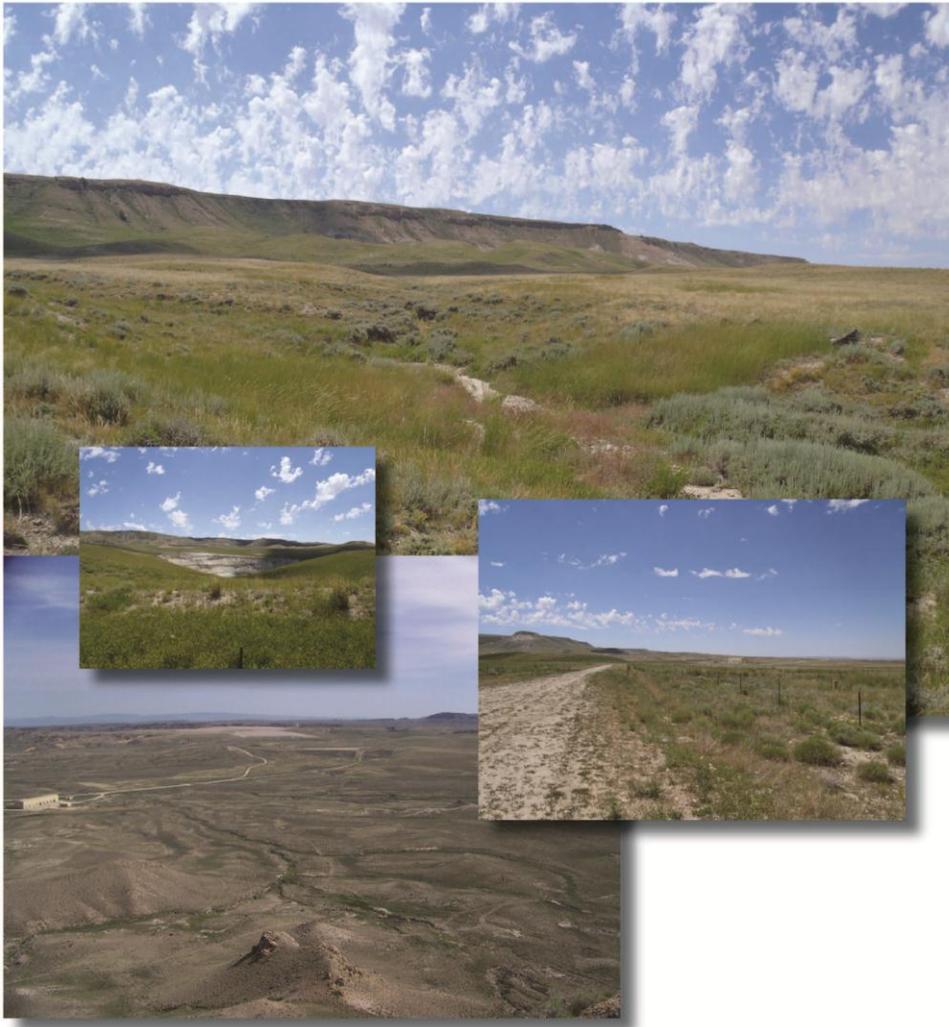


U.S.D.I. Bureau of Land Management
Wind River/Bighorn Basin District, Wyoming
Record of Decision
for the
Gas Hills In-Situ Recovery Uranium Project



February, 2014



BLM Mission Statement

The BLM's multiple-use mission is to sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. The Bureau accomplishes this by managing such activities as outdoor recreation, livestock grazing, mineral development, and energy production, and by conserving natural, historical, cultural, and other resources on public lands.

BLM/WY/PL-14/015+1330

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Acronyms and Abbreviations

| | |
|--------|---|
| ACEC | Areas of Critical Environmental Concern |
| A CHP | Advisory Council on Historic Preservation |
| ACM | Applicant-committed Measures |
| ADP | Annual Development Plan |
| AEA | Atomic Energy Act of 1954 |
| AEC | Atomic Energy Commission |
| AIRFA | American Indian Religious Freedom Act of 1978 |
| AML | abandoned mine lands |
| AO | Authorized Officer |
| APE | Area of Potential Effect |
| APLIC | Avian Power Line Interaction Committee |
| ARPA | Archaeological Resources Protection Act |
| BEA | Bureau of Economic Analysis |
| BLM | Bureau of Land Management |
| BMP | Best Management Practice |
| BPA | BLM-Preferred Alternative |
| BPT | Best Practicable Technology |
| CAA | Clean Air Act |
| CAAA | Clean Air Act Amendments |
| Cameco | Power Resources Inc., Cameco US Holdings, Inc. (dba Cameco Resources) |
| CBNG | coal-bed natural gas |
| CEQ | Council on Environmental Quality |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CFR | Code of Federal Regulations |
| CISA | Cumulative Impact Study Areas |
| COMA | Comparison Area |
| CR | County Road |
| CWA | Clean Water Act |
| DDA | designated development area |
| DOE | U.S. Department of Energy |
| EA | Environmental Assessment |
| EIS | Environmental Impact Statement |
| EO | Executive Order |
| ESA | Endangered Species Act |
| ESD | ecological site description |
| FLPMA | Federal Land Policy and Management Act |
| FO | Field Office |
| GHPA | Gas Hills Project Area |
| GIS | Geographic Information System |
| GPS | Global Positioning System |
| IM | Instruction Memorandum |
| ISR | In-situ Recovery |
| km | kilometer |
| LM | Office of Legacy Management |

| | |
|-----------|--|
| LRP | Limited Reclamation Potential |
| LTA | Larson-Tibesar Associates |
| MBTA | Migratory Bird Treaty Act |
| MLRA | Major Land Resource Area |
| MOU | Memorandum of Understanding |
| mph | miles per hour |
| NAGPRA | Native American Graves Protection and Repatriation Act |
| NEPA | National Environmental Policy Act |
| NHPA | National Historic Preservation Act of 1966, as amended |
| NOI | Notice of Intent |
| NPS | National Park Service |
| NRHP | National Register of Historic Places |
| OSHA | Occupational Safety and Health Administration |
| P.L. | Public Law |
| PA | Programmatic Agreement |
| PFYC | Potential Fossil Yield Classification |
| PLS | Pure Live Seed |
| PoO | Plan of Operations |
| PRI | Power Resources Inc. |
| PRPA | Paleontological Resources Preservation Act of 2009 |
| PSD | Prevention of Significant Deterioration |
| RCRA | Resource Conservation and Recovery Act |
| RMP | Resource Management Plan |
| ROD | Record of Decision |
| ROW | right-of-way |
| RPA | Resource Protection Alternative |
| s.u. | standard unit |
| SARA | Superfund Amendment and Reauthorization Act |
| SCP | Spill Contingency Plan |
| SGEO | Sage-grouse Executive Order |
| SHEQ | Safety, Health, and Environmental Quality |
| SHPO | State Historic Preservation Office(r) |
| SPCC | Plan Spill Prevention, Control, and Countermeasure Plan |
| SWPPP | Storm Water Pollution Prevention Plan |
| TCP | Traditional Cultural Properties |
| TMP | Topsoil Management Plan |
| U.S. | United States |
| U.S. NRC | United States Nuclear Regulatory Commission |
| U3O8 | uranium oxide |
| UIC | Underground Injection Control |
| UMTRCA | Uranium Mill Tailings Radiation Control Act of 1978 |
| UPZ | Uranium Point Zone |
| USACE | United States Army Corps of Engineers |
| USC | United States Code |
| USDA | United States Department of Agriculture |
| USDA-NRCS | United States Department of Agriculture-Nature Resource Conservation Service |
| USDOI | United States Department of the Interior |

| | |
|----------|--|
| USDOT | United States Department of Transportation |
| USDW | Underground Source of Drinking Water |
| USEPA | United States Environmental Protection Agency |
| USFS | United States Department of Agriculture, Forest Service |
| USFWS | United States Fish and Wildlife Service |
| USGS | United States Geological Survey |
| VRM | Visual Resource Management |
| WAAQS | Wyoming Ambient Air Quality Standards |
| WCC | West Canyon Creek |
| WDA | Wyoming Department of Agriculture |
| WDEQ | Wyoming Department of Environmental Quality |
| WDEQ-AQD | Wyoming Department of Environmental Quality-Air Quality Division |
| WDEQ-LQD | Wyoming Department of Environmental Quality-Land Quality Division |
| WDEQ-WQD | Wyoming Department of Environmental Quality-Water Quality Division |
| WGFD | Wyoming Game and Fish Department |
| WSEO | Wyoming State Engineer's Office |
| WYPDES | Wyoming Pollutant Discharge Elimination System |

Title: Record of Decision for the Gas Hills In-Situ Recovery Uranium Project

BLM Publication Index Number: BLM/WY/PL-14/007+1330

Case File: WYW140590

Preparing Office: United States Department of the Interior, Bureau of Land Management, Lander Field Office, 1335 Main Street, Lander Wyoming 82520.

Co-operating Agencies: See Chapter 1 of FEIS

Approving Official: Steve Dondero, District Manager, Wind River/Bighorn Basin District, 101 South 23rd St., Worland, Wyoming 82401. Signature page follows the Record of Decision.

Overview:

Power Resources Inc., a wholly owned subsidiary of Cameco US Holdings Inc., doing business as Cameco Resources (Cameco) submitted a Plan of Operations to the Bureau of Land Management (BLM) for the proposed Gas Hills In-Situ Recovery (ISR) Uranium Project (Gas Hills Project or Project) located in eastern Fremont and western Natrona Counties, Wyoming. Cameco originally submitted a Plan of Operations (Plan) for exploration activities exceeding five acres in 1996 which was approved in 1997 in accordance with the Title 43 of the United States (U.S.) Code of Federal Regulations (CFR) Subpart 3809, which applies to operations authorized by mining laws on public lands. Subsequently, Cameco submitted several Plan modifications in 1998, and 2008. On March 17, 2011 Cameco submitted the Plan modification that included ISR operations which triggered the development of this EIS. The BLM utilized Cameco's Plan of Operations as updated by additional correspondence received throughout the development of the EIS to draft the Proposed Action. See **Section 1.0** of this Record of Decision (ROD) for an overview of the project, and **Section 4.1** of this ROD for the description of the Proposed Action.

The Gas Hills Project draft Environmental Impact Statement (DEIS), the Notice of Availability (NOA) of which was published in the *Federal Register* on November 16, 2012, disclosed to the public the direct, indirect, and cumulative environmental impacts of authorizing the Proposed Action, as well as a No-Action Alternative, and a Resource Protection Alternative. Based on the results of public comments and other considerations, the final EIS (FEIS), (NOA published November 1, 2013) added a fourth alternative, the BLM Preferred Alternative, which incorporated the basic design and operation of the proposed action and incorporates several of the environmental protections of the Resource Protection Alternative. Additional information regarding each of these alternatives is provided below. Comments received on the FEIS have been addressed in this ROD.

The BLM Wind River/Big Horn Basin District Manager selects the BLM Preferred Alternative with slight modifications as the approach the BLM authorizes for approval of the Gas Hills Project. The BLM has determined that implementation of this Decision, with the specified environmental protection measures and monitoring, will allow Cameco to mine its uranium deposit under the authority of the U.S. mining laws, while ensuring that operations are conducted in a manner that prevents unnecessary or undue degradation of public lands in conformance with BLM requirements. This ROD summarizes the BLM's decision regarding the Project and the justification for the Decision.

The BLM has worked closely with the other permitting agencies. The U.S. Nuclear Regulatory Commission (NRC) issued Cameco a Source Materials License in January 2004 (SUA-1548). The Wyoming Department of Environmental Quality issued a Mine Permit for the proposed operations in 2003 (Permit to Mine No. 687).

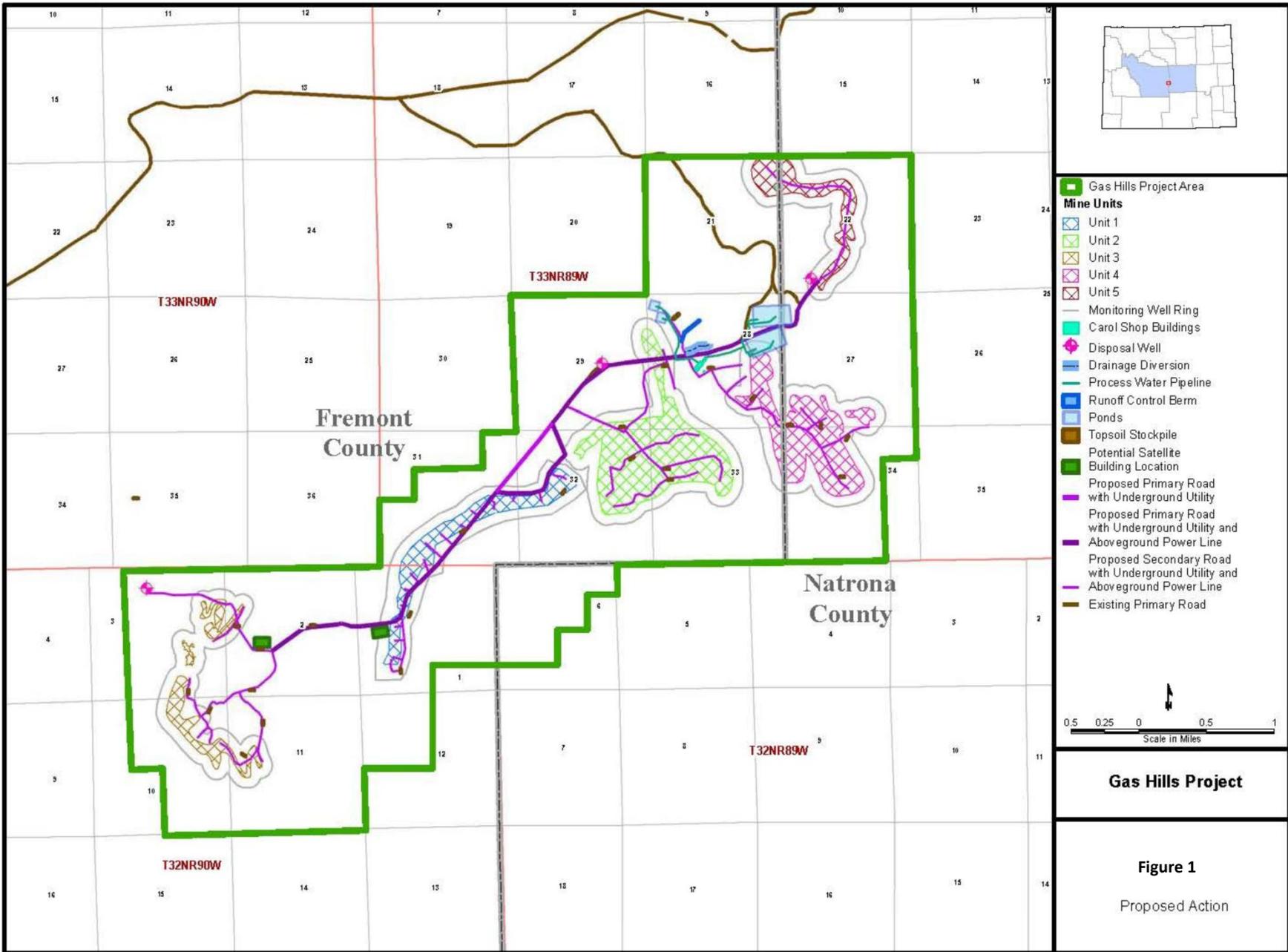
1.0 Mine Project:

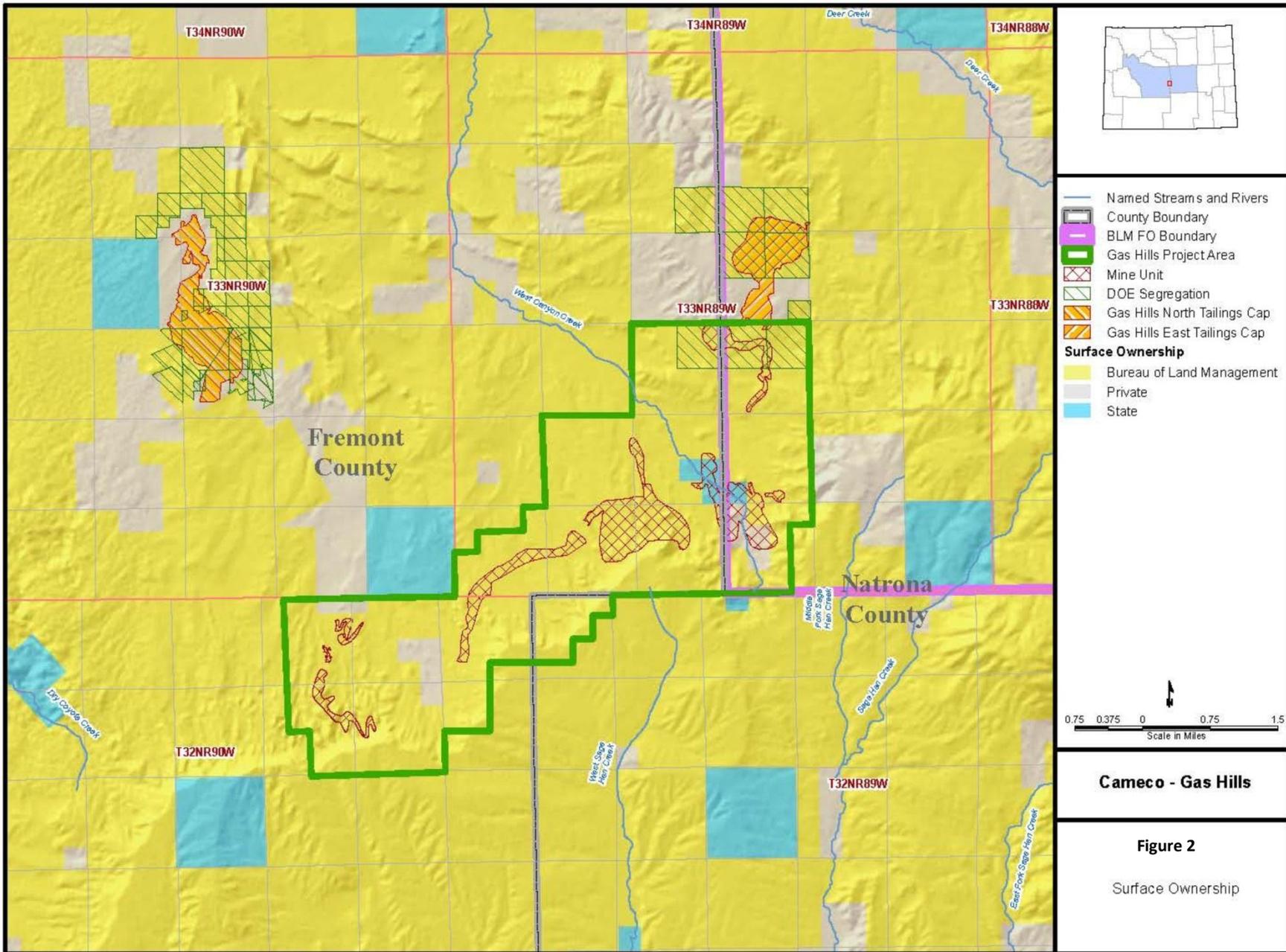
All action alternatives contained the same general approach to mine development, operations, production, and decommissioning, based upon Cameco's Plan of Operations. (As indicated in **Section 4.5**, below, the BLM considered but did not further analyze other mining methods.) Cameco proposed the development of uranium deposits in the Gas Hills Project Area (GHPA) through utilization of the In-Situ Recovery (ISR) process, which involves recovery of uranium from the subsurface through chemical dissolution using injection and production wells constructed similarly to conventional water wells. The process requires installation of surface infrastructure (processing facilities, waste water disposal facilities, roads, header houses, and power lines) as well as subsurface infrastructure (wells, pipelines, electrical lines, and communication cables).

The GHPA is defined under all action alternatives by the Mine Permit boundary and covers approximately 8,500 surface acres (approximately 13 square miles). The GHPA includes mixed surface and mineral ownership; however, the BLM manages the vast majority of the surface and minerals within the GHPA (approximately 94 percent). Private lands and Wyoming State lands make up approximately 6 percent of the remainder of the surface land ownership and mineral estate within the GHPA. A small portion of the lands within the GHPA (less than 1 percent) are split estate, where the mineral estate is managed by the BLM but the surface is owned by the state or private individuals, see **Figure 2**.

Activities associated with the Gas Hills ISR project are anticipated to occur throughout the projected 25-year life span of the mine. While many of the specific features of each of the action alternatives differ, particularly with regard to mitigation and reclamation, one of the most important differences among the action alternatives is the approach to surface disturbance occurring during the mine construction phase. The total estimated surface disturbance for the Project under the Proposed Action will be 1,315 acres, about 15 percent of the GHPA. **Figure 1** maps the proposed facilities and disturbance associated with the Proposed Action. The other alternatives and this ROD anticipate a reduced amount of surface disturbance. The BLM Preferred Alternative considers a smaller amount of surface disturbance but the precise amount will not be known until Cameco submits its annual operating plans, based upon site-specific soil information and reclamation potential. The reduced amount of surface disturbance coupled with the timing of construction of new mine units constitute the most important resource protection aspects of the Decision as described under the BLM's Preferred Alternative.

The organization of this ROD is that BLM's Decision is presented in **Section 2**, and management considerations are summarized in **Section 3**. The Proposed Action for the Project and the alternatives are discussed in **Section 4**, where the BLM also specifies its Preferred Alternative (Decision). Environmental protection measures and monitoring are summarized in **Section 5**. **Section 6** discusses the public and agency consultation that the BLM conducted during the NEPA process. A detailed description of how the BLM's Decision will be implemented is described in **Appendix A** to this ROD. A compilation of comments received on the FEIS with BLM responses is included in **Appendix B**.





ROD-GAS HILLS IN-SITU RECOVERY URANIUM PROJECT
February 2014

2.0 Decision

The Decision of the District Manager, Wind River/Bighorn Basin District, is to select a modified BLM Preferred Alternative (BPA) including the mitigation, monitoring and conditions of approval, described in **Section 4.2.3** and **Appendix A**. This Decision authorizes the development of the uranium minerals claimed by Cameco in accordance with 43 CFR 3809 et seq. by approving Cameco's Plan of Operations (summarized under the Proposed Action) (**Section 4.1**) including all of the phases of the mining development, operation, waste disposal, and reclamation. The Decision also incorporates specific environmental protection measures and monitoring requirements from the BLM Preferred Alternative required to ensure that the Performance Standards at 43 CFR 3809.420 are met and unnecessary or undue degradation of public lands is prevented. The specific measures that are approved by this decision, and become part of the Plan of Operations under the BLM's Preferred Alternative, are listed in **Section 4.2.3**, **Appendix A**, and **Section 5**.

The surface use and occupancy proposed in the Plan of Operations, described in Table 2-1 of the FEIS, meets the conditions specified in the applicable regulations (43 CFR 3715). The BLM concurs with the operator's need to occupy the subject lands. In order to occupy these lands, Cameco must comply with provisions described in 43 CFR 3715.2, 3715.2-1, and 3715.5 of the regulations.

The Decision to approve the Plan of Operations by the BLM does not constitute a determination regarding the validity or ownership of any unpatented mining claims involved in the mining operation. Additionally, Cameco will be responsible for obtaining any use rights or local, state, or Federal permits, licenses, or reviews that may be required for the operation.

3.0 Management Considerations

In making the decision to approve the BLM Preferred Alternative, described in **Section 4.2.3**, the BLM has carefully considered the following factors:

- The modified BLM Preferred Alternative is the alternative that best fulfills the agency's statutory mission and responsibilities, considering economic, environmental, technical, and other factors. The modified BLM Preferred Alternative is the agency's preferred alternative in that it allows full recovery of the uranium minerals as required by federal regulations while reducing the potential for undue or unnecessary degradation of public lands.
- Other federal, state, and local agencies have jurisdiction (including inspection responsibilities) over certain aspects of the project. **Table 3.0** lists additional federal and state permits, policies, and actions that have been or will need to be approved as part of this project.
- **Table 5.0** summarizes the environmental protection measures and monitoring which will be implemented with the various agency requirements and guidance.
- Implementation of this Decision will not cause unnecessary or undue degradation of the public lands and is consistent with other legal requirements.
- Resource Management Plan Conformance: This decision is in conformance with the Lander Resource Management Plan (June 1987), the Lander Proposed RMP and Final EIS (2013, ROD pending 2014), and the ROD and Approved Casper RMP (BLM2007a).

- The Decision conforms to the Federal laws and regulations for locatable mineral development, including, but not limited to, the 43 CFR 3809 regulations, and the 1872 Mining Law, as amended.
- The Decision conforms with the requirements of the Federal Land Policy and Management Act (FLPMA) to manage public lands to support multiple use “in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values” and “in a manner which recognizes the Nation’s need for domestic sources of minerals” (FLPMA, Sec. 102((8) and (12)). The Decision is in accordance with this mandate.
- The Decision to select the modified BLM Preferred Alternative is consistent with the Governor’s Executive Order (EO 2011-5) and subsequent guidance for the protection of Greater Sage-Grouse.
- The Decision to select the modified BLM Preferred Alternative will help maintain revenue for local government and generate full-time and contract positions.
- A reclamation bond to provide for reclamation of both private and public lands will continue to be required and regularly reviewed and updated in compliance with both the 43 CFR 3809 regulations and the requirements of the NRC and the Wyoming Department Environment Quality-Land Quality Division (WDEQ-LQD).

Table 3.0 Major Federal and State Law, Regulations, and Applicable Permits

| Issuing Agency | Name and Description of Permit, License or Approval | Status |
|-------------------------|--|---|
| Federal Agencies | | |
| BLM | BLM, Revised Plan of Operations, Gas Hills Uranium ISR Project (WYW140590) | Basis for EIS |
| U.S. NRC | Source Material License(s) and Radioactive By-Products Material License, License: SUA-1548 Docket number: 40-8964 http://www.nrc.gov/info-finder/materials/uranium/licensed-facilities/smith-ranch.html | Active. License renewal currently under review by NRC since 2/1/2012 |
| U.S. EPA | Underground Injection Control (UIC) Class I and Class III wells | See WDEQ permits as WDEQ-Water Quality Division (WQD) has primacy for Class I wells and WDEQ-LQD has primacy for Class III wells. |
| | Concurrence on a water quality exemption for the aquifer exemption (40 CFR Parts 144 and 146) associated with the production zone through WDEQ-LQD | Completed August 2001 |
| | Construction Application for Storage Ponds for compliance with 40 CFR 61.252 (b)(1) & 40 CFR 192.32(a) as required y 40 CFR 61.252 (c) | Not submitted |

| State Agencies | | |
|---|---|------------------------|
| Wyoming Department of Environmental Quality (WDEQ) Water Quality Division (WQD) | UIC Class 1 Wells (3): Facility: WYS-013-00116 Permit: 13-262 | Pending, under review |
| (http://gem.wqd.apps.deq.wyoming.gov/Wellsearch.aspx?Permit=true) | | |
| Wyoming Department of Environmental Quality (WDEQ) Land Quality Division (LQD) | In-situ Permit to Mine 687. Includes Aquifer Exemption for in-situ mining and Class III injection wells for ISR operations. | Approved 2009. Active. |

4.0 Alternatives

The EIS analyzed four alternatives: the Proposed Action (**Section 4.1**), the No-Action Alternative (**Section 4.2.1**), the Resource Protection Alternative (**Section 4.2.2**), and the BLM Preferred Alternative (Decision, **Section 4.2.3**). These alternatives included the issues and concerns raised in public scoping comments and in collaboration with federal, state, and local agencies including tribal governments. Six additional alternatives were considered but eliminated from detailed study as discussed below in **Section 4.5**. All alternatives incorporated by reference the WDEQ Permit to Mine (PRI, 2009) and the NRC EA (NRC, 2004) including the analyses presented in these documents. The following is a brief statement of the alternatives. Additional information on the alternatives is provided in the FEIS. In light of the fact that all of the action alternatives, as stated above, used the approach to mining (including the different phases of the project) identified in the Proposed Action, the description of the Proposed Action is the most detailed.

4.1 Proposed Action

Cameco proposed the development of uranium deposits in the GHPA using the ISR process. ISR uses injected solution through fairly shallow wells (as compared to typical oil and gas wells) that are similar to conventional water wells to chemically liberate uranium from the ore-body where it had been deposited. The process requires installation of infrastructure such as water wells, pipelines, electrical lines, communication cables, processing facilities, waste water disposal facilities, roads, header houses, and power lines. Following infrastructure development, mine unit construction and operation will commence. Waste water will be disposed of via deep disposal wells and evaporation ponds. Once a particular mine unit has been mined-out, groundwater restoration will begin and surface reclamation will follow. Once mining is complete, final project reclamation and decommissioning will begin. Activities associated with the Proposed Action will occur throughout the projected 25-year span of the Project, and will include the following phases:

1. **Infrastructure Development** – Construction or improvement activities occurring within the GHPA, but outside of mine units, including: upgrades to Project infrastructure within the GHPA (roads, electrical lines, water disposal {evaporation ponds and disposal wells}, and pipelines); and construction or upgrades to processing facilities.

2. **Mine Unit Construction** – Construction activities occurring within mine units, including: delineation drilling; installation of injection, production and monitoring wells, pipelines, booster pump stations, header houses, and roads to header houses.
3. **Mine Unit Operation** – Operation of the ISR process to remove and process uranium; interim reclamation of the majority of the mine unit construction disturbance.
4. **Mine Unit Restoration and Reclamation** – Restoration of groundwater; and decommissioning and removal of mine unit infrastructure and final surface reclamation within each mine unit.
5. **Final Project Reclamation and Decommissioning** – Decommissioning and reclamation of surface and subsurface infrastructure within the GHPA but outside of the mine units, such as evaporation ponds, disposal wells, roads and satellite facilities.

Descriptions of the various aspects of the Project are derived in part from the Plan of Operations (PRI, 2011) and Cameco's WDEQ mine permit update – Permit 687 (PRI, 2009). General descriptions of ISR project components were derived from the U.S. NRC's Generic EIS for ISR facilities (U.S. NRC 2009b) in addition to the information in the WDEQ mine permit update. These activities may occur simultaneously while different mine units are constructed, operated, and reclaimed during the span of the Gas Hills Project. For the purpose of analysis conducted in the FEIS it was assumed that the surface within a mine unit will be completely disturbed during construction activities, although it is possible that small patches of vegetation may be left intact. Surface disturbance within a mine unit will be phased over several years at a rate that will depend on the uranium production rate and the availability of mine construction equipment and personnel. During operations, approximately 95 percent of the mine unit will undergo interim reclamation, and the remaining 5 percent will remain disturbed during operations for roads, header houses, well heads, and power lines. The need to access production and injection wells during mine unit operation will cause soil compaction and disturbance on an estimated 45 percent of the mine unit, for a total disturbance of 50 percent. The mine unit surface will again be completely disturbed after decommissioning, while the mine unit undergoes final reclamation. Final reclamation will include plugging and abandoning all wells, removing header houses and buried piping, and re-grading and seeding the disturbed surface.

The surface disturbance associated with facilities within the GHPA but outside of mine unit boundaries, such as evaporation ponds, deep disposal wells or mineral processing and water treatment facilities, will remain for the projected 25-year life of the Project. At the end of the Project, all of these facilities will be decommissioned or removed and disturbed areas will be reclaimed to the pre-mining land use. Disturbances associated with the Proposed Action are summarized in **Table 4.0**.

Table 4.0 Proposed Action Disturbance Summary

| Mine Component | Disturbance (acres) | |
|--|--|---|
| | Construction/ Decommissioning (+15 percent) ^a | Operation (+15 percent) ^a |
| Mine Unit Disturbance, Including Monitoring Well Ring | | |
| Mine unit 1 ^b | 156 (179) | 78 (90) |
| Monitoring well ring for Mine Unit 1 ^c | 11 (13) | 6 (7) |
| Mine unit 2 ^b | 365 (420) | 186 (210) |
| Monitoring well ring for Mine Unit 2 ^c | 10 (12) | 6 (7) |
| Mine unit 3 ^b | 90 (103) | 45 (52) |
| Monitoring well ring for Mine Unit 3 ^c | 10 (12) | 6 (7) |
| Mine unit 4 ^b | 255 (293) | 128 (147) |
| Monitoring well ring for Mine Unit 4 ^c | 9 (10) | 5 (6) |
| Mine unit 5 ^b | 111 (127) | 56 (64) |
| Monitoring well ring for Mine Unit 5 ^c | 8 (9) | 4 (5) |
| Subtotal for Mine Unit Disturbance | 1,025 (1,178) | 517 (595) |
| Project Infrastructure Outside of Mine Units | | |
| Roads/Utility Corridors ^d | 209 | 38 |
| Surface Facilities | | |
| Carol Shop Facility ^e | 0 | 0 |
| Satellite Facility ^f | 10 | 10 |
| Evaporation Ponds and Diversions ^g | 62 (66) | 62 (66) |
| Disposal Wells ^h | 6 | 3 |
| Topsoil Stockpiles | 3 | 3 |
| Subtotal for Disturbance Outside of Mine Units | 290 (294) | 116 (120) |
| Grand Total | 1,315 (1,472) | 633 (715) |

^a Mine unit area may expand based on results of delineation drilling; to account for this possible expansion, disturbance estimates for mine units and their associated monitoring well rings are conservatively increased by 15 percent.

^b Disturbance of the entire mine unit is anticipated during construction and decommissioning. Operational disturbance for facilities (primary and secondary roads, header housed, valve boxes, and well heads) is conservatively estimated to be 5 percent of the mine unit area. The remaining 95 percent of the mine unit will undergo interim reclamation for the duration of operations; however, an estimated 45 percent of the mine unit will be impacted by cross-country mechanized travel to well heads, for a total of 50 percent disturbance of a Mine Unit during operation.

^c Construction disturbance for monitoring well rings is based on a disturbance width of 18 feet. Operational disturbance for monitoring well rings is based on a disturbance width of 10 feet.

^d Road/utility corridor construction disturbance for new, existing, and upgraded existing roads is based on a width of 60 feet for primary roads, 40 feet for secondary roads, 50 feet for underground utilities, and 30 feet for overhead power lines. Road/utility corridor operational disturbance based on a width of 30 feet for primary roads and 15 feet for secondary roads; utility corridors will undergo interim reclamation during operations. Includes disturbance for approximately 1.4 miles (8.3 acres, based on a 50-foot-wide disturbance) for a process water pipeline that will not be adjacent to a proposed road.

^e The Carol Shop facility is located on 27 acres of existing disturbance and will not involve new disturbance under the Proposed Action.

^f Conservatively includes the disturbance for both proposed satellite facility locations although only 1 will be constructed. Disturbance for each location (approximately 5 acres) includes the building plus additional area for parking and access.

^g Disturbance associated with evaporation ponds 1 and 2 could each be increased by 2 acres for a total disturbance increase of 4 acres to accommodate additional evaporative surface area.

^h Based on disturbance of 2 acres for construction and 1 acre for operation of each of 3 proposed disposal well locations. Two deep disposal test wells were drilled in 2011; further development will require re-distribution.

4.2 Other Alternatives Analyzed in Detail

4.2.1 No Action Alternative

Under the No Action Alternative, Cameco's Project and Plan of Operations are denied. Existing infrastructure and disturbances currently bonded for reclamation will be removed and reclamation will commence on approximately 40.2 acres. Current land uses will not change, and exploration drilling could continue under 3809 Notice level activities.

4.2.2 Resource Protection Alternative

The Resource Protection Alternative (RPA), incorporated public and agency input, is similar to the Proposed Action in that the development of uranium deposits in the GHPA through implementation of the ISR process will be approved. The RPA utilizes the same processes and will take place over the same time period as the Proposed Action but has several features designed to reduce surface disturbance, travel to and from the GHPA, and impacts to soils, vegetation, and wildlife as well as increase and enhance reclamation of the Project:

- **Reduced Surface Disturbance through Annual, Site-Specific Development Planning:** Through limits on surface disturbance, the potential for soil compaction and erosion associated with construction in each mine unit were reduced thus increasing the potential for successful reclamation. Incorporation of the limits on surface disturbance will be enforced through Cameco's submitting annual, site-specific development planning to ensure that actual disturbance remains within planned areas.
- **Improved Likelihood of Successful Reclamation through Limits on New Construction:** Construction on the third mine unit will not be authorized until at least one well field in the first mine unit constructed achieved reclamation success criteria. Likewise, installation of well fields within the fourth mine unit will not begin until interim reclamation on at least one well field within the second mine unit constructed is successful, and construction will not begin on well fields within the final mine unit until interim reclamation on at least one well field within the third mine unit constructed has been demonstrated to be successful.
- **Reduced Surface Disturbance through the Use of Closed Loop Drilling System:** Excavated drilling mud pits will be eliminated and replaced with closed loop systems for the management of drilling fluids.
- **Reduced Surface Disturbance through Requiring Disturbance Offset for Additional Satellite Facility:** Disturbance associated with construction and operation of a second satellite facility will be offset through a requirement for reclamation of an equal area of existing unreclaimed or poorly reclaimed disturbance within the GHPA.
- **Additional On-site Processing:** Additional on-site processing will produce yellowcake slurry from resin, which will require fewer truck loads of uranium product resin to the Smith Ranch-Highland facility than will occur under the Proposed Action.

- **Enhanced Reclamation Goals and Timing:** Reclamation improvements will be realized through the use of rigorous reclamation goals and criteria, and by timely implementation of reclamation activities after completion of construction or operational activities.
- **Burial of New Power Lines:** Impacts to wildlife will be reduced by burial of all new power lines.

The total estimated construction disturbance for the RPA is 818 acres, or approximately 9 percent of the GHPA, a 40 percent reduction in surface disturbance relative to the Proposed Action. The total estimated operational disturbance for the RPA is 317 acres (approximately 3 percent of the GHPA), a more than 50 percent reduction in disturbance relative to the Proposed Action.

4.2.3 BLM Preferred Alternative (Decision)

The BLM-Preferred Alternative (BPA) was developed to incorporate comments received on the DEIS during the public review process. This alternative consists of Cameco's approach to development described under the Plan of Operations (**Section 4.1**) with the addition of several, but not all, of the resource protection features of the Resource Protection Alternative (**Section 4.2.2**) that are needed to prevent unnecessary or undue degradation. The RPA elements included in the BPA were revised to reflect public and agency input. Additionally, the BPA was modified after receiving comments on the FEIS and completing additional review. The BPA will utilize the same mining processes, waste disposal methods, and take place over the same period of time as the Proposed Action; however, the manner of incorporating resource protection measures into Cameco's operations is expanded. The BPA is summarized in this document, and details as to how the BPA will be implemented are described in **Appendix A**. The following additions to the Proposed Action will be implemented under this alternative to reduce the adverse impacts from surface disturbance, increase the potential for reclamation success, and protect wildlife, soils, and vegetation:

- **Annual Development Planning and Reporting:** In order to ensure that Cameco continues to comply with the conditions of approval described in this ROD as well as continually meet the Performance Standards at 43 CFR 3809.420 required to prevent unnecessary or undue degradation throughout the life of the project, the BLM will require submittal of an Annual Development Plan (ADP) by Cameco. The BLM would require approval of the ADP prior to initiating surface disturbance activities for each calendar year, including infrastructure development, mine unit construction, mine unit restoration and reclamation, or final project reclamation and decommissioning. The ADP will be included as supplemental information to Cameco's annual reporting requirements to the WDEQ-LQD. The ADP will include the following:
 - b. **Site-specific Reclamation Plans:** Cameco will submit to BLM a detailed reclamation plan for each year's planned construction disturbance in compliance with the Wyoming BLM Reclamation Policy (Appendix F of FEIS). This plan will include well field or mine unit level topsoil handling plans based on site-specific conditions within each planned disturbance area, determined by soil and vegetation characteristics, prior to commencing well field installation. Pre-site investigations will provide information for each development that will be used to develop

reclamation plans specific to each mine unit. Information will be gathered during pre-site investigations and delineation drilling, then submitted to BLM during the ADP process.

- c. **Reclamation Success Criteria:** Cameco will provide documentation of interim or final reclamation success based on standards listed in **Appendix A** and as determined during the ADP process.
- **Construction Timing Constraints:** In order to ensure that Cameco pursues a sequence of operations that facilitates a reasonable and customary reclamation sequence in compliance with 43 CFR 3809.420 (a)(2), BLM will not authorize well field installation within the third mine unit to be constructed until interim reclamation on at least one well field in the first mine unit to be constructed is successful per the applicable criteria agreed upon during the ADP process, and other well fields show significant progress towards meeting interim reclamation success determined during the Reclamation Success Criteria determination made in the ADP process. Similar constraints will be given to other mine units and are further described in the attached **Appendix A**.
 - **Additional On-site Processing:** At Cameco's option, additional on-site processing could be utilized to produce yellowcake slurry instead of resin beads for shipment to the Smith Ranch-Highlands facility.
 - **Compliance with the Cultural Resources Programmatic Agreement (PA):** The National Historic Preservation Act Section 106 process has not been completed for the preferred alternative, but the process for completing it in phases is allowed in a Programmatic Agreement among BLM, SHPO, and Cameco. Compliance with the PA is required in order to prevent undue or unnecessary degradation through implementation of Mitigation Measures described in **Table 5.0**. Prior to any surface disturbing activities, Cameco will submit a plan for that phase's development to the BLM for approval in accordance with mitigation measure **CR-3**. At Cameco's choosing, this can be included in the ADP.

The estimated maximum construction disturbance for the BPA is up to 1,315 acres, or approximately 15 percent of the GHPA, which is the same as the Proposed Action. BLM anticipates a reduction of the area and intensity of impact through implementation of the additional protection measures; however, impacts from the maximum potential disturbance have been disclosed for the purposes of analyses since the actual disturbance will not be known until annual development plans are submitted based on site-specific information.. The maximum surface disturbance of the BPA during operations is estimated to be 633 acres, or approximately 7 percent of the GHPA. For further information into how the BPA will be implemented for this project, please see **Appendix A**.

4.3 Selected Alternative

The BLM's Preferred Alternative with modifications is the alternative which the BLM believes will fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical, and other factors, in accordance with Section 101 of the NEPA and will prevent unnecessary or undue degradation in accordance with the 43 CFR 3809

requirements. The BLM selects the BLM Preferred Alternative with modifications as its Decision for this project. See **Section 4.2.3** and **Addendum 1** for the specifics of the BPA and the ways in which it differs from the Proposed Action and the RPA.

The BPA without modifications was not chosen because the BLM determined after evaluating comments to the FEIS and reviewing applicable regulations that several measures described as part of the BPA are not required to prevent unnecessary or undue degradation of public lands and would not meet the agency's statutory mission and responsibilities, considering economic, environmental, technical, and other factors. The following is a brief explanation of why certain measures of the BPA are not chosen:

- **Designation of a Reclamation Coordinator:** Requiring that Cameco designate a reclamation coordinator to manage all reclamation activities and prepare the ADP as described in **Section 4.2.3** could not be required by BLM in order to meet any of the Performance Standards at 43 CFR 3809.420. Additionally, requiring an employee or employees of Cameco's to complete these activities may pose unnecessary burdens on Cameco and hinder project development.
- **Use of Existing Access Roads:** Cameco committed to using existing access roads, where applicable, within the Plan of Operations. This requirement of the BPA is redundant and would not be required to prevent unnecessary or undue degradation.

The RPA was not chosen because the BLM determined after evaluating comments to the DEIS and then gathering additional information that several measures described in the RPA were not reasonable for this project either because they were technically not feasible or because the beneficial impacts from the measures were not required to prevent unnecessary or undue degradation. The basis for this decision is explained in detail in the FEIS. The following is a brief explanation of the BLM's decision:

- **Closed Loop Drilling:** This was not required because further evaluation of this element revealed that technical aspects of closed loop drilling will not result in reduced surface disturbance. Closed loop drilling is currently not used as a standard technology in ISR mining and will not be required to prevent undue or unnecessary degradation of public lands in accordance with 43 CFR 3809.420(a)(1). Additionally, requiring Cameco to utilize an un-proven technology may pose unnecessary burdens on Cameco and hinder project development.
- **Disturbance Offset for Additional Satellite Facilities:** This element was meant to incentivize Cameco to limit construction and disturbance within the GHPA by requiring Cameco to reclaim a previously disturbed area to reasonable standards if they constructed an additional satellite facility. Upon further analysis, the BLM determined that there were no areas within the GHPA that could be reclaimed to a more beneficial use without causing additional unnecessary disturbance.
- **Burial of New Power Lines:** Based on technical impracticalities and safety concerns identified during the public comment period, burying all new power lines will not be

feasible, could be cost prohibitive, and might not result in beneficial impacts when the additional surface disturbance caused by burying the lines is considered.

4.4 Environmentally Preferred Alternative

The environmentally preferred alternative is the No Action Alternative, as it will have the least impact on the environment, wildlife, and current uses of the land. However, when the benefits to the local economy from the development of the mine and the management considerations described in **Section 3** are considered, the Decision outweighs the limited adverse impacts to the environment, particularly as mitigated or limited by the environmental protection measures incorporated into the Decision.

4.5 Alternatives Considered but Eliminated from Detailed Analysis

In addition to the alternatives evaluated in detail, several alternatives were considered, but eliminated from detailed study. These alternatives are listed below, along with the primary reasons for elimination.

- **Conventional Mining:** Conventional mining involves the extraction of ore by open pit or underground mining methods, the processing of ore at a mill, and the disposal of mill tailings in surface impoundments. Given the facts that the GHPA is amenable to ISR mining methods based on local geology and hydrology, conventional mining could cause a greater disturbance footprint, and increase the potential for additional impacts, conventional mining methods were not analyzed in detail in the EIS.
- **Seasonal Operations:** This alternative involves seasonally limiting the operation of mining units within areas with wildlife timing limitation stipulations. Because ISR mining cannot be shut down for short periods due to technical, safety, and environmental reasons, seasonal operations were not analyzed in detail in the EIS.
- **Reduced Number of Evaporation Ponds:** This alternative will require that Cameco only construct two evaporation ponds as opposed to six as described under the Proposed Action. Under this alternative, excess waste water that could not be held within the two evaporation ponds will be disposed of in deep disposal wells. Because the ability of deep disposal wells to receive injectate is currently unknown, this alternative was dismissed from further analysis in the EIS.
- **No Temporary Facility Closure:** Under the NRC permitting requirements, Cameco may elect to place the ISR operations on temporary standby for up to 24 months with the possibility of extensions. The BLM was concerned that continued standby of ISR operations could result in unreclaimed surface disturbance and idle facilities without adequate decommissioning; however based on the current permit requirements and regulations, the BLM determined it was not necessary to conduct a detailed analysis of this alternative in the EIS.
- **Additional Transportation Routes:** Several alternative routes for transportation of resin or slurry from the Gas Hills to the Smith-Ranch Highland facility were considered.

Because of costs associated with upgrades and plowing for alternative routes, detailed analysis of identified potential alternative routes was not included in the EIS.

- **Alternative Radiologically Contaminated Waste Disposal Locations:** This alternative will identify a U.S. NRC, or NRC-agreement state, licensed facility for disposal of radiologically contaminated waste materials that was closer to the project than the identified disposal facility. No applicable alternate disposal facilities were identified, and the amount of trucks to this facility is considered minor. Therefore, this alternative was not analyzed in detail in the EIS.

5.0 Environmental Protection Measures, Mitigation, and Monitoring

5.1 Applicant Committed Measures

Applicant committed environmental protection measures include the measures that Cameco has committed to under their Plan of Operations (and subsequent correspondence), WDEQ Mine Permit, or NRC permit document. These measures were committed to by Cameco in order to comply with the applicable environmental statutory and regulatory programs developed through numerous federal, state, and local permitting and licensing processes, and were considered in the analysis of the Proposed Action presented in the EIS. Applicant committed and/or agency required mitigation measures are described in **Table 5.0**. Cameco will also be required to conduct monitoring related to the project as mandated by various regulations and permits, including: State wildlife protection regulations; air and water quality regulations; and the permits from the WDEQ-AQD, the WDEQ-LQD, and the NRC. Monitoring is included in **Table 5.0**.

5.2 Additional Measures

The Proposed Action was analyzed with reference to the provisions of the 1872 Mining Law, the 43 CFR 3809 regulations, the ROD and Approved Casper RMP (BLM 2007a), the Lander Resource Management Plan (1987), and the Lander Proposed RMP and Final EIS (2013). As of the date of this ROD, the BLM does not know when the drafted ROD for the Lander RMP revision will be signed. However, a comparison of the provisions of the 2013 Lander Proposed RMP to the 1987 RMP for the Gas Hills management area indicate no difference in management of actions proposed under the 43 CFR 3809 regulations. The Project Area is outside of Greater Sage-Grouse Core Area, and there are no special management provisions that will require a different decision whether the 1987 or the Lander RMP revision were in effect.

Based on BLM's review and on comments received during the NEPA process (comments and responses can be found in Appendix A in the FEIS), some additional measures are needed to address concerns not previously addressed through the other processes, meet the applicable performance standards described under 43 CFR 3809.420, and prevent unnecessary or undue degradation of public lands. These concerns are related to cultural resources and Native American concerns, paleontological resource concerns, disturbance of soils, transportation impacts, disturbance of vegetation, visual resources, and concerns associated with wildlife. The measures to address these concerns are summarized in **Table 5.0**. Additional monitoring measures will be required as long as this Decision is in place, and are also addressed in **Table 5.0**.

Table 5.0 Summary of Mitigation Measures

| Resource | Applicant Committed Mitigation or Monitoring Measures | BLM Required Mitigation Measures or Monitoring |
|---|--|--|
| Air | <p><u>Construction/Operation</u></p> <p>Site speed limits of 40 mph on primary roads, 30 mph on secondary roads, and 10 mph on 2 track roads will be applied to reduce wildlife/vehicle collisions and generation of dust.</p> <p>Water from an approved, permitted source will be applied as necessary for dust control</p> <p><u>Construction</u></p> <p>All areas disturbed for mine unit well, pipeline, and utility trenches will be reclaimed and re-vegetated as soon as possible after construction is completed.</p> <p><u>Air Monitoring</u></p> <p>Cameco will comply with all applicable state and federal regulations regarding air monitoring.</p> <p>Cameco will maintain a continuous air monitoring program at locations upwind and downwind relative to the permit boundary in order to ensure compliance with U.S. NRC regulations 10 CFR 20.1301, 20.1302, and 20.1501. The air monitoring program will include passive gamma and radon monitoring devices. Air particulate air sampling will be conducted at necessary intervals.</p> | No additional measures are required. |
| Cultural Resources and Native American Concerns | <p><u>Construction</u></p> <p>Cameco will enforce its standard policy that if any cultural resources, fossils, or remains are found during the excavation process that work will immediately cease at that location and the proper personnel will be notified. This language will be added to a Standard Operating Procedure. If the findings are determined to be significant, mitigation methods will be commenced.</p> | <p>Due to the large amount of known cultural resources that could be impacted through implementation of the Decision and to comply with the 43 CFR 3809.420(b)(8) Performance Standard, the following mitigation measures are conditions of approval to the Plan of Operations:</p> <p>CR-1: To minimize unauthorized collecting of archaeological material or vandalism to known archaeological sites, Cameco and their contractors, and all construction personnel, will attend mandatory training and be educated on the significance of cultural resources and the relevant federal regulations intended to protect them.</p> <p>CR-2: The recommended distance for avoidance of sites of traditional religious and cultural importance to Native American tribes will be determined through consultation with</p> |

Table 5.0 Summary of Mitigation Measures

| Resource | Applicant Committed Mitigation or Monitoring Measures | BLM Required Mitigation Measures or Monitoring |
|----------|---|--|
| | | <p>interested tribes by BLM. If any sites of traditional religious and cultural importance cannot be avoided by the recommended distance, mitigation measures will be developed in consultation with interested tribes, BLM, and SHPO then incorporated into a historic properties treatment plan prepared by Cameco.</p> <p>The following mitigation measure is required in order to ensure compliance with the Section 106 Process and PA.</p> <p>CR-3: Construction will not be started for any phase of the Project until the Section 106 process has been completed for that phase in accordance with the PA, and a Notice to Proceed, including any necessary additional stipulations, has been issued by the BLM Authorized Officer. This includes determining the need for monitoring during construction, negotiating appropriate mitigation measures on a site-by-site basis, developing historic properties treatment plans, and incorporating tribal concerns throughout the Section 106 process.</p> |

Table 5.0 Summary of Mitigation Measures

| Resource | Applicant Committed Mitigation or Monitoring Measures | BLM Required Mitigation Measures or Monitoring |
|---------------------------|---|--|
| Geology | <p><u>Construction</u></p> <p>Cameco does not currently plan to site any major construction on slopes greater than 25 percent; however, well installation could occur in areas where there are slopes at this grade. The hazard from landslides will be reduced by avoiding construction on steep slopes and existing landslides, or by stabilizing the slopes. Methods used for stabilization could include approaches such as preventing ground water from rising in the landslide mass by (1) covering the landslide with an impermeable membrane, (2) directing surface water away from the landslide, (3) draining ground water away from the landslide, and (4) minimizing surface irrigation. Additional approaches could include placing a retaining structure and/ or the weight of a soil/rock berm at the toe of the landslide or by removing mass from the top of the slope. Cameco will adopt a Standard Operating Procedure to meet this requirement.</p> | No additional measures are required. |
| Livestock Grazing | <p><u>Operation</u></p> <p>Fences surrounding evaporation ponds will be constructed in compliance with U.S. NRC regulations and BLM Handbook H 1741-1 standards to prevent both livestock and wildlife from accessing the ponds.</p> <p>Long-term fencing will be constructed around the mine unit production facilities and processing satellites to prevent access by sheep and cattle but still will allow wildlife access to forage (Section 2.3.2.5, Interim Reclamation of FEIS).</p> | <p>In order to comply with the 43 CFR 3809.420(a)(3) Performance Standard; the following mitigation measure is a condition of approval to the Plan of Operations:</p> <p>GRA-1: Damage to livestock and range improvements will be reported as quickly as possible to the BLM and affected livestock operators and corrective action will be taken by Cameco.</p> |
| Paleontological Resources | <p>If suspected fossil materials are uncovered during construction or mud pit excavation, work will stop immediately and the findings will be evaluated by an onsite geologist to determine their significance. If the findings are determined to be significant, additional mitigation measures will be taken. Mitigation could include consultation with a certified paleontologist, additional field surveys and possible salvage of any paleontological resources. Cameco will enforce a Standard Operating Procedure to cover the specific handling and requirements of paleontological resources</p> | <p>Due to the large amount of known paleontological resources that may be impacted through implementation of the Decision and to comply with the 43 CFR 3809.420(b)(8) Performance Standard, the following mitigation measures are conditions of approval to the Plan of Operations:</p> <p>PAL-1: Construction and drilling personnel will be instructed about the types of fossils they could encounter and the steps to follow if fossils are uncovered during mine facility construction. Instructions will stress the nonrenewable nature of</p> |

Table 5.0 Summary of Mitigation Measures

| Resource | Applicant Committed Mitigation or Monitoring Measures | BLM Required Mitigation Measures or Monitoring |
|---|---|---|
| <p>Paleontological Resources (Cont)</p> | <p>and their protection.</p> <p>In areas that have not been identified in the Paleontological Resource Survey, Cameco staff will be advised to spot check excavated material for bedrock disturbance.</p> | <p>paleontological resources and that collection or excavation of fossil materials from federal land without authorization is illegal.</p> <p>PAL-2: If suspected fossil materials are uncovered during construction or mud pit excavation, work will stop immediately to allow the BLM AO to assess the situation and determine if additional mitigation measures will be undertaken before further construction or operations continues.</p> <p>PAL-3: Monitoring of all ground disturbing activities by Cameco's paleontological consultant, working under a current Wyoming BLM Paleontological Resource Use Permit, will be required within 100 feet of any known paleontological locality (see Arcadis's Paleontological Resources Survey Report for specific locations).</p> <p>PAL4: During delineation drilling or well field construction, Cameco's paleontological consultant, working under a current Wyoming BLM Paleontological Resource Use Permit, will randomly spot check 25% of excavated mud pits and associated spoil piles. The paleontologist will also randomly spot check 25% of any area where bedrock (material other than topsoil) may be impacted by construction of roads or other facilities. Spot check inspection will take place <u>before</u> any materials are placed over exposed cuts and will involve visually examining excavated material. If spot checking indicates the presence of important fossils, a representative sample of these fossils will be collected and the data (including standard geologic descriptions) recorded for each locality. Based on the results of initial spot checks in each mine unit, or as other information becomes available, the location and amount of additional spot checks may be adjusted by agreement of BLM and Cameco to better focus paleontological work to areas where potential impacts to fossil localities are most likely to occur. Construction monitoring and spot checks will be performed by Cameco's paleontological consultant within PFYC 5 geologic formations in order to prevent unmitigated damage to important fossil localities.</p> |

Table 5.0 Summary of Mitigation Measures

| Resource | Applicant Committed Mitigation or Monitoring Measures | BLM Required Mitigation Measures or Monitoring |
|--------------|---|--|
| Soils (Cont) | <p>sites, evaporation ponds, culvert crossings, and primary and secondary access roads. These stockpiles will be constructed with 3:1 or flatter side slopes and will be seeded on the contour as soon as possible after construction using only the grass species of the BLM and WDEQ-LQD approved permanent seed mix. All long-term stockpiles will be bermed along the bottom to control sediment runoff and will be identified with highly visible signs containing the word "TOPSOIL" in letters at least 6 inches high. The signs will be placed on stockpile approach roads not more than 150 feet from the stockpile. Locations of long-term stockpiles and their volumes will be included in each LQD Annual Report.</p> <p>The need to conduct nutrient analyses of topsoil that has been stockpiled for more than one year will be assessed prior to redistribution of the topsoil. The size and depth of the stockpile, the amount of vegetation growth present, and the length of time the topsoil was stored will be taken into consideration. Nutrient analyses will not be performed on stockpiles that were less than 5 feet thick as the microbial activity within the soil will be maintained because of the limited thickness and resultant compaction. If after two growing seasons following topsoil application and seeding, revegetation problems are identified, nutrient analyses will be performed. Should the analyses indicate a nutrient deficiency, the area will be fertilized and reseeded.</p> <p>Typical short-term topsoil stockpiles result from excavation of drill hole and well mud pits. Typically, topsoil will remain in short-term stockpiles for no more than 6 months. This will allow for direct replacement of "live topsoil" on the disturbed surface. Small short-term stockpiles will be constructed with gentle side slopes that do not require berms to control sediment runoff.</p> <p><u>Mine Unit Construction</u></p> <p>Topsoil will be separately stockpiled within the mine unit disturbance area and replaced after well construction completion.</p> <p>Pre-construction contours will be restored and reclaimed after a well is constructed.</p> | <p>critical characteristics associated with these sites. These critical characteristics include but are not limited to soil erosivity, chemical and physical soil restrictive characteristics, steep slopes, and inadequate affective precipitation. Site-specific measures may consist of biodegradable or photodegradable erosion control blankets, waddles, special seed mixes, mulch, etc.</p> <p>SOL -5: Mud holes and washouts that develop in any road, including non-constructed 2-track well field roads, will be repaired in a timely manner to prevent topsoil resource damage resulting from vehicles being driven around damaged road features on to adjacent land surfaces. In the event of inclement weather conditions that cause poor road conditions, unnecessary travel on the 2-track roads will be prevented to avoid potential negative impacts to soils.</p> <p>SOL-6: During interim and final reclamation, compacted areas (typically any area that received repeated traffic or 3 or more passes by heavy equipment) will be decompacted, to the depth of compaction, by subsoiling (method for deep decompaction of soils, using a subsoiler, that does not result in soil mixing) or ripping to the depth of compaction as determined appropriate by BLM. Additionally, scarifying or disking may be utilized for decompaction of shallow soils that are less than 20 inches in depth to bedrock. This will help prepare the seed bed, encourage infiltration and help to prevent accelerated runoff and erosion. Scarification will only be used on shallow soils. This mitigation measure also will apply to decommissioning activities.</p> <p>SOL-7: A monitoring plan will be developed and submitted to the BLM for approval. The plan may be submitted as part of Cameco's annual report to WDEQ-LQD and ADP , and will address the following:</p> <ul style="list-style-type: none"> • Soil erosion/movement; • Vegetation: density, diversity (species composition) and age class (e.g., seeding, mature plant, decadent plant); • Weeds: density, species composition; |

Table 5.0 Summary of Mitigation Measures

| Resource | Applicant Committed Mitigation or Monitoring Measures | BLM Required Mitigation Measures or Monitoring |
|--------------|--|--|
| Soils (Cont) | <p>All areas disturbed for mine unit well, pipeline, and utility trenches will be reclaimed and revegetated as soon as possible after construction is completed as required by applicable regulations.</p> <p>Cameco will mark the entrance to well fields with signs advising traffic to stay on established 2-track access routes. In addition, Cameco employees will be trained to follow the mine site transportation policy of "one way in, one way out" to minimize disturbance.</p> <p><u>Storm Water Management</u></p> <p>All long-term topsoil stockpiles (e.g., soil removed from building areas, access roads, etc.) will be fully contained and vegetated. A containment ditch and berm will be constructed at the base of each stockpile to prevent any loss of topsoil before new vegetation could be established.</p> <p>All available disturbed areas, including topsoil piles, road cuts, etc. will be seeded with the approved seed mix at the first appropriate season, spring or fall, to control erosion and protect the topsoil resource. Should weather or other conditions prohibit disturbed areas from being seeded for more than 3 months, the area will be scarified with a disc, chisel plow, or similar apparatus, or mulched with a straw mulch crimped at a rate of 2 tons per acre, to assist in conserving the topsoil resource until seeding can be accomplished. The establishment of a temporary cover crop, such as barley, winter wheat, millet, or rye seeded at 30 pounds per acre also could be utilized to assist in protecting the topsoil resource.</p> <p>Areas with slopes greater than 25 percent will be mulched with straw mulch crimped at a rate of 2 tons per acre or planted with a temporary cover crop as soon as possible to assist in preventing erosion. Geotextile "mulched matting" and select erosion control products or current best practices will be utilized on areas where erosion control and vegetation establishment is particularly difficult. BMPs will be utilized to control sediment loss from stripped and or recently topsoiled and seeded areas.</p> | <ul style="list-style-type: none"> • Photo reference points; • Compliance with reclamation plan; • Documenting/monitoring protocols; • Timing of monitoring during the year; and • Identification of sites needing additional work or more reclamation activities outlining a site-specific prescription for actions to be implemented, including: <ul style="list-style-type: none"> · Re-seeding of areas not attaining reclamation success, · Soil stabilization, · Weed control, and · Mulching/fertilization or other cultural practices. |

Table 5.0 Summary of Mitigation Measures

| Resource | Applicant Committed Mitigation or Monitoring Measures | BLM Required Mitigation Measures or Monitoring |
|--------------|---|--|
| Soils (Cont) | <p>For exposed soil areas where construction activities are temporarily ceased for a period of 28 days or more, temporary soil stabilization measures will be implemented. These measures could include surface roughening, cover crop plantings, mulching or erosion control blankets. Temporary erosion protection will be emphasized in areas containing graded slopes, ditches, berms, and soil stockpiles. The primary method of revegetation will be the pitting and seeding method. To the extent possible, crossing perennial and intermittent drainages with drill equipment and vehicles will be avoided. If it becomes necessary to cross a drainage to reach a drilling site, a temporary stream crossing will be constructed at right angles to the channel with adequate embankment protection and installation of properly sized culverts. Once the drill location is reclaimed and seeded, the stream crossing will be removed and any surface damage reclaimed and seeded.</p> <p>Mobilization of the drill rig from hole to hole will be restricted to dry or frozen ground conditions.</p> <p><u>Reclamation</u></p> <p>Following the completion of any construction activity (six months to one year), the disturbed areas surrounding the facility, individual wells, pipelines, and roads will be reclaimed. Large disturbed areas will be reclaimed before new areas are disturbed.</p> <p>Following cleanup of the site and removal of contaminated materials, the evaporation ponds will be graded to their approximate original contour. Grading will include the replacement of approximately 56,400 cubic yards of material excavated during the construction of the evaporation ponds. Topsoil will be replaced and the area seeded.</p> <p>Following decontamination, the roads will be ripped and/or disked to relieve compaction. Excess imported gravel will be removed. Culverts will be removed and pre-mining drainages reestablished. All roads and ditches to be reclaimed will be graded and</p> | |

Table 5.0 Summary of Mitigation Measures

| Resource | Applicant Committed Mitigation or Monitoring Measures | BLM Required Mitigation Measures or Monitoring |
|----------------|--|--|
| Soils (Cont) | <p>contoured to blend with the surrounding terrain.</p> <p>All disturbed surfaces will be scarified and contoured, if necessary, followed by topsoil placement and seeding with the approved seed mix.</p> <p>Areas which were compacted will be scarified, ripped, and/or disked as necessary to relieve the compaction and prepare the sub grade for topsoil placement. Where needed, the surface will be graded and contoured to approximate original contours and to blend with the surrounding topography. In areas that were stripped of topsoil, the salvaged topsoil will be re applied in a single lift to avoid compaction. If necessary, the replaced topsoil will be disked to create a proper seed bed. Seed bed preparation will only be performed under appropriate soil and climatic conditions.</p> <p>Final reclamation of mine units will be performed as soon as practicable after ground water restoration has been completed and approved by the regulatory agencies. Wells will be plugged and all surface structures and power lines removed.</p> <p>Compacted areas will be scarified, ripped, and/or disked as necessary to relieve the compaction and prepare the sub grade for topsoil placement. Where needed, the surface will be graded and contoured to approximate original contours to blend with the surrounding topography. In areas stripped of topsoil, the salvaged topsoil will be re-applied. If necessary, the replaced topsoil will be disked to create a proper seed bed. Seed bed preparation will only be performed under appropriate soil and climatic conditions.</p> <p>The reclamation goal at the Project will be to return the land to a condition that will sustain the pre-mining land uses.</p> | |
| Transportation | <p><u>Operation/Construction</u></p> <p>Cameco intends to maintain the Dry Creek Road to ensure the safety of the employees and contractors onsite. Maintenance includes ensuring the road is graded to minimize ruts, keeping a crowned surface for proper drainage and the ditch line free of debris. If additional gravel is needed Cameco will work with Fremont County and the BLM to secure a material that is</p> | <p>Because no access agreements are in place on proposed access roads that may be utilized through implementation of the Decision and to comply with the 43 CFR 3809.420(b)(1) Performance Standard, the following mitigation measure is a condition of approval to the Plan of Operations:</p> <p>TRA-1: Cameco will obtain BLM's prior approval of any maintenance or snow removal activity that will upgrade or expand the</p> |

Table 5.0 Summary of Mitigation Measures

| Resource | Applicant Committed Mitigation or Monitoring Measures | BLM Required Mitigation Measures or Monitoring |
|------------|--|--|
| | acceptable to all parties. | footprint (new disturbance) of the Dry Creek Road or on other roads used for access outside the GHPA that are not maintained by other entities such as the State of Wyoming or counties. Appropriate permits, approvals, or agreements must be made for use of roads maintained by other entities. The BLM will consider potential impacts to wildlife and cultural resources in their review. |
| Vegetation | <p><u>General Construction</u></p> <p>Following completion of delineation drilling, wellfield design will locate injection and recovery wells outside the boundary of wetlands. Under the Proposed Action, wetlands temporarily could be disturbed for construction of roads. Cameco will work with the WDEQ and U.S. Army Corps of Engineers (USACE) to define jurisdictional wetlands, and comply with the Section 404 or Section 401 permitting process, as appropriate. These processes will include development of a mitigation plan.</p> <p>Cedar Rim Thistle surveys will be completed 1 year prior to development of each mine unit and associated access roads within the modeled habitat boundary.</p> <p><u>Mine Unit Construction</u></p> <p>All fencing installed at the Project will be of a temporary nature to protect the wellfield areas during operations and to protect vegetated areas following reclamation. Fence design and specifications will follow the BLM specifications as they are the dominant land owner within the permit area.</p> <p><u>Operations</u></p> <p>Cameco will comply with Operations Plan requirements for noxious weeds. During operations and following surface reclamation, noxious weeds will be controlled by annual spraying, on an as needed basis. This procedure will continue until final bond release is obtained. Noxious Weed Control will be performed only by individuals that have appropriate state and BLM pesticide certifications.</p> | <p>Because of the impacts likely to occur to vegetation resources under the Decision; to comply with the 43 CFR 3809.420(b)(3) Performance Standards; and to comply with the Wyoming BLM Reclamation Policy, the following mitigation measures are conditions of approval to the Plan of Operations:</p> <p>VEG-1: Project disturbances will avoid wetlands to the extent possible as identified in the Mine Permit Application and the vegetation surveys conducted by HWA (HWA 2011a). Erosion and sediment BMPs as described in the SWPPP (PRI 2009), will be implemented within 500 feet of wetlands located within the vicinity of surface disturbance associated with the Project.</p> <p>VEG-2: In areas of LRP due to saline and/or alkaline soils, the saline and alkaline tolerant seed mix in Table 4.13-3 of the FEIS, or an alternative seed mix approved by BLM, will be used.</p> <p>NOX-1: Cameco will develop a noxious weed management plan that includes pre-construction surveys, education of construction and operation personnel during construction and operation activities, the washing of vehicles and equipment before entering and leaving the GHPA, herbicide spraying, pre-construction weed control methods, and annual monitoring. Survey information collected during pre-construction surveys will include species name, GPS location of weed infestations, percent cover, and approximate size of weed infestations. Control of noxious and invasive species will be consistent with the Vegetation Treatments on Public Lands Administered by the BLM in the Western U.S. (BLM 2007b), and could include chemical, mechanical, and biological methods. Herbicide treatment methods also will be consistent with BLM (2007c)</p> |

Table 5.0 Summary of Mitigation Measures

| Resource | Applicant Committed Mitigation or Monitoring Measures | BLM Required Mitigation Measures or Monitoring |
|-------------------|--|---|
| Vegetation (Cont) | <p><u>Reclamation</u></p> <p>The seed mixture used will be comparable to mixes used on other reclamation mines in the area, and was approved by the WDEQ-LQD and the BLM in 2008. This mix was designed to establish a vegetative cover consistent with the pre-mining land use of livestock grazing and wildlife habitat. Should any approved seed varieties become unavailable or cost prohibitive, or more locally adapted species become available, reasonable substitutions could be made after prior consultation with and approved by the BLM and WDEQ-LQD.</p> <p>The success of revegetation in meeting the land use goal will be assessed prior to application for bond release by utilizing the COMA method as described in WDEQ-LQD Rules and Regulations Chapter 3, Section 2(d)(vi)(C) and LQD Guideline No.2-Vegetation (November 1997).</p> <p>At the time of bond release on all areas, including previously disturbed and reclaimed areas, the actual methodology to be used for evaluating vegetation success will be submitted to WDEQ LQD at least 6 months prior to field sampling. Revegetation will be considered successful when, at the end of the bonding period, the following has been demonstrated:</p> <ul style="list-style-type: none"> · The vegetation species of the reclaimed land are self-renewing under natural conditions prevailing at the site; · The total vegetation cover of perennial species (excluding noxious weed species) and any species in the approved seed mix is at least equal to the total vegetation cover of perennial species (excluding noxious weed species) on the area before mining; · The species composition and diversity are suitable for the approved post-mining land use; and · The above are achieved during one growing season, no earlier than the fifth full growing season on the reclaimed lands. <p>In the unlikely event that any trees must be removed, Cameco will inventory such trees prior to removal and include that information and replacement cost in the appropriate annual report and surety</p> | <p>guidance including the filing of a Pesticide Use Proposal (PUP) with the Lander and Casper BLM FOs to track and approve pesticide use prior to spraying. It is recommended that the Fremont County Weed and Pest be consulted in the development of the noxious weed management plan.</p> <p>NOX-2: Cheatgrass control methods on BLM-administered lands will be determined in consultation with the BLM and will focus on preventing the further spread of cheatgrass into areas disturbed by the Project.</p> <p>SSP-1: Cameco will perform pre-construction surveys for persistent sepal yellowcress, Cedar Rim thistle, and Rocky Mountain twinpod in identified habitat (HWA 2011 a,b) 1 year prior to development of each mine unit and associated access roads within the modeled habitat boundary. Locations of any populations or individuals of Persistent sepal yellowcress, Cedar Rim thistle or Rocky Mountain twinpod identified during pre-construction surveys will temporarily be flagged during construction. Surface disturbance will not occur within 100 feet of any identified individuals or populations.</p> |

Table 5.0 Summary of Mitigation Measures

| Resource | Applicant Committed Mitigation or Monitoring Measures | BLM Required Mitigation Measures or Monitoring |
|-------------------|--|---|
| Vegetation (Cont) | <p>revision submitted to WDEQ-LQD.</p> <p>In those areas where there were few or no noxious weeds prior to being affected by the ISR operations, Cameco will control and minimize the introduction of noxious weeds into the revegetated areas for at least 5 years after the initial seeding had taken place.</p> <p>The primary method of revegetation will be the pitting and seeding method. In limited areas where pitting and seeding will potentially interrupt surface water flow, such as incised drainage channels, areas with slopes steeper than 3:1 (horizontal to vertical) and permanent topsoil stockpiles, drill or broadcast seeding will be utilized.</p> <p>Storm intensity may affect the success of revegetation within a mine unit. Should a major event destroy a revegetation effort, Cameco will reseed and revegetate the disturbed area at the next available seeding window.</p> <p><u>Decommissioning</u></p> <p>All reclaimed areas will remain fenced for a period of at least 2 years, or until the vegetation is capable of renewing itself with properly managed grazing and without supplemental irrigation or fertilization:</p> <p>The fencing will not be removed until the BLM and WDEQ agreed that the revegetated areas are ready for livestock grazing.</p> | |
| Visual | <p><u>General Construction</u></p> <p>Aboveground facilities will be painted with low-reflectivity paints in colors that will blend with the natural environment. The BLM color chart will be consulted in selecting an appropriate paint color or colors.</p> | <p>Because of the impacts to occur to visual resources under the Decision; to comply with the 43 CFR 3809.420(a)(3) Performance Standard; the following mitigation measure is a condition of approval to the Plan of Operations:</p> <p>VRM-1: Pursuant to the VRM Class IV management objective, indicating that visual effects should be minimized to the extent possible, aboveground facilities will be painted with low-reflectivity paints in colors that blend with the natural environment. The BLM color chart provides a tool for use in selecting an appropriate paint color or colors.</p> |

Table 5.0 Summary of Mitigation Measures

| Resource | Applicant Committed Mitigation or Monitoring Measures | BLM Required Mitigation Measures or Monitoring |
|-----------------|--|--|
| Water Resources | <p><u>General Construction</u></p> <p>To the extent possible, crossing perennial and intermittent drainages with drill equipment and vehicles will be avoided. If it becomes necessary to cross a drainage to reach a drilling site, a temporary stream crossing will be constructed at right angles to the channel with adequate embankment protection and installation of properly sized culverts. Once the drill location is reclaimed and seeded, the stream crossing will be removed and any surface damage reclaimed and seeded.</p> <p>Waste water disposal facilities such as evaporation ponds and deep disposal wells will be designed and constructed to meet all applicable criteria and standards as required and permitted by WDEQ, NRC, and EPA.</p> <p><u>Operation</u></p> <p>Cameco will continue to work with the Nuclear Regulatory Commission and Wyoming Department of Environmental Quality to apply spill leak/detector monitoring devices that are acceptable to both agencies. The present accepted NRC and WDEQ-LQD fluid spill detection practice includes a catchment basin with a conductivity probe or level transducer for each injection and production well connected to a header house PLC.</p> <p><u>Storm Water Management</u></p> <p>Sedimentation will be controlled through the use of erosion control and channel stabilizing measures such as:</p> <p>ditches and berms; conveyance channels; rock/rip rap; outlet protection; sediment traps or basins; straw bale barriers; silt fence; and check dams.</p> <p>Fuel storage areas will be managed to prevent off-site drainage to or from the area. All petroleum products stored at the site will be</p> | No additional measures are proposed. |

Table 5.0 Summary of Mitigation Measures

| Resource | Applicant Committed Mitigation or Monitoring Measures | BLM Required Mitigation Measures or Monitoring |
|---------------------------|--|--|
| Water Resources (cont) | <p>contained in approved and appropriately labeled aboveground containers. Secondary containment will be accomplished by berming and/or ditching the perimeter of the entire fuel storage area.</p> <p>During active construction, qualified personnel will inspect disturbed areas, control measures, and locations where vehicles entered or exited the site, at least once every 14 calendar days and within 24 hours of the end of any precipitation and/or snow melt event which exceeds 0.5 inches. During seasonal shutdowns qualified personnel will inspect the site at least once every month, unless snow cover or frozen ground conditions exist over the entire site for an extended period with no melting conditions.</p> <p><u>Surface Water and Groundwater Monitoring</u></p> <p>Three surface water sites and 1 groundwater site will be routinely monitored during the life of the Project as part of the area-wide monitoring program. These sites will include the following:</p> <ul style="list-style-type: none"> • Cameron Spring Reservoir which is located south and upgradient of the proposed Mine Unit 1 in the SESE Qtr/Qtr of Section 2, T32N, R90W. Monitoring will include discharge rate and water quality from the spring; • Stock Pond in Section 32, a small constructed pond near the northern end of proposed Mine Unit 1, in the SWNE Qtr/Qtr of Section 32, T33N, R89W. Monitoring will include quarterly grab samples that will be analyzed for conductivity, pH, natural uranium, and radium-226; • WCC which flows through proposed Mine Unit 4 has 2 established surface water monitoring stations. Monitoring will include quarterly grab samples at the start of Mine Unit 4 construction; and • The current industrial water supply well and any new wells drilled by Cameco for the Carol Shop facility will be monitored following the requirements of the appropriate state and federal agencies. <p>Additional monitoring wells will be installed as part of mine unit</p> | |

Table 5.0 Summary of Mitigation Measures

| Resource | Applicant Committed Mitigation or Monitoring Measures | BLM Required Mitigation Measures or Monitoring |
|----------|---|---|
| | <p>development and will include perimeter wells that surround and monitor the mine unit as well as wells to monitor overlying and underlying aquifers. A network of regional groundwater monitoring wells already exists at the GHPA that was previously sampled and measured to establish pre-mining baseline groundwater quality and limited static groundwater elevations.</p> | |
| Wildlife | <p><u>Mine Unit Construction</u></p> <p>The drilling mud pits will be fenced using 4 feet high by 16 feet wide rigid wire grid fence panels wired to steel T-posts (hog panels) to protect from human and animal intrusion until the contained fluid was removed or evaporated, at which time the pits will be refilled and the fencing removed.</p> <p>Primary and secondary power distribution lines will be built to the latest approved methods. All of the distribution power in the well fields will be buried rather than be constructed overhead. To reduce potential electrocution and collision impacts to migrating and foraging migratory bird species, and to eliminate new perches for raptor and corvid species, thus reducing the potential for predation on greater sage-grouse, overhead power lines will employ anti-perching and anti-roosting devices.</p> <p>Cameco will follow and abide by the Sage-grouse Executive Order (SGEO). Cameco will work with the Wyoming Game and Fish Department as the lead agency when dealing with sage-grouse issues, as they have the management authority over greater sage-grouse. Cameco will also work collaboratively with U.S. Fish and Wildlife Service and BLM to ensure a uniform and consistent application of the SGEO is followed.</p> <p>To protect breeding raptor species, Cameco commits to conducting annual surveys in suitable habitat to identify active raptor nesting sites prior to construction and to avoid beginning construction in active raptor nest sites by implementing seasonal protection buffers zones (as established by U.S. Fish and Wildlife Service).</p> <p><u>Operation</u></p> | <p>In order to minimize impacts to Wildlife resources under the Decision; to comply with the 43 CFR 3809.420(b)(7) Performance Standard; and to comply with the Lander and Casper Field Office RMP's, the following mitigation measures are a condition of approval to the Plan of Operations:</p> <p>WFM-1: Cameco will coordinate with the BLM, WGFD, USFWS, as applicable, to conduct breeding migratory bird and greater sage-grouse surveys and implement appropriate mitigation, such as buffer zones around occupied nests, as needed.</p> <p>WFM-2: Cameco will conduct aerial and/or pedestrian nesting raptor surveys, as applicable, through areas of suitable habitat to identify active nest sites within the GHPA, prior to construction.</p> <p>WFM-3: To protect bat species and migratory bird species, including raptors and waterfowl, Cameco will, in coordination with the appropriate state and federal agencies (DEQ, USFWS, WGFD, and BLM) develop a deterrent system prior to construction of the ponds. Cameco will then monitor ponds to ensure the effectiveness of the deterrents and will further consult and apply adaptive management to the deterrents as needed. Any bird mortalities will be reported to the USFWS immediately.</p> <p>WFM-4: To reduce potential collision impacts to migratory bird species, all existing power lines will be retrofitted to comply with APLIC (2006) guidelines. In areas identified as having high bird use (e.g., wetlands) existing power line also will be fitted with high visibility markers. In addition, to minimize electrocution to raptor species, power lines in high raptor use areas (e.g., within 0.75 of a nest site and within 0.25 mile of a white-</p> |

Table 5.0 Summary of Mitigation Measures

| Resource | Applicant Committed Mitigation or Monitoring Measures | BLM Required Mitigation Measures or Monitoring |
|-----------------|--|---|
| Wildlife (Cont) | <p>In order to minimize potential adverse impacts from the evaporation ponds to terrestrial wildlife and special status species, Cameco will coordinate with the Wyoming Department of Environmental Quality, BLM, the Wyoming Game and Fish Department and the U.S. Fish and Wildlife Service in developing mitigation action plans for the ponds and implement measures to remove, exclude, or deter wildlife use.</p> <p>Proposed mitigation for raptor nests could include construction of alternate nest sites on natural features, or the erection of appropriately sized nesting platforms.</p> <p>Site speed limits of 40 mph on primary roads, 30 mph on secondary roads, and 10 mph on 2 track roads will be implemented to reduce wildlife/vehicle collisions and generation of dust.</p> <p>Signage will be posted in the GHPA to notify Project personnel that wildlife and livestock may be encountered along the road.</p> <p>To protect bat species and migratory bird species, including raptors and waterfowl, Cameco will monitor storage ponds to ensure ponds are not used by bird species. If significant use is observed, Cameco will consult with the Wyoming Department of Environmental Quality, BLM, the Wyoming Game and Fish Department and the U.S. Fish and Wildlife Service in developing mitigation action plans for the ponds. Such actions may include propane cannons, brightly colored pennants and predator silhouettes/decoys.</p> <p><u>Wildlife Monitoring</u></p> <p>A Wildlife Monitoring Plan was prepared in consultation with and approved by the BLM, the lead agency for Project-related wildlife issues, as well as the WGFD and the USFWS. The plan describes the methodology and frequency of annual monitoring as well as listing the specific species to be monitored. The plan will be reviewed annually with the BLM to address any necessary changes. The most recent update was submitted for BLM approval in August 2013, and is included as Appendix C of the</p> | <p>tailed prairie dog colony) will be fitted with anti-perching devices.</p> <p>WFM-5: To limit West Nile virus and other insect-borne diseases, Cameco will consult with appropriate state and federal agencies to determine and implement insect control methods for water impoundments, which could include larvicides or other approved control methods.</p> <p>WFM-6: To prevent migratory birds and other small wildlife species from entering open pipes and posts, Cameco will permanently cap or fill pipes which may be necessary for fencing or other Project components. Cameco also will cap or fill any previously existing hollow pipes or posts encountered within the GHPA during construction or operation.</p> <p>SSS-1: To limit raptor and corvid predation on greater sage-grouse, new power lines within 2 miles of occupied greater sage-grouse leks (Black Mountain, West Canyon Creek, and Leigh Point) will be fitted with anti-perching devices (e.g., spikes, triangles, inverted "Y's", etc.).</p> <p>SSS-2: Noise mitigation for greater sage-grouse leks will be applied on a site-specific basis, in coordination with WGFD.</p> <p>The following are Recommended Mitigation Measures (RMM) ONLY and ARE NOT REQUIRED:</p> <p>RMM-1: The BLM recommends, but does not require, that in order to protect breeding migratory bird species, surface disturbing activities during construction will be restricted within suitable habitat between May 15 and July 15.</p> <p>RMM-2: To protect greater sage-grouse, the BLM recommends, but does not require, that surface disturbing activities be restricted during construction between March 15 and June 30 on lands that meet the following characteristics:</p> <ol style="list-style-type: none"> 1. previously undisturbed land, 2. characterized as greater sage-grouse habitat (lands mapped as bottomland big sagebrush and mixed sagebrush grassland on Figure 3.13-1 of FEIS) 3. within 2 miles of an occupied lek, for lekking, nesting, |

Table 5.0 Summary of Mitigation Measures

| Resource | Applicant Committed Mitigation or Monitoring Measures | BLM Required Mitigation Measures or Monitoring |
|-----------------|---|--|
| Wildlife (Cont) | <p>FEIS.</p> <p>Annual surveys that are part of the revised monitoring plan include: occupied greater sage-grouse leks within 2 miles of the GHPA, active raptor nests within 1 mile of the GHPA, mountain plover presence/absence surveys in known habitat within 0.25 mile of the GHPA, and surveys for burrowing owl occurrence and sign. Opportunistic sightings of other wildlife species also will be included in annual reporting. After construction of the evaporation ponds, Cameco will monitor potential waterfowl activities in and around the ponds and will be required to report any migratory bird losses.</p> | <p>and brooding greater sage-grouse.</p> <p>RMM-3: The BLM would also recommend, but not require, that any additional ground disturbing activities required during operation and maintenance activities between May 1 and July 15 for nesting migratory birds and between March 15 and June 30 within 2 miles of an occupied lek, for lekking, nesting, and brooding greater sage-grouse, be coordinated with the BLM, WGFD, and USFWS (as applicable) to protect breeding migratory bird species and greater sage-grouse.</p> <p>RMM-4: To protect nesting mountain plovers, nest surveys will be conducted if construction were to occur during the breeding season (April 10 to July 10). If a nest is located, the BLM will recommend, but will not require, a 0.25 mile protection buffer be implemented around the active nest until the birds fledge. Cameco will follow the requirements of the Gas Hills Wildlife Monitoring Plan (Appendix C of FEIS), which will be updated as needed.</p> <p>RMM-5: To protect breeding raptor species, Cameco will avoid all existing raptor nest sites and surface-disturbing activities during the breeding season (February 1 to July 31 for golden eagles, April 1 to September 15 for burrowing owls, and February 1 to July 31 for all other raptors) within applicable nest protection buffers (i.e., 1 mile for ferruginous hawk and golden eagle or 0.75 mile for all other raptors, unless site-specific, species-specific distances are determined and approved by the BLM). Since a number of variables (e.g., nest location, species' sensitivity, breeding, phenology, topographical shielding) will determine the level of impact to a breeding pair, appropriate protection measures, such as seasonal constraints and establishment of buffer areas, will be implemented at active nest sites on a species-specific and site-specific basis, in coordination with the BLM.</p> |

6.0 Public Involvement and Agency Consultation and Coordination

Public involvement and agency consultation were conducted in accordance with NEPA guidelines (40 CFR 1506.6 and 1501.6). Permits issued by the NRC and WDEQ allowed for applicable public notice and comment periods to fulfill each agencies requirements. The public scoping period for the BLM's NEPA review commenced when the Notice of Intent (NOI) to prepare an EIS was published in the Federal Register (FR) on September 7, 2010 (75 FR 54384). In addition to the NOI, the BLM mailed 312 Dear Interested Party letters on October 18, 2010, notifying the public about the Project, the intent to prepare an EIS, and providing informaiton about the scoping meetings. Display advertisements were placed in local newspapers providing information about the public scoping meeting dates, times, and locations.

Additionally, the BLM issues press releases announcing the intent to prepare an EIS and information about the upcoming public scoping meetings. A press release was issued on September 8, 2010, announcing the BLM's intent to prepare an EIS; on October 13, 2010, announcing the public scoping meetings in Casper, Riverton, and Lander, Wyoming; and a final press release was issued on November 8, 2010, announcing an additional public scoping meeting in Jeffrey City, Wyoming. These meetings were held between October 26, 2010 and November 18, 2010.

The BLM received a total of 21 comment submittals that were broken down into 215 individual comments during the public scoping period. These comments were evaluated to identify key issues and concerns and to develop alternatives.

The BLM identified state agencies, local governments, tribal governments, and other federal agencies with jurisdiction or special expertise on potentially impacted resources associated with the Gas Hills Project. 26 agencies were contacted in early December 2010 to determine their interest in participating as Cooperating Agencies. 20 agencies requested that they be considered cooperating agencies including: Fremont County Commission, USEPA, USWFS, the Office of the Wyoming Governor, and other state agencies. Tribes, individuals, organizations, and agencies have been and continue to be consulted regarding the Project.

Native American consultation was initiated on May 6, 2011, with notification of the BLM's intent to prepare an EIS for the Gas Hills Project to 14 tribes. The Standing Rock Sioux Tribe and Northern Cheyenne Tribe responded to the letter and indicated their interest in participating in the consultation efforts. The Northern Cheyenne later chose to defer to the local tribes for the remainder of the Project. On May 7, 2012, the BLM sent a second letter informing the tribes of the cultural resources inventories previously and recently conducted within the GHPA. The Standing Rock Sioux Tribe, Crow Nation, and Ute Indian Ute Tribe responded to the letter. From May 16 to June 5, 2012, the BLM conducted a follow-up call with the 14 tribes to verify receipt of the May 7 letter and to invite the tribes to participate on a conference call tentatively scheduled for mid-June 2012. In early June 2012, the BLM invited the 14 tribes, plus the Sisseton-Wahpeton Oyate Tribe, to participate on a conference call scheduled for June 13, 2012. Of the 15 tribes, 6 tribes were able to participate on the call. The 6 tribes included Northern Arapaho Tribe, Shoshone- Bannock Tribe, Rosebud Sioux Tribe, Sisseton-Wahpeton Oyate

Tribe, Yankton Sioux Tribe, and Standing Rock Sioux Tribe. From September 17 to 21, 2012, the BLM conducted a field tour of the GHPA. A total of 6 tribes participated in the field tour. The 6 tribes included the Northern Arapaho Tribe, Eastern Shoshone Tribe, Crow Nation, Oglala Sioux Tribe, Fort Peck Assiniboine Sioux Tribes, and Sisseton-Wahpeton Oyate Tribe.

The BLM published a Notice of Availability (NOA) of the Draft EIS in the Federal Register on November 16, 2012 (77 FR 68814). The BLM mailed postcards or documents notifying the public of the availability of the DEIS on the BLM website to 409 interested parties, including federal, state, local officials and agencies, special interest groups, area libraries and newspapers, and individuals and affected permittees. Open house style public meetings were held in Riverton and Lander, Wyoming on December 4 and 5, 2012. A 45 day comment period following the notice in the Federal Register was scheduled to end on December 31, 2012; however, due to requests from the public, the BLM extended the comment period to January 31, 2013. The BLM received comments on the DEIS from 22 parties.

The BLM published the NOA for the Final EIS in the Federal Register on November 1, 2013 (78 FR 65698). The BLM mailed postcards or documents notifying the public of the availability of the FEIS on the BLM website to 409 interested parties, including federal, state, local officials and agencies, special interest groups, area libraries and newspapers, and individuals and affected permittees. A 30 day review period followed the notice in the Federal Register and ended on December 2, 2013. Three parties submitted letters with comments during this time. The letters were read thoroughly for substantive comments, and responses were drafted. A summary of the comments and BLM's responses, and the original letters, are included in **Appendix B** of this ROD.

7.0 Appeal of a Decision under 43 CFR 3809

If you are adversely affected by this decision, you may request that the Wyoming BLM State Director review this decision. If you request a State Director Review, the request must be received in the Wyoming BLM State Office at P.O. Box 1828, Cheyenne, WY 82003-1828, no later than 30 calendar days after you receive or have been notified of this decision. The request for State Director Review must be filed in accordance with the provisions in 43 CFR 3809.805. This decision will remain in effect while the State Director Review is pending, unless a stay is granted by the State Director. If you request a Stay, you have the burden of proof to demonstrate that a Stay should be granted.

If the State Director does not make a decision on your request for review of this decision within 21 days of receipt of the request, you should consider the request declined and you may appeal this decision to the Interior Board of Land Appeals (IBLA). You may contact the BLM State Office to determine when BLM received the request for State Director Review. You have 30 days from the end of the 21-day period in which to file your Notice of Appeal with this office at the Lander Field Office, 1335 Main Street, Lander, WY 82520 which we will forward to IBLA.

If you wish to bypass a State Director Review, this decision may be appealed directly to the IBLA in accordance with the regulations at 43 CFR 3809.801(a)(1). Your Notice of Appeal must

be filed with the Lander Field Office, 1335 Main Street, Lander, WY 82520 within 30 days from receipt of this decision. As the appellant, you have the burden of showing that the decision appealed from is in error. BLM Form 1842-1 contains information on taking appeals to the IBLA.

This decision will remain in effect while the IBLA reviews the case, unless a stay is granted by the IBLA. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

7.1 Appeal of a Decision under 43 CFR 3715

If you are adversely affected by the decision regarding Use and Occupancy, you may appeal to the IBLA under 43 CFR part 4. If you appeal this decision, you must file a Notice of Appeal to the Lander Field Office at 1335 Main Street, Lander, WY 82520 within 30 days from receipt of this decision. As the appellant you have the burden of showing that the decision appealed from is in error. BLM Form 1842-1 contains information on taking appeals to the IBLA.

This decision will remain in effect while the IBLA reviews the case, unless a stay is granted by the IBLA. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

7.2 Request for a Stay

If you wish to file a petition pursuant to regulations 43 CFR 4.21 for a stay of the effectiveness of this decision during the time that your appeal is being reviewed by the IBLA, the petition for a stay must accompany your notice of appeal. A petition for a stay is required to show sufficient justification based on the standards listed below. Copies of this notice of appeal and petition for a stay must also be submitted to each party named in the decision, to the IBLA, and to the appropriate Office of the Solicitor (see 43 CFR 4.413) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

Standards for Obtaining a Stay

Except as otherwise provided by law or other pertinent regulation, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards:

1. The relative harm to the parties if the stay is granted or denied.
2. The likelihood of appellant's success on the merits.
3. The likelihood of immediate and irreparable harm if the stay is not granted.
4. Whether the public interest favors granting the stay.

DECISION AND APPROVAL

I have reviewed the FEIS prepared for the Gas Hills In-Situ Recovery Uranium Project (WYW140590). For the reasons stated above, I select the BLM Preferred Alternative with modifications (Selected Alternative), and have determined that the Selected Alternative is in conformance with this Record of Decision and approved RMP's.

THE UNITED STATES OF AMERICA
Department of the Interior
Bureau of Land Management – Wyoming

By 
Steve Dondero
Wind River/Big Horn Basin District Manager

Date 2/11/14

8.0 References

- ARCADIS. 2011. Paleontological Resources Survey Report, Gas Hills Uranium Project, Fremont and Natrona Counties, Wyoming. Prepared for Cameco Resources, Cheyenne, Wyoming. Prepared by ARCADIS U.S., Inc., Buffalo, Wyoming. August 2011. 81 p.
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- _____. 2013b. Proposed Resource Management Plan and Final Environmental Impact Statement for the Lander Field Office Planning Area. BLM/WY/PL-13/007+1610. Lander Field Office. February 2013.
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- _____. 2007b. Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Land, Instruction Memorandum No. 2008-009, October 15, 2007. Internet website: http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/20080/im_2008-009.print.html. Accessed May 16, 2012.
- _____. 1987. Lander Field Office Final Resource Management Plan and Environmental Impact Statement. U.S. Department of the Interior, Bureau of Land Management.
- Hayden-Wing Associates, LLC (HWA). 2011a. Cameco Resources Gas Hills Uranium In-situ Project. Wildlife and Plant Surveys – 2010. Prepared for Cameco Resources, Inc. January 2011.
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Appendix A- Decision Implementation Plan (attached separately)

Appendix B- Comments Received and Responses for the Gas Hills ISR Uranium Project FEIS (attached separately)