disposal wells at each Smith Ranch Project site and the development of oil and gas reserves in the Smith Ranch Project region, as well as the potential for the deeply injected fluids to reach the surface through other mineral-extraction wells.</b></p> <p>A. Please identify whether there are any developed or undeveloped oil and gas reserves at similar depths and/or geologic formations as the UIC deep-injection wells' completion intervals near each of the current and proposed injection-well locations. This information should be provided for each Project site.</p> <p>B. Please evaluate the potential for deep well injection fluids to be captured by nearby oil and gas wells at each Project site, and provide an assessment of the minimum safe distance between UIC deep-injection wells and those related to current or future oil- and gas-production efforts.</p> <p>C. Please address the potential for Cameco's development and use of deep-injection wells to restrict the development of oil and gas fields in the vicinity and/or the potential that oil and gas development to restrict the installation or use of Project-related deep-injection wells.</p> <p>As discussed in Section 2.1.4.2 of the ER, existing and proposed UIC deep-injection wells are, or would be, completed at a depth of 9,000 – 10,000 feet (ft) below the ground surface. The ER also notes that currently authorized deep disposal wells for the Smith Ranch site target the Parkman, Teapot, and Teckla Formations.</p> <p>The requested information, regarding potential interactions between the wastes disposed of through Cameco's deep-injection wells at all Smith Ranch Project sites and any oil- and gas-</p>	<p><b>CAMECO RESPONSE:</b> A discussion of potential interference between UIC deep well injection and oil and gas production has been added to the TR as new Section 3.10.4.</p>

<p>production wells, is requested for the NRC to evaluate the potential for environmental impacts to local ground-water resources as well as to assess the cumulative impacts to water resources of the Smith Ranch Project.</p>	
<p><b>RAI WR-5</b></p> <p><b>Please provide an assessment of the impacts of Cameco's installation and use of UIC deep-injection wells to address the potential for the creation of preferential flow pathways and for induced seismicity.</b></p> <p>A. Please describe Cameco's previous experience with respect to hydraulic fracturing related to UIC deep-injection wells in the region of the Smith Ranch Project and describe where hydraulic fracturing could be employed during the Smith Ranch Project.</p> <p>B. Please provide an estimate of the vertical and horizontal extent of fracture propagation based on Cameco's experience in similar geologic conditions.</p> <p>C. Please discuss the potential for induced seismicity in areas where Cameco employs deep injection of waste-waters. Indicate whether induced seismicity is or is not probable due to the nature of the specific geologic setting or the proposed operating methods.</p> <p>Cameco explained during the NRC's site visit to the Smith Ranch Project sites that hydraulic fracturing would be used to improve the performance of UIC deep-injection wells. Accordingly, additional information regarding the use of hydraulic fracturing during UIC well installation and use is requested to evaluate the potential impacts to ground water in shallow aquifers outside of the exempted aquifer. Hydraulic fracturing during well installation and use may increase the potential for the creation of preferential flow pathways from the receiving formation that would allow injected fluids (i.e., wastes) to escape into shallower aquifers.</p> <p>Additionally, in some areas of deep waste-water or other fluids injection, seismicity appears to have been induced due to fractures in weak rock and/or lubrication of existing faults. Please provide a discussion of the potential for induced seismicity and the occurrence of induced seismicity in the Powder River and Wind River Basins, as appropriate to each Smith Ranch Project area. This information will support NRC's analysis of the potential environmental impacts from deep-well injection.</p>	<p><b>CAMECO RESPONSE:</b> A discussion of hydraulic fracturing with respect to UIC deep well injection has been added to the TR as new Section 3.10.4 including the following subsections: man-made migratory pathways related to wellbores and fractures and induced seismicity.</p>

<p><b>RAI WR-6</b></p> <p><b>Please provide additional information regarding the laboratory analysis of chemical constituents in filtered-water samples or unfiltered samples.</b></p> <p>A. Please identify the chemical constituents reported as total concentrations in unfiltered samples and the chemical constituents reported as dissolved concentrations in filtered samples.</p> <p>B. Please provide the basis(es) underlying Cameco’s decision to request analyses of some water-quality constituents on filtered-water samples and other constituents on unfiltered-water samples for all water-quality data reported and referenced in the ER and in the proposed monitoring plans and protocols.</p> <p>The reporting of water-quality constituents as dissolved (i.e., filtered) or total concentrations (i.e., unfiltered) is a key feature of the NRC’s evaluation of water-quality results. The decision to report these dissolved and/or total concentrations could be based upon regulations, rules, and/or other guidance from the U.S. Environmental Protection Agency (EPA) and the WDEQ as well as the NRC (for radiological parameters). A description of Cameco’s rationale for filtering or not filtering samples during collection or before chemical analysis is requested for the NRC to evaluate the water-quality data presented in the ER.</p>	<p><b>CAMECO RESPONSE:</b></p> <p>A. As directed by NRC Regulatory Guide 4.14, the following dissolved (filtered) and suspended or total (unfiltered) constituents were collected for surface water samples across all Cameco sites: lead 210, uranium, radium 226, thorium 230, polonium 210. ER Tables 3.4-1, 3.4-6, 3.4-9, and 3.4-11 organize the above constituents by “DISSOLVED”, “SUSPENDED”, and/or “TOTAL”.</p> <p>B. In addition to RG 4.14 dissolved and suspended radiometric requirements, ER Tables 3.4-6, 3.4-9, and 3.4-11 also include water quality constituents required by WDEQ Guideline 4 and Chapter 11 Regulations. These include ions, non-metals, and dissolved and total trace metals in addition to Gross Alpha and Gross Beta. Reference to both RG 4.14 and WDEQ Guideline 4 and Chapter 11 Regulations have been added to paragraph 2 of ER Section 3.4.2.1.2.</p>
<p><b>RAI WR-7</b></p> <p><b>Please provide additional information on the underlying aquifer referred to as the “1-Sand” at the North Butte site.</b></p> <p>A. Please confirm that there are no available water-quality data from the 1-Sand that can be used to describe the pre-licensing baseline water quality.</p> <p>B. Please explain how the 1-Sand would be used to monitor for vertical excursions.</p> <p>Section 3.4.3.2.7 of the ER notes that “Uranerz drilled and completed a well in the Lower aquitard, the 1 sand, as a part of Hydro Test NB2. In addition to serving as an observation well for the aquifer pump test, Uranerz planned to sample the well for water-quality analysis.</p>	<p><b>CAMECO RESPONSE:</b> The two separate accounts of unsuccessful sampling of the 1-Sand during Aquifer Test NB-2 are descriptions of a single event. Because the 1-Sand is so discontinuous and thin across the North Butte license area, Cameco and preceding operators have been unsuccessful in collecting enough water to provide adequate sample for analysis. As explained in Section 5.0 of Appendix D5 to the North Butte WDEQ permit application, very little</p>

<p>Uranerz was unable to obtain sufficient water from the 1 Sand aquifer to provide a representative sample.” The document referred to, North Butte Update Appendix D-6, submitted for WDEQ Permit 632, also indicated that Cameco drilled and completed a well in the Lower Aquifer 1-Sand as a part of Hydro Test NB2. In addition to serving as an observation well for the aquifer-pumping test, Cameco planned to sample the well for water-quality analysis. Due to the fact that the 1-Sand is so poorly developed and discontinuous, however, Cameco indicated that it was not possible to pump the well long enough to retrieve a representative ground-water sample.</p> <p>In addition to these accounts of unsuccessful attempts at retrieving ground-water samples, there is no report of water-quality data from the 1-Sand or from any other aquifer underlying the production sand units. Section 3.4.3.2.5 of the ER summarizes the aquifer properties of the aquitard between the lowest production sand (i.e., “A”) and the 1-Sand, but no characterization of the hydraulic properties of the 1-Sand is provided.</p> <p>Given the unsuccessful sampling from the 1-Sand and the lack of hydraulic characterization of the 1-Sand, a discussion of how the 1-Sand can serve to monitor for vertical excursions is needed to evaluate the potential for water-quality impacts at the North Butte site. Also, please confirm that the accounts of unsuccessful sampling of the 1-Sand contained in the two documents (those quoted above) are descriptions of a single event.</p>	<p>geological information exists for the A-1 Aquitard and the underlying 1-Sand. Based on the available information and stratigraphic modeling tools, Cameco estimates that the A-1 Aquitard thickness is approximately 70 to 140 feet and the 1-Sand thickness is approximately 0 to 40 feet. During the North Butte permitting process, Cameco met with WDEQ/LQD to discuss the 1-Sand data. Because of the 1-Sand’s thinness and discontinuous nature, Cameco committed and LQD agreed that Cameco would investigate the A-1 Aquitard and the underlying 1-Sand during each mine unit delineation drilling program. LQD agreed that if the A-1 Aquitard within any mine unit is determined to be 50 feet thick or more, underlying monitor wells would not be required. Section 3.5.1.2 of the ER has been revised to include this agreement language.</p>
<p><b>RAI WR-8</b></p> <p><b>Please provide water-quality data tables itemized below.</b></p> <p>A. Please provide clearly readable data tables from the ER:</p> <ul style="list-style-type: none"> <li>■ Table 3.4-6, North Butte Surface Water Quality Data within 2 Kilometers</li> <li>■ Table 3.4-9, North Butte Groundwater Quality Results</li> <li>■ Table 3.4-11, Gas Hills Surface Water Quality</li> <li>■ Table 3.4-14, Gas Hills Historic Water Quality Data.</li> </ul> <p>B. Please provide a clearly readable data table from the WDEQ Permit 632 Update:</p> <ul style="list-style-type: none"> <li>■ Table D6-1.2, North Butte Production Well Water Quality Summary.</li> <li>• The quality of the data tables provided in support of the license-renewal application is poor, and they are extremely difficult to read and sort, either on a</li> </ul>	<p><b>CAMECO RESPONSE:</b> As requested, all ER tables have been included with larger font size and have been updated with water quality data available through the third quarter of 2011 for all surface water sampling sites available at that time.</p>

<p>computer screen or printed form. Please provide the following tables in electronic form or in a legible tabular format. These data are requested for permit the NRC to assess the impacts of the Smith Ranch Project on water quality.</p>	
<p><b>RAI WR-9</b></p> <p><b>Please provide additional information regarding formal wetland delineations at the Gas Hills satellite.</b></p> <p>Section 3.5.5 of the ER indicates that wetlands have not been delineated at the Gas Hills site, but such delineation would occur, should direct wetland disturbance be proposed as activities at that site become more clearly defined. The U.S. Bureau of Land Management's (BLM's) <i>Draft Environmental Impact Statement</i> (DEIS) for the Gas Hills site also does not discuss any wetland delineations that have been completed. Please specify how Cameco would determine that wetland disturbance would occur, without having completed a delineation of existent wetlands. This information is requested to allow the NRC to assess potential impacts to water and wetland resources as a result of the Smith Ranch Project.</p>	<p><b>CAMECO RESPONSE:</b> The Gas Hills WDEQ Permit No. 687 update (Oct 2009) details potential wetlands based on vegetation characteristics on Plate D8-1 and the associated methodologies in Appendix D11. The purpose of that initial survey was to identify all areas of potential wetlands within the proposed permit area. In addition to the areas identified by vegetation characteristics, surface and/or groundwater reservoirs in the area may also represent wetlands. Prior to any disturbance, a jurisdictional determination of wetlands will be completed in cooperation with the USACE. If a determination is made, then Cameco will act in accordance with Nationwide 14 permitting. No edits were made to the text.</p>
<p><b>Ecological Resources</b></p>	
<p><b>RAI ECO-1</b></p> <p><b>Please provide the methodologies for and concise, detailed summaries of the results of previous ecological surveys (i.e., surveys that inventory the specific vegetation, wildlife, and aquatic species that appear in a specific area) for all Smith Ranch Project sites.</b></p> <p>The ER references appendices to various WDEQ permits in its discussion of ecological impacts of the Smith Ranch Project. For example, the ER references appendices to the WDEQ's Permit-to-Mine (e.g., Appendix D-8), but it does not provide concise, detailed summaries of previous ecological surveys, including methodology, for each site under the Smith Ranch Project. In addition, the historical and current information provided is not sufficiently tabulated to allow for efficient analytical review. Detailed summaries of ecological-resource inventories and</p>	<p><b>Cameco Reponse:</b> Detailed summaries of ecological surveys performed at North Butte, Smith Ranch Highland/Reynolds Ranch and Gas Hills may now be found as Appendix A.1 of the ER.</p>



<p>surveys should be provided that include all results of past, current, and proposed vegetation, wildlife, and aquatic surveys at all Smith Ranch Project sites. The NRC requests this information to evaluate the ecological impacts of the Smith Ranch Project.</p>	
<p><b>RAI ECO-2</b></p> <p><b>Please provide additional information related to local vegetation types.</b></p> <p>A. Please provide the results of the updated vegetation survey for the Smith Ranch site, which was reported to have commenced in the spring of 2011. Information identified in Appendix D-8 of the WDEQ's Permit-to-Mine does not contain the correspondence and the methodology information as referenced in Section 3.5.1 of the ER.</p> <p>B. Please clarify whether any Federally-protected species were identified anywhere within each of the Smith Ranch Project sites and, if present, how the uranium-recovery activities during each Project phase proposed for the respective area(s) would impact these species.</p> <p>Section 3.5.1 of the ER indicates that an updated vegetation survey, which commenced in the spring of 2011, has been completed. Correspondence with the Wyoming Game and Fish Department (WGFD) and U.S. Fish and Wildlife Service (USFWS) regarding the updated vegetation survey is referenced in ER Section 3.5.1. Appendix D-8 of WDEQ's Permit-to-Mine does not contain this updated survey. Section 2.2.8 of the TR indicates that the 2011 vegetation survey included a survey for Federally-listed species, including the Ute ladies'-tresses orchid (<i>Spiranthes diluvialis</i>) and blowout penstemon (<i>Penstemon haydenii</i>). The NRC requests this information for its evaluation of the impacts of the Smith Ranch Project on ecological resources.</p>	<p><b>CAMECO RESPONSE:</b> The 2011 vegetation report conducted at the Smith Ranch site is provided with this submittal for insertion into your copy of WDEQ Appendix D8 behind the "Supplemental Information" tab.</p> <p>The 2011 Smith Ranch report focused on vegetation types, rare plants and noxious weeds. No suitable habitats were found for the Ute ladies'-tresses or blowout penstemon nor were any plants identified. Likewise, no T&amp;E plant species were identified at the North Butte and Gas Hills remote satellite sites.</p>
<p><b>RAI ECO-3</b></p> <p><b>Please provide additional information related local wildlife, including the updated wildlife survey for the Smith Ranch site, which was reported to have commenced in the spring of 2011.</b></p> <p>Section 3.5.2 of the ER states that Cameco is currently updating its wildlife surveys, commencing in the spring of 2011. Appendix D-9 of the WDEQ permit also indicates that Cameco is updating its wildlife surveys. This updated information is necessary for the NRC to evaluate the impacts from past and present uranium-recovery activities, as this information</p>	<p><b>CAMECO RESPONSE:</b> The results of the Smith Ranch-Highland-Reynolds wildlife survey commencing in spring 2011 and associated documents have been provided with this submittal for insertion into your copy of the WDEQ Appendix D9. Section 3.5.2 of the ER has been revised to include this report.</p>

<p>can be a useful predictor of potential future impacts to wildlife resources.</p>	
<p><b>RAI ECO-4</b></p> <p><b>Please provide additional information regarding the relative performance of Cameco's site-reclamation efforts and its related monitoring of areas where vegetation restoration has been completed (i.e., at the Smith Ranch site).</b></p> <p>Section 3.5.1.4 of the ER indicates that vegetation reclamation is an ongoing process wherever land disturbance has occurred. Section 4.5.1.1.1 of the ER further states that "ongoing re-vegetation efforts are successful and typically restore a robust vegetative cover within the first and second growing season." Please provide additional information that supports this evaluation of the performance of re-vegetation activities, as defined by the monitoring methods (which should be included), and that supports that past reclamation activities would be a sound predictor of future re-vegetation efforts. The respective areas of disturbance should be defined; the reclamation (i.e., re-vegetation) techniques should be described; and the success of these mitigation measures should be discussed. The NRC requests this information because historical reclamation efforts could provide a sound predictor of long-term impacts and mitigation-measure success, and this information could assist the Commission in its evaluation of the ecological impacts and mitigation of those impacts at the Smith Ranch Project.</p>	<p><b>CAMECO RESPONSE:</b> Vegetation reclamation is undertaken after short-term disturbances have occurred and at the point of final reclamation for long-term disturbances. Reclamation techniques can be found in TR Section 6.2.4, while reclamation goals, performance criteria, and evaluation methods are detailed in the Smith Ranch WDEQ Reclamation Plan Section 3.5.3. Monitoring methods are consistent with baseline collection methods for comparative analysis. Methods are detailed in WDEQ Appendix D8, Addenda to D8, and WDEQ LQD Guideline 2 Vegetation. Please see response to LU-1 for discussion of respective areas of disturbance. Text has been revised at the end of paragraph 1 ER Section 4.5.2.1.1 to include the above references.</p>
<p><b>Air Quality</b></p>	
<p><b>RAI AQ-1</b></p> <p><b>Please provide best-available recent meteorological data for the onsite and offsite monitoring stations described in the ER and the TR, especially those data acquired since the license-renewal application was submitted.</b></p> <p>C. Please update the meteorological data from the Smith Ranch Project sites with the latest twelve months of best-available data. These data should include temperature, precipitation, wind, evaporation, and severe weather.</p> <p>D. Please compare these data to recently collected regional meteorological data and discuss the representativeness of regional meteorological conditions to those of the Smith Ranch Project sites.</p>	<p><b>CAMECO RESPONSE:</b> ER appendices B, C, and D have been updated with the meteorological analyses through mid-2012 for Smith Ranch, North Butte and Gas Hills, respectively. Sections 3.6.2, 3.6.3, and 3.6.4 of the ER have been revised accordingly. Likewise, Sections 2.2.5, 2.3.5 and 2.4.5 of the TR have also been revised to reference the meteorological analyses provided in the ER. Section 3.6.5 of the ER and Section 2.5.5 of the TR remain unchanged as an onsite meteorological station is not anticipated to</p>

<p>The data presented in Section 3.6 of the ER and Sections 2.2.5, 2.3.5, 2.4.5, and 2.5.5 of the TR may need to be updated. Cameco committed in its ER (Section 3.6) and the TR (Section 2.3.5) to provide these data as a supplement to its license-renewal application. The use of complete and best-available data is requested for the NRC to characterize existing conditions at all Project sites and to estimate the respective climate-change and air-quality impacts of the Smith Ranch Project.</p>	<p>be installed at the Ruth site during the next license renewal period.</p>
<p><b>RAI AQ-2</b></p> <p><b>Please provide best-available air-quality data, including data for air-quality-related values in ambient air as well as those related to climate change (e.g., deposition, visibility, and greenhouse gases) for all Smith Ranch Project sites.</b></p> <p>A. Please provide additional air-quality information as described below:</p> <ul style="list-style-type: none"> <li>i. Please provide best-available and/or most recent (i.e., the last twelve months, the current conditions) ambient air-quality data collected from the monitoring stations used for the Smith Ranch Project, including nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), carbon monoxide (CO), volatile organic compounds (VOCs), ozone (O<sub>3</sub>), particulates less than 10 microns in diameter (PM<sub>10</sub>), and particulates less than 2.5 microns in diameter (PM<sub>2.5</sub>).</li> <li>ii. Please provide data for parameters that pertain to climate change, including atmospheric deposition, visibility, and greenhouse-gas production.</li> <li>iii. Please provide concentration data for all other pollutants of concern (e.g., criteria gaseous pollutants) at the Smith Ranch Project sites, as available.</li> </ul> <p>B. Please compare the current data to recently collected regional meteorological data from offsite air-quality stations to determine the representativeness of regional conditions to Smith Ranch Project site conditions.</p> <p>The data requested above should include the respective data from each Project monitoring station. The NRC will use this information to assess the air-quality impacts of the Smith Ranch Project.</p>	<p><b>CAMECO RESPONSE:</b> Cameco does not monitor for air pollutants included in the National Primary and Secondary Ambient Air Quality Standards (NAAQS), as promulgated in 40 CFR Part 50.</p> <p>The NAAQS and Wyoming Ambient Air Quality Standards (WAAQS) set upper limits for concentrations of specific air pollutants at all locations that have public access. WDEQ, Air Quality Division (AQD) limits incremental emissions increases to specific levels defined by the classification of air quality in an area. The prevention of significant deterioration (PSD) rules is designed to prevent deterioration of air quality and to limit incremental increases in concentration of nitrogen dioxide, sulfur dioxide, and particulate matter less than 10 microns in diameter (PM<sub>10</sub>) to a legally defined baseline level based on the area's classification. PSD Class I areas include areas with special natural, recreational, scenic, or historic value (national parks or wilderness areas) and have the most stringent set of allowable increments. No PSD Class I areas were identified within or near the Smith Ranch</p>

facilities. The Smith Ranch project areas are all located in PSD Class II areas and are designated as attainment for all NAAQS and WAAQS. Areas are designated as attainment if atmospheric concentrations for a particular pollutant meet NAAQS and WAAQS.

Again, no site-specific ambient air quality data for the Smith Ranch project areas are available, but the regional air quality complies with applicable local, state, and national air quality rules and regulations. Regional ambient air quality standards were provided by WDEQ/AQD (new Table 4.6-1) and the Division provides an annual summary of the air quality monitoring results for all monitoring stations. A review of the *Wyoming Ambient Air Monitoring Annual Network Plan 2011* data collected at the AQD monitoring stations through 2010 shows that all monitors are attaining NAAQS for PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>2</sub>, SO<sub>2</sub>, and CO. Currently, all of the AQD monitors, except for Boulder (Sublette County), are attaining the NAAQS for ozone. The primary potential airborne pollutant within the Smith Ranch project areas is particulate matter in the form of fugitive dust generated from natural and human sources. The WAAQS and NAAQS limits, ambient air quality data for the region, and PSD I and II increments are presented in new Table 4.6-1.

Section 4.6.1.2 of the ER has been revised to include a discussion of Smith Ranch and

	regional air quality data and new Table 4.6-1 has been added.
<p><b>RAI AQ-3</b></p> <p><b>Please provide estimates of the concentrations of the air-quality and climate-change parameters specified above in RAI AQ-2 for all phases of the Smith Ranch Project and at all of the Project sites, including during Project transportation.</b></p> <p>Baseline air emissions should be established or calculated for all current and proposed activities and for all significant sources of air emissions during all phases at the Smith Ranch Project. In addition, because all phases of the Smith Ranch Project could produce greenhouse gases at each of the Project's sites as well as discharge other air-quality-related emissions, the NRC requests this information in order to compare existing air-quality conditions at each Project area with those that could potentially impact site and regional air quality. This information will assist the NRC in its assessment of air-quality impacts of the Smith Ranch Project.</p>	<p><b>CAMECO RESPONSE:</b> Cameco has provided an estimate of the potential fugitive dust emissions for the Smith Ranch Project, but does not track greenhouse gas emissions or other sustainability parameters for each Cameco-owned global uranium mining and milling operations. In the US, there are statutory national pollutant release inventories which require public reporting. To date, it is extremely rare that uranium companies have included such data in their reporting, leaving a major gap in understanding the full implications of emissions and pollutant issues associated with uranium mining and milling. Numerous studies have been completed that estimate the greenhouse gas (GHG) emission per metric ton (tonne) of uranium production at a standard mine, but Cameco is not aware of any detailed studies or data that are available for an ISR operation.</p> <p>Cameco does however provide an annual sustainable development report at the corporate level, which includes data for all 31 Global Reporting Initiative (GRI) indicators and four indicators that are unique to the corporation. The GRI is a leading non-profit organization in the sustainability field. GRI promotes the use of sustainability reporting as a way for organizations, including Cameco,</p>

	<p>to become more sustainable and contribute to sustainable development. GRI has pioneered and developed a comprehensive <i>Sustainability Reporting Framework</i> that is widely used around the world.</p> <p>A pdf of Cameco's 2012 sustainable development report can be downloaded at <a href="http://www.cameco.com/sustainable_development/2012/report_builder/">http://www.cameco.com/sustainable_development/2012/report_builder/</a>. GRI indicators reported by Cameco that pertain to air quality and GHGs include the following:</p> <ul style="list-style-type: none"> <li>Direct Energy Use (by primary source)</li> <li>Indirect Energy Use (by primary source)</li> <li>GHG Emissions (by weight)</li> <li>Air Emissions (by type and weight)</li> </ul> <p>New Section 3.6.6.2 has been added to the ER that discusses air quality and sustainable development. New Table 3.6-2 has been added summarizing the above mentioned GRI indicators.</p>
<p><b>RAI AQ-4</b></p> <p><b>Please provide further explanation of the mathematical approach taken by Cameco's fugitive-dust calculations.</b></p> <p>A. Please discuss and consolidate the fugitive-dust emissions information provided in Section 3.6.6.1 of the ER and the tables in Section 7.2.1 of the TR.</p> <p>B. Please clarify the gaseous and airborne-particulate emissions that are referred to in the ER Section 4.6 statement: "The current release of gaseous and airborne particulates from the in-situ recovery (ISR) operations at Smith Ranch are below the allowable limits for the State of Wyoming." Also, please identify the "allowable limits" to which Cameco refers.</p>	<p><b>CAMECO RESPONSE:</b> The table in Section 7.2.1 of the TR for the estimated fugitive dust emissions is correct, while the table in Section 3.6.6.1 of the ER was incorrect. Text in Section 3.6.6 of the ER has been updated. The table provided in the ER has been replaced with the table provided in the TR.</p> <p>A. Estimated fugitive dust emissions during construction of ISR facilities are less than 2% of NAAQS for PM<sub>2.5</sub> and less than 1% for PM<sub>10</sub> (NRC, 2009). The sulfur dioxide emissions</p>

C. The Table on ER page 3-76 presents certain mathematical results, but it does not provide supporting information as to how the results were calculated. Also, please clarify why the Smith Ranch site is listed as having 0.0 with respect to employee vehicles and service trucks.

The narrative on pages 3-75 to 3-75 of the ER discusses the fugitive dust-equation that was used for Cameco's analysis in the ER; however, the narrative is not clear as to how the equation was used in practice. In order for the NRC to evaluate the air-quality impacts of the Smith Ranch Project, it needs to understand the underlying bases of Cameco's calculations.

from the Smith Ranch CPP are permitted under WDEQ AQD Permit No. OP-202.

B. The table provided in the ER on Page 3-76 was incorrect and has been replaced with the table provided in Section 7.2.1 of the TR. The fugitive dust emissions were calculated using equations provided in EPA Publication AP-42. Cameco developed transportation plans for Smith Ranch, North Butte and Gas Hills to provide a basis for estimating vehicle miles traveled for employees traveling to the site, service or delivery trucks, drilling operations, construction traffic and operations. Estimated fugitive dust emissions were not calculated for Ruth, as Cameco does not have a specific operations plan for Ruth so as to develop a transportation plan. Section 7.2.1 of the TR and Section 3.6.6.1 of the ER provide the two equations from EPA Publication AP-42 and assumed variables utilized to estimate the fugitive dust emissions.

C. A review of estimated fugitive dust emissions present in Section 7.2.1 shows no emissions for employee travel and operational supply support deliveries. The roads to Smith Ranch are paved and employee travel from Casper, Glenrock and Douglas and delivery trucks will not produce significant fugitive dust emissions. In contrast, employee travel and delivery trucks are a significant portion of the total fugitive dust emissions for North Butte and Gas Hills

	<p>because of the lengthy dirt roads that would be utilized to reach each facility. Text was added in TR Setion 3.6.6.1 to clarify that paved roads are not expected to generate fugitive dust emissions. The current and proposed road upgrades at the North Butte and Gas Hills (AML and Dry Creek Roads) should reduce the fugitive dust emissions.</p>
<p><b>RAI AQ-5</b></p> <p><b>Please provide additional information regarding the specific mitigation measures in use and to be used by Cameco to control fugitive dust during each phase of the Smith Ranch Project at all Project sites.</b></p> <p>A. Please describe the events and/or measurements that would trigger the implementation of fugitive-dust-control measures and/or discuss the measures' standardized frequencies, if any.</p> <p>B. Please describe the specific dust-suppression methodologies that are currently used or would be used by Cameco at each of the Smith Ranch Project sites, especially during well installation and facility construction (i.e., water application or chemical treatment), and identify the types of chemicals that would be applied to unpaved roads to minimize fugitive-dust emissions.</p> <p>C. Please discuss the expected relative performance of each dust-control technique, how such performance would be measured, and any impacts each technique would have on underlying soils.</p> <p>Section 4.6.1.1 in the ER states that mitigation measures would be implemented, as needed, to moderate fugitive dust and its generation. Section 7.4.1 of the TR states that dust suppressants would only be used if warranted by conditions. Please discuss how Cameco would determine that implementation of mitigation measures is "warranted." In order for the NRC to evaluate the air-quality impacts of the Smith Ranch Project, additional information is requested regarding the implementation and the associated performance of dust-control measures.</p>	<p><b>CAMECO RESPONSE:</b> New Section 3.8.5 has been added to the TR to provide the details below regarding Cameco's procedures for controlling fugitive dust emissions:</p> <p>A. Cameco does not have specific fugitive dust control plans for construction or operations activities. The WDEQ/AQD does not require specific plans and/or permits for fugitive dust control for large-scale construction projects as the entire state of Wyoming is within an attainment area with respect to PM<sub>10</sub> emissions. As a general rule, abatement measures for dust are required on the primary, secondary and temporary well field roads when a visible plume of dust extends more than 300 feet from the source with an estimated opacity exceeding 20% (objects partially obscured). Dust from unpaved roads is not only a nuisance but creates a safety hazard by reducing the driver's visibility.</p> <p>B. Water application is Cameco's best short term method for controlling fugitive dust emissions. Water trucks will be the primary</p>



	<p>means of dust abatement during facility construction and well field installation. Water for dust control is obtained from facility wells and is of high quality. Water spray is controlled so that over-spraying and pooling will be avoided to the extent possible. Cameco does not typically utilize chemical agents for dust control treatment, but could use chemical treatments in the future if conditions warrant. TR Section 3.8.5 further explains possible dust control enhancement agents.</p> <p>C. Relative performance of watering strategies and the impacts of these techniques can be found in new TR Section 3.8.5. In general, watering provides short-term reductions in dust generation depending on surface evaporation rates. Regular, light watering has proven to be more effective than less frequent, heavy watering. Cameco minimizes water runoff containing mud and silt that can cause damage to streams and other resources.</p>
<b>Visual Resources</b>	
<p><b>RAI VIS-1</b></p> <p><b>Please provide additional information regarding visual resources at all Smith Ranch Project sites during all Project phases.</b></p> <p>A. Please provide a map that displays the respective VRM classes present at all Smith Ranch Project sites, to include a two-mile visual-resource study area beyond the project boundaries and an area of appropriate size within which Smith Ranch Project facilities or wellfield structures can be seen by an observer (i.e., the maximum distance from which an object can</p>	<p><b>CAMECO RESPONSE:</b></p> <p>A. Cameco obtained a shapefile from the BLM that classified the visual resource management (VRM) classes for the entire state. Shapefiles of the license boundaries for the Smith Ranch and the remote satellites (North Butte and Gas Hills) were created and overlaid and a GIS analysis was performed to</p>

be observed).

B. Please provide data or a table describing the number of acres of each VRM class within each of the areas identified above for each Project site.

Section 3.9.2 of the ER states that the BLM has inventoried the visual resources of all lands within the boundaries of the Buffalo, Casper, and Lander Field Offices using the Visual Resource Management (VRM) system. However, specific information regarding all Smith Ranch Project sites is not provided. This information will be used in NRC's visual-resource impacts of the Proposed Action.

determine the area (hectares) of each VRM class with the license boundary. The existing table in the text of Section 3.9.2 of the ER provides a summary of the VRM classes within each facility.

Cameco also conducted a view shed analysis at a distance of 3,218 meters (2 miles) from the license boundaries at all facilities except Ruth. Global Mapper™ (Blue Marble Geographics) software and USGS digital elevation models (DEM) were utilized to complete the view shed analysis. The CPP, HUP at Smith Ranch/Reynolds and the Carol Shop (Gas Hills) were assigned an elevation of 40 feet above the ground surface and remote satellites at all facilities were assigned an elevation of 25 feet above the ground. The elevation of the hypothetical observer at 3,218 meters (2 miles) from the license boundaries was assigned an elevation of 1.8 meters (6 feet). The software accounts for the curvature of the earth in the view shed calculations. The view shed analysis and results are presented in Section 3.9 of the ER. New figures include:

- Figures 3.9.1 and 3.9.1A View Shed Analysis and BLM VRM Classes, respectively – Smith Ranch/Reynolds
- Figures 3.9.2 and 3.9.2A View Shed Analysis and BLM VRM Classes, respectively – North Butte Remote Satellite

	<ul style="list-style-type: none"> <li>Figures 3.9.3 and 3.9.3A View Shed Analysis and BLM VRM Classes, respectively – Gas Hills Remote Satellite.</li> </ul> <p>B. See Cameco response to A.</p>
<p><b>RAI VIS-2</b></p> <p><b>Please provide additional information related to the nighttime lighting of all Smith Ranch Project sites.</b></p> <p>A. Please describe lighting-fixture design and fixture arrangements that currently are and that would be present at each Smith Ranch Project site.</p> <p>B. Please discuss the impacts of nighttime lighting during all Project phases for each of the Project sites, and include current or proposed nighttime-lighting mitigation measures, if any.</p> <p>Additional lighting information will be used by the NRC to assess the impacts of nighttime lighting at the Smith Ranch Project sites, including the potential for light pollution. Specific information regarding the current and proposed lighting fixture(s), bulb type, shielding, post locations, and hours of operation would be used to evaluate potential visual impacts from the Smith Ranch Project.</p>	<p><b>CAMECO RESPONSE:</b></p> <p>A. Information regarding lighting fixture considerations and arrangements at each Smith Ranch Project site has been added to ER Section 4.9 Visual Impacts (Section 4.9.1 Proposed Action).</p> <p>B. Information about lighting impacts and mitigation measures has been added to ER Section 4.9 Visual Impacts (Section 4.9.1 Proposed Action).</p>
<p><b>RAI VIS-3</b></p> <p><b>Please provide the estimated current number of feet/miles (or meters/kilometers) of fencing at each Smith Ranch Project site and describe the fencing's design(s). Please also provide the estimated increase in the extent of fencing (in feet/miles or meters/kilometers) that would result from the changes proposed in the license renewal application.</b></p> <p>Section 4.1.1 of the ER states that Cameco installs fencing around mine units at the Smith Ranch Project sites to restrict livestock access during ISR production and restoration phases. The ER indicates also that these fences would allow continuing wildlife forage. Sections 3.6.1.1, 3.10.3.1 and 5.7 of the TR state that fencing surrounds the Smith Ranch CPP, the evaporation ponds at the Smith Ranch site, and areas containing source or 11e.(2) byproduct materials.</p> <p>The design and the magnitude (i.e., lengths) of this fencing could have visual impacts. The NRC</p>	<p><b>CAMECO RESPONSE:</b> For Smith Ranch: Using AutoCAD and a pre-existing plate (Plate OP-1 Proposed Site Layout), the fence lines for both the current and proposed mine units at the Smith Ranch Project Site were measured, summed, and documented in ER Section 4.9.1. The amount of current fencing at the Smith Ranch Project Site is approximately 100,000 meters (336,000 feet). An additional 30,500 meters (100,000 feet) are anticipated with the creation of the proposed mine units.</p> <p>For North Butte: Using AutoCAD and a pre-existing plate (Plate OP-1 Proposed Site</p>

<p>requests this information to evaluate potential visual-resource impacts of the Smith Ranch Project.</p>	<p>Layout), the fence lines for both the current and proposed mine units at the North Butte Remote Satellite were measured, summed, and documented in ER Section 4.9.1. The amount of current fencing at the North Butte Project Site is approximately 7,700 meters (25,000 feet). An additional 11,000 meters (36,000 feet) are anticipated with the creation of the proposed mine units. The amount of acreage fenced off at the Gas Hills will be approximately 400 hectares (1,000 acres). Further development is needed at the Ruth Remote Satellite before an estimate of fenced acreage can be made.</p>
<p><b>RAI VIS-4</b></p> <p><b>Please provide additional discussion on Photos 4.9-1 and 4.9-2, which are included in ER Section 4.9.4.</b></p> <p>Please indicate the geographic direction the viewer of these photographs is looking toward (i.e., provide the direction in which the reader is facing). In addition, discuss how these photographs correspond to the photographs included in Section 3.9, Photos 3.9-1 A-D. This information would better clarify the impacts to the viewshed before and after the Project construction and would serve to support the statement on ER page 4-32 that "Photo 4.9-2, Central Processing Plant at Smith Ranch, demonstrates a potential worst-case visual impact (largest building complex) within SUA-1548."</p>	<p><b>CAMECO RESPONSE:</b> These photos were removed altogether, as were any photo references within the text of the document (ER Section 4.9 Visual Impacts).</p>
<p><b>Socioeconomics</b></p>	
<p><b>RAI SOC-1</b></p> <p><b>Please provide the number of workers, both current and proposed, at each Project site associated with all phases of Smith Ranch Project.</b></p> <p>Please provide employment estimates for each Smith Ranch Project site specific for each ISR process phase. Section 4.10.1.1 of the ER provides employment estimates associated with</p>	<p><b>CAMECO RESPONSE:</b> Sections 4.10.1.1 and 4.10.1.2 of the ER have been revised to provide estimated construction and operational workforce numbers for the Smith Ranch site and the North Butte and Gas Hills Remote Satellite facilities. New</p>

<p>construction activities, but this estimate appears only related to the Smith Ranch site (i.e., approximately 300 workers), and not to the Gas Hills or North Butte sites. Section 4.10.1.2 provides operation-phase employment estimates for three Smith Ranch Project sites; however, it appears employment estimates for aquifer restoration and decommissioning activities at each site are missing. The information is requested for the NRC to analyze the socioeconomic impacts of Smith Ranch Project.</p>	<p>Section 4.10.1.3 has been added to the ER to discuss estimated workforce numbers that will be required during the restoration phase of the Smith Ranch site and the North Butte and Gas Hills Remote Satellite facilities.</p>
<p><b>RAI SOC-2</b></p> <p><b>Please clarify whether Smith Ranch Project activities would result in additional land being lost to livestock grazing and agricultural production at Project sites and, if so, how much would be lost during all Project phases and at each Project site.</b></p> <p>Section 4.10 of the ER provides information regarding the total acreage comprised by the areas taken for the Smith Ranch (16,187 ha), North Butte (409 ha), and Gas Hill (3,440 ha) sites. Please provide the estimated number of additional hectares at the Smith Ranch site specifically where access would be restricted under the proposed conditions, but it is not during the current operation of the site (i.e., areas that would consequently not be available for livestock grazing or agricultural activities). In particular, please provide this information for all areas that would be cut off or otherwise would be inaccessible (but would not necessarily directly impacted as a result of Project activities). Also, at the North Butte and Gas Hills sites please provide the respective acres that would be restricted during any of the Smith Ranch Project phases. This information will support calculations of the potential for reduced economic activity as a result of the Smith Ranch Project, where grazing and other agricultural uses due to Project activities are foregone.</p>	<p><b>CAMECO RESPONSE:</b> Text has been added to ER Section 7.3.1.6 Habitat Disturbance, which clarifies the area for each site which will be inaccessible (but not necessarily directly impacted by Project activities) for the duration of the Project. Further development is needed at the Ruth Remote Satellite before an estimate of fenced acreage can be made. Nevertheless, no long-term losses to wildlife habitat relative to the existing conditions are anticipated from the continued construction and operation at SUA-1548 license areas.</p>
<p><b>RAI SOC-3</b></p> <p><b>Please confirm the values in Table A-10-4 of the ER.</b></p> <p>Table A-10-4 of the ER presents estimated 2009 payrolls (\$9,141,000); 2008 ad valorem, property taxes, sales and use taxes, and severance taxes (\$1,644,000); and local purchases (\$26,065,000). These values total \$36,850,000. Please discuss why this total is different than the total presented in Table A-10-4 of \$40,327,000. This information is requested so that the NRC can assess the socioeconomic impacts of the Smith Ranch Project.</p>	<p><b>CAMECO RESPONSE:</b> Table A-10-4 is in the 2010 superseded version of LRA. This table should not be reviewed as part of the current LRA document. Section 1.1 of the ER states that the 2011 document supersedes the 2010 submission in its entirety.</p>

<p><b>RAI SOC-4</b></p> <p><b>Please clarify the differences between the total taxes as presented in Table A-10-4 and the values in Tables 7-1 and 7-3 of the ER.</b></p> <p>Table A-10-4 of the ER suggests that the 2008 tax revenues currently generated by the Smith Ranch Project total \$1,644,000. In contrast, Table 7-1 and Table 7-3 suggest direct tax revenues \$3,737,000. Please explain this inconsistency. This information is requested to support the NRC's socioeconomic-impact analysis of the Smith Ranch Project.</p>	<p><b>CAMECO RESPONSE:</b> Table A-10-4 is in the 2010 superseded version of LRA. This table should not be reviewed as part of the current LRA document. Section 1.1 of the ER states that the 2011 document supersedes the 2010 submission in its entirety. Table A-10-4 cannot be compared with Tables 7-1 and 7-3. Table A-10-4 was constructed using 2008 and 2009 data. Tables 7-1 and 7-3 were constructed using updated information from 2010. No text was changed in response to this comment.</p>
<p><b>RAI SOC-5</b></p> <p><b>Please provide the basis for the State and local tax-revenue estimates presented in Section 7 of the ER.</b></p> <p>A. Please provide the input data values and rates used in Cameco's calculations to determine tax-revenue estimates.</p> <p>B. Please discuss in more detail to whom these revenues would accrue. In doing so, please specifically distinguish what quantity would accrue to the State of Wyoming and what quantity would accrue to individual, local jurisdictions from the Smith Ranch Project.</p> <p>Section 7 of the ER discusses the estimated tax revenues associated with the Smith Ranch Project. However, insufficient detail is provided in the ER for a determination to be made as to which jurisdictions would accrue these revenues. The NRC requests this information in order to verify the tax-revenue estimates during its socioeconomic-impact analysis.</p>	<p><b>CAMECO RESPONSE:</b></p> <p>A. The data source was added to the bottom of each table in the 7.0 Cost Benefit Analysis report (Tables 7-1 through 7-8), which was <i>The Economic Impact of Cameco on Wyoming: Existing Uranium Operations and Planned Expansion</i> report, dated 2010.</p> <p>B. New Table 7-3.1 and discussion in Section 7.2.3.1 illustrates the tax expenditures and distributions to local and state governments and schools.</p>
<p><b>Environmental Justice</b></p>	
<p><b>RAI EJ-1</b></p> <p><b>Please confirm that there are no minority census-block groups and no low-income census tract groups greater than 20 percent within a 4-mile radius of the Smith Ranch Project.</b></p> <p>Section 4.11 in the ER examines the 2010 census tracts within a 50-mile (80-kilometer) radius</p>	<p><b>CAMECO RESPONSE:</b> The text and tables of ER Section 4.11, specifically Sections 4.11.1.1 through 4.11.1.3 have been updated to show minority and low-income populations within a 6.4 km radius of the sites and confirms that</p>

<p>around the proposed Project for the characteristics that are relevant to environmental justice. Tables 4.11-1, 4.11-3, and 4.11.7 show race characteristics at the 2010 census-tract level for the respective 80-kilometer-radii areas centered on the Smith Ranch, North Butte, and Gas Hills sites. Although census tracts are shown in the tables, the <i>NRC Final Policy Statement on Environmental Justice</i> (2004) notes that the NRC uses <i>census-block groups</i> as the geographic unit of analysis for an evaluation of race census data. This is because there may be concentrated pockets of minority populations that live at this smaller geographic unit of analysis that would not be obvious at the census tract level.</p> <p>The <i>NRC Policy Statement on the Treatment of Environmental Justice</i> and NUREG-1748 suggest the guideline of a 4-mile-radius area around rural facilities regulated by the NRC's Office of Nuclear Materials Safety and Safeguards for environmental-justice analysis. However, the GEIS notes that the 4-mile radius is intended as a guideline rather than a requirement, and the NRC's GEIS evaluated a 50-mile-radius area around potential ISR facilities. Nonetheless, the NRC recognizes that many of the potential impacts of the Smith Ranch Project would not extend 50 miles; consequently, NRC would like to confirm that the best-available data indicate there are no minority or low-income populations at the census-block-group level for minorities and census-tract level for income exceeding 20 percent within the 4-mile-radius area around each Smith Ranch Project site.</p>	<p>no disproportionate adverse Environmental Justice impacts have been identified for low-income populations within the census tracts due to the operations at Smith Ranch. Tables 4.11-1 through 4.11-8 have all been updated to replace previous versions.</p>
<p><b>RAI EJ-2</b></p> <p><b>Please confirm that the best-available income data were used in the environmental-justice analysis presented in the ER (i.e., by comparing the data used to 2010 data).</b></p> <p>The current income data from Tables 4.11-2, 4.11-5, and 4.11-8 are derived from the 2000 U.S. Census. The economic downturn that began in 2008 and the changes in the energy industries of Wyoming may have affected the data on minority and low-income populations in Wyoming. This review of the census data is necessary to ensure that NRC has employed the best-available data in its environmental-justice evaluation for the ER. The tables of census data will be used by the NRC to substantiate its conclusions in its environmental-justice analysis. If the recent economic downturn could have affected the environmental-justice data, please revise the environmental-justice analysis to incorporate 2010 data.</p>	<p><b>CAMECO RESPONSE:</b> Tables 4.11-2, 4.11-5, and 4.11-8 were replaced and updated using 2007-2011 U.S. Census Bureau data.</p>
<p><b>RAI EJ-3</b></p>	<p><b>CAMECO RESPONSE:</b> Section 4.11.1 has been expanded to clarify the impacts on Tribal</p>

<p><b>Please provide information regarding hunting or gathering of natural resources by Tribal members (or other minority populations) as well as by any low-income populations, on each of the Smith Ranch Project sites and in their immediate vicinity.</b></p> <p>This information regarding activities of Native American Tribes, other minority populations, and/or low-income populations is requested for the NRC to support the NRC's environmental-justice analysis.</p>	<p>members and other minority populations. Additional information regarding hunting and land use has been included.</p>
<p><b>Public and Occupational Health and Safety</b></p>	
<p><b>RAI H&amp;S-1</b></p> <p><b>Please summarize the emergency-management protocols, procedures, plans, programs, and/or best management practices (BMPs) that would mitigate the risk of an accidental release of hazardous or radioactive materials and reduce consequent impacts if a release were to occur at the Smith Ranch Project, and please confirm that these would remain in effect for the duration of the Smith Ranch Project.</b></p> <p>An emergency-management plan is described in Section 4.12.1.1 of the ER, one which reduces the risk of an accidental release of hazardous and/or radioactive materials. In addition, the current standard operating procedures (SOPs) for the handling, processing, storage, and transport of hazardous and radioactive materials are described in Section 4.12 of the ER. These SOPs are also designed to ensure that the risks associated with these materials remain low, thereby mitigating potential public and occupational health and safety impacts. The NRC would like to include discussion of these health-and-safety-related protocols, SOPs, plans, programs, and BMPs as mitigation measures in its public and occupational health and safety analysis for the Smith Ranch Project EA.</p>	<p><b>CAMECO RESPONSE:</b> Cameco utilizes a Safety, Health, Environment and Quality (SHEQ) Management System which formalizes the approach to the management of safety, health, environment and quality of all operational activities and ensures consistency across all operating facilities. An explanation and discussion of health- and safety-related protocols, SOPs, plans, programs and mitigation measures has been added as new Section 5.2.1.1.</p> <p>The Cameco SHEQ Management System is integrated into each operational facility. The policies and procedures in place are part of Cameco's commitment to the health and safety of the employees, public, and the environment and will remain in effect for the life of each operational facility.</p>
<p><b>RAI H&amp;S-2</b></p> <p><b>Please summarize the site-specific health and safety programs in place at existing and proposed Smith Ranch Project sites, and please confirm that these would remain in effect for the duration of the Smith Ranch Project.</b></p> <p>Site-specific health and safety programs, including those related to occupational health and</p>	<p><b>CAMECO RESPONSE:</b> An industrial safety program is in place at all Cameco operations and is designed to ensure compliance with corporate policies as well as relevant federal and state safety, training, and reporting standards. Cameco employs an extensive</p>



<p>safety—both nonradiological and radiological—which are currently in place at the Smith Ranch site and that would be instituted at the proposed Project sites, could be considered as a mitigation measure(s). Please provide a summary of the current site-specific health and safety program at the Smith Ranch site as well as those that would be implemented at the Gas Hills and North Butte sites. This information will support the NRC’s analysis of the public and occupational health and safety impacts of the Smith Ranch Project.</p>	<p>SHEQ staff. Staffing consists of a SHEQ Manager – Division, SHEQ managers, coordinators, and specialists, safety personnel and environmental technicians whom are all highly qualified and trained. A summary of the current site-specific health and safety program at the Smith Ranch project sites have been included in new Section 5.2.1.2.</p>
<p><b>Waste Management</b></p>	
<p><b>RAI Waste-1</b></p> <p><b>Please provide Section 4.13 of the ER.</b></p> <p>Section 4.13 is referenced in ER Sections 4.3.1.2, 4.12.1.1, and 4.12.1.2; however, it does not seem to be included in the copy of the ER included in Cameco’s license-renewal application. If the contents of Section 4.13 are located elsewhere in the ER, please identify the location(s). Complete information (e.g., quantities, types, and characterizations) regarding all waste streams, both byproduct and non-byproduct, and both liquid and solid, that would be generated at all of the Project sites and during all ISR process phases will be part of the NRC’s assessment of proposed waste-management impacts for the Smith Ranch Project.</p>	<p><b>CAMECO RESPONSE:</b> The reference to Section 4.13 should have been Section 3.12. Section 3.12 of the ER describes the types of waste and waste management procedures. The references in the ER sections listed above have been corrected. It should be noted that Section 4.2 of the TR also describes liquid and solid waste management and relevant text has been changed to reflect this.</p>
<p><b>RAI Waste-2</b></p> <p><b>Please provide additional detail on the liquid-waste disposal methods that are in use or proposed at each of the Smith Ranch Project sites during all Project phases.</b></p> <p>Although TR Section 4.2.2 and ER Section 3.12.1 discuss liquid-waste management, additional detail regarding the current and proposed methods of liquid-waste disposal (e.g., evaporative surface impoundments, land application, deep-well injection) for each site is requested. Please identify the conditions under which methods other than those currently in use at the Smith Ranch site, or proposed for use at the North Butte and Gas Hills sites, would be implemented, if appropriate. Please ensure that this information addresses liquid-waste disposal during each of the ISR process phases. This information will be used by the NRC to evaluate the full range of environmental and waste-management impacts associated with</p>	<p><b>CAMECO RESPONSE:</b> As discussed in ER Section 3.12.1, liquid waste disposal at the Smith Ranch-Highland site utilizes deep disposal wells and land application for disposal of process liquid wastes for both the operations and restoration phases of the project.</p> <p>Since the Remote Satellite facilities were not in operation at the time the LRA document was submitted, waste disposal techniques were not addressed. For the North Butte Remote Satellite, Cameco plans to utilize</p>

<p>liquid-waste disposal.</p>	<p>deep disposal wells for disposal of process liquid wastes during both operations and restoration phases of the project. TR Sections 1.5, 3.5.3.4, 3.6.3, 3.9.2, 4.2.2.4, and 8.2 detail the proposed waste disposal options at the North Butte remote satellite.</p> <p>The current operations/restoration plan for the Gas Hills Remote Satellite is to dispose of operational and restoration generated liquid wastes by solar and enhanced evaporation methods. TR Sections 3.6.4.3, 4.2.1.1, 8.2 detail the proposed waste disposal options at the Gas Hills Remote Satellite. Cameco is in the process of testing the viability of utilizing deep disposal wells at this site as well, but as yet testing for this alternative method is not complete. Until the viability of disposal by deep well injection is proven, the plan will remain to use solar and enhanced evaporation methods for liquid waste disposal as described in the above referenced TR sections.</p>
<p><b>RAI Waste-3</b></p> <p><b>Please provide additional information on the decommissioning and reclamation of Satellite 1's radium-settling basins.</b></p> <p>A. Please provide the anticipated schedule for the complete decommissioning of the radium-settling basins at Satellite 1 of the Smith Ranch site.</p> <p>B. Please indicate the estimated volume and characterization of waste(s) expected to be generated during final decommissioning of these basins.</p> <p>In Section 3.12.1.2.2, the ER discusses the "radium-settling basins" that are present to the</p>	<p><b>CAMECO RESPONSE:</b></p> <p>A. Cameco anticipates that decommissioning of the Satellite 1 radium-settling basins will be complete by the end of the fourth quarter 2016. The anticipated schedule has been added to Section 3.12.1.2.2.</p> <p>B. As noted in Section 3.12.1.2.2, a small amount of clay liner remains containing low</p>

<p>east of Satellite 1, where radium-barium sulfate precipitation occurred after filtration of the Satellite 1 waste water and prior to discharge via land application. Although the decommissioning has been largely completed, additional work is indicated as having to be conducted. The timing, estimated volume, and anticipated characteristics of the waste generated during the basins' decommissioning will be assessed in the NRC's analysis of waste-management impacts at the Smith Ranch Project.</p>	<p>levels of uranium and Ra-266. Section 3.2.12.1.2 has been revised to discuss the anticipated characteristics and volume of the wastes.</p>
<p><b>RAI Waste-4</b></p> <p><b>Please provide additional information regarding the nature and characteristics of the solid-phase waste streams contaminated by byproduct materials that would be generated at all of the Smith Ranch Project sites during all appropriate ISR process phases.</b></p> <p>A. Please specify each solid-phase, byproduct-material-contaminated waste stream that would be generated at each Smith Ranch Project site during all ISR process phases.</p> <p>B. Please estimate the maximum volume of these waste streams generated at each of the Project sites on a per-year and per-ISR phase basis.</p> <p>Section 3.12.2.2 of the ER describes only generally the byproduct-material-contaminated waste streams that are and would be generated at the Smith Ranch site. In order for the NRC to perform a thorough and complete analysis of waste-management impacts, this additional information is requested.</p>	<p><b>CAMECO RESPONSE:</b> Section 4.2 of the TR provides a description of the types and quantities of liquid and solid wastes generated at the Smith Ranch Project sites as well as the disposal methods used to dispose of wastes at each site. Specifically, Section 4.2.3 discusses the quantities of byproduct and uncontaminated wastes anticipated to be produced at each site during the life of the project. A reference to Section 4.2 of the TR has been placed within Section 3.12.3 of the ER to direct the reviewer to the appropriate section of the TR.</p>
<p><b>RAI Waste-5</b></p> <p><b>Please provide additional information regarding the nature and characteristics of the solid-phase waste streams, which would be classified as non-byproduct, that would be generated at all of the Smith Ranch Project sites by ISR process phase</b></p> <p>A. Please specify each solid-phase, non-byproduct waste stream that would be generated at each Smith Ranch Project site during all ISR process phases.</p> <p>B. Please estimate the maximum volume of these waste streams generated at each of the Project sites on a per-year and per-ISR phase basis.</p> <p>Section 3.12.2.1 of the ER describes only the non-byproduct, solid-phase waste streams that are and would be generated at the Smith Ranch site. In order for the NRC to perform a</p>	<p><b>CAMECO RESPONSE:</b> See response to RAI Waste 4 above.</p>

thorough and complete analysis of waste-management impacts, this additional information is requested.	
<b>Historical and Cultural Resources</b>	
<p><b>RAI CR -1</b></p> <p><b>Please provide a comprehensive summary of all past historical- and cultural-resource surveys (or inventories) that have been conducted within the proposed Smith Ranch Project boundaries.</b></p> <p>A. Please provide a table identifying each survey, the number of acres surveyed, the respective survey's sponsor, the organization that conducted the survey, the year of the respective survey, a description of the survey methodology, and a list of all historical and/or cultural properties identified during each survey. Please provide a brief summary discussion of each cultural and/or historical survey effort, including the methodology for each survey.</p> <p>B. Please provide the following maps:</p> <ul style="list-style-type: none"> <li>i. Please provide maps which indicate the current SUA-1548 license boundaries and the superimposed boundaries of each of the previous cultural-resource surveys at all of the Smith Ranch Project sites (one map per site) to facilitate comparison of the respective survey areas.</li> <li>ii. Please provide redacted and un-redacted maps which identify the locations of all historical and/or cultural properties that have been identified within each of the Project sites' boundaries.</li> <li>iii. Please provide maps which indicate the areas within all of the Project sites' boundaries that have not been addressed through an intensive-level historical- and cultural-resource survey.</li> <li>iv. Please provide a map(s), assessment(s), and/or review(s) of all Project sites where areas may be sensitive for deeply-buried prehistoric properties that are typically not identifiable by surface examinations or shallow probing.</li> </ul>	<p><b>CAMECO RESPONSE:</b> The requested information is being prepared and will be submitted at a later date as a confidential revised Appendix F of this ER.</p>
<p><b>RAI CR-2</b></p> <p><b>Please discuss Cameco's plans to address the potential impacts to historical and/or cultural properties in areas that have not been covered by intensive cultural-resource surveys</b></p>	<p><b>CAMECO RESPONSE:</b> It has been and will continue to be Cameco's intent to not impact any historical or cultural properties whether previously discovered by surveys or not.</p>

<p><b>and/or areas that were surveyed prior to 2004.</b></p> <p>The data requested above will assist the NRC during its assessment of the Smith Ranch Project's compliance with Section 106 of the NHPA. Some of these data have already been provided for some portions of Project sites. Final maps for the North Butte site have been compiled, and surveys for the Gas Hills site are ongoing under BLM oversight. With the additional information requested by the NRC, cultural-resource information can be collated for the entire Smith Ranch Project. Accordingly, this information will assist the NRC in its analysis of the impacts to historical and cultural resources of the Smith Ranch Project.</p> <p>Further, 2004 is the year that the latest revisions to the National Historic Preservation Act (NHPA)-implementing regulations at 36 CFR 800 were promulgated. Thus, this year is the generally accepted, standard-of-practice year that is used to identify historical- and cultural-resource surveys that meet modern standards and those that do not. However, the Wyoming State Historic Preservation Office (SHPO) has not established a distinct policy on this issue, and it may judge past work on a case-by-case basis. For areas that may be sensitive for deeply-buried prehistoric properties, the Wyoming SHPO could find it necessary to complete additional field visits or cultural-resource field inventories for specific sites to be identified in order to ensure that full identification and consideration of historical and cultural properties are in compliance with Federal cultural-resource-protection statutes.</p>	<p>Cameco will not conduct any surface disturbing activities in areas that have not been previously inventoried and cleared for cultural resources or have approved mitigation. It should be noted that License Condition 9.9 of SUA-1548 also requires that any work resulting in the discovery of previously unknown cultural artifacts shall cease until they have been inventoried and evaluated, and NRC has given Cameco authorization to resume working in the area. Additionally, for the North Butte and Gas Hills Remote Satellites, Cameco has prescribed policies in place to protect cultural resources and properties that may be of religious and cultural significance to Indian tribes. For North Butte, Cameco has proposed a Section 106 proposal. For the Gas Hills, Cameco has signed a Programmatic Agreement with NRC, BLM and SHPO that stipulates how cultural properties will be protected and treated during ISR operations.</p> <p>Cameco is in the process of compiling all available cultural resource information and will submit it to NRC at a later date as a confidential revised Appendix F of this ER.</p>
<p><b>RAI CR-3</b></p> <p><b>Please provide all State of Wyoming Cultural Resource Site forms for all identified historical and/or cultural properties within the existing and proposed Smith Ranch Project boundaries.</b></p> <p>Please note that copies of all Site forms where the respective properties have been formally</p>	<p><b>CAMECO RESPONSE:</b> The requested information is being prepared and will be submitted at a later date as a confidential revised Appendix F of this ER.</p>

<p>designated as "Not Eligible for Inclusion on the National Register of Historic Places" through a deliberate consensus determination with the Wyoming SHPO and/or the National Register of Historic Places will not be needed by the NRC. These Site forms will provide the NRC with additional information to use in its cultural-resource impacts analysis.</p>	
<p><b>RAI CR-4</b></p> <p><b>Please provide additional information regarding all historical and/or cultural properties located within all Smith Ranch Project boundaries.</b></p> <p>C. Please provide a table with information concerning each historical and/or cultural property presently identified within the current and proposed Project boundaries, indicating each respective Determination of Eligibility (DOE).</p> <p>D. Please identify which historical and/or cultural properties have the potential to be directly or indirectly impacted by proposed uranium-recovery activities at all Smith Ranch Project sites during all Project phases. Please also identify those historical and/or cultural properties that, in Cameco's opinion, it would deliberately avoid during any Smith Ranch Project activities.</p> <p>The information presented as a result of RAI CR-A above, should include the recommended DOE by the sponsoring agency, whether a formal DOE through consensus has been reached in consultation with the Wyoming SHPO or Keeper of the National Register, or a formal DOE which is unresolved. This information will assist the NRC in its assessment potential impacts to historical and/or cultural properties in compliance with Section 106 of the NHPA. In addition, this information will provide the NRC summary data necessary to conduct a completeness review and to seek comments from the Wyoming SHPO, Advisory Council on Historic Preservation, Interested Tribes and the public.</p>	<p><b>CAMECO RESPONSE:</b> The information requested in C. and D. is being prepared and will be submitted at a later date as a confidential revised Appendix F of this ER.</p>