

## **Appendix C – Project Design Features**

**TABLE C-1  
DESIGN FEATURES OF THE PROPOSED ACTION FOR ENVIRONMENTAL PROTECTION**

| Design Feature |  | Application Phase <sup>1</sup> |              |                           | Effectiveness <sup>2</sup> |                           |                 |            |                       |          |                         |                            |                       |                               |                    |
|----------------|--|--------------------------------|--------------|---------------------------|----------------------------|---------------------------|-----------------|------------|-----------------------|----------|-------------------------|----------------------------|-----------------------|-------------------------------|--------------------|
|                |  | Design and Engineering         | Construction | Operation and Maintenance | Earth Resources            | Paleontological Resources | Water Resources | Vegetation | Special Status Plants | Wildlife | Special Status Wildlife | Fish and Aquatic Resources | Land Use <sup>3</sup> | Visual Resources <sup>4</sup> | Cultural Resources |
| 1.             | In construction areas where recontouring is not required, vegetation will be left in place wherever possible, and original contour will be maintained to avoid excessive root damage and allow for resprouting in accordance with the reclamation plan. Vegetation not consistent with minimum clearance distances between trees and transmission lines must be removed to ensure line safety and reliability (required by North American Electric Reliability Council Transmission Vegetation Management Program).  | ✓                              | ✓            |                           | ●                          | ○                         | ●               | ●          | ●                     | ○        | ○                       | ○                          |                       | ●                             | ○                  |
| 2.             | In construction areas (e.g., multi-purpose construction yards, tower-site work areas, spur roads from existing access roads) where there is ground disturbance or where recontouring is required, surface reclamation will occur as required by the landowner or land-management agency. The method of reclamation normally will consist of, but not limited to, returning disturbed areas to their natural contour, reseeding, installing cross drains for erosion control, placing water bars in the road, and filling ditches.<br><br>All areas on lands administered by federal agencies disturbed as a part of the construction and/or maintenance of the proposed transmission line will be seeded with a seed mixture appropriate for those areas. The federal land-management agency will approve a seed mixture that fits each range type. Seeding methods typically will include drill seeding, where practicable; however, the federal land-management agency may recommend broadcast seeding as an alternative method in some cases. | ✓                              | ✓            |                           | ●                          |                           | ●               | ●          | ●                     | ○        | ○                       | ○                          | ○                     | ●                             |                    |

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|                | A Reclamation, Revegetation, and Monitoring Framework Plan identifying reclamation stipulations (e.g., topsoil stripping and storage, alleviation of soil compaction in construction areas, timing of reclamation activities, species lists, monitoring methods, standards for reclamation success, bond-release criteria, etc.) will be developed and incorporated into the Plan of Development (POD), which will be approved by the affected federal land-management agency prior to the issuance of a right-of-way grant, special-use authorization, etc.  |                                |              |                           |                            |                           |                 |            |                       |          |                         |                            |                       |                               |
| 3.             | Special status species, threatened and endangered species, or other species of particular concern will be considered in accordance with management policies set forth by appropriate land-management or wildlife-management agencies (e.g., Bureau of Land Management [BLM], U.S. Fish and Wildlife Service [FWS], state wildlife agencies, etc.). This will entail conducting surveys for plant and wildlife species of concern along the transmission line route selected for construction and associated facilities (e.g., access and spur roads, staging areas, etc.) as agreed on by the agencies. Survey protocols must be accepted or recommended by the affected federal land-management agency, FWS, and state wildlife agencies, as appropriate. In cases for which such species are identified, appropriate action will be taken to avoid adverse impacts on the species and its habitat, which may include altering the placement of roads or towers, where practicable, as approved by the landowner and compliance inspection contractor (CIC), as well as monitoring activities. | ✓                              | ✓            |                           |                            |                           |                 |            | ●                     |          | ●                       |                            | ●                     |                               |

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| 4. | The Proponent will design and construct all new or rebuilt transmission facilities to its raptor-safe design standards, including <i>Suggested Practices for Avian Protection on Power Lines; The State of the Art in 2006</i> (Avian Power Line Interaction Committee [APLIC] 2006); <i>Reducing Avian Collisions with Power Lines: The State of the Art in 2012</i> (APLIC 2012); PacifiCorp's Avian Protection Plan, updated June 2011 (PacifiCorp 2011); and PacifiCorp's substation guidelines. Series compensation stations must incorporate animal protections in accordance with the Proponent's standards. | ✓                              | ✓            | ✓                         |                            |                           |                 |            |                       | ●        | ●                       |                            |                       |                               |
| 5. | To prevent the spread of noxious weeds, a Noxious Weed Management Plan will be developed and incorporated into the POD, which will be approved by the affected federal land-management agencies prior to the issuance of a right-of-way grant or special-use authorization, respectively. This plan will be based on the principles and procedures outlined in the BLM Integrated Weed Management Manual 9015 and Forest Service Noxious Weed Management Manual 2080. On private land, the Plan will be approved by a county weed-management officer.   |                                | ✓            | ✓                         |                            |                           |                 | ●          | ●                     | ○        | ○                       | ○                          |                       |                               |
| 6. | Avoid vegetation clearing and other construction and maintenance activities when possible during the migratory bird nesting season, between February 1 and August 31; however, dates may vary depending on species, current environmental conditions, results of preconstruction surveys, and approval by agency biologists or agency-approved environmental inspectors in coordination with agency biologists.   |                                | ✓            | ✓                         |                            |                           |                 |            |                       | ●        | ●                       |                            |                       |                               |

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| 7. If vegetation clearing and other construction and maintenance activities could not be avoided during the migratory bird nesting season (between February 1 and August 31), migratory bird and nest surveys will be required within 7 days of any ground-disturbing activities. A spatial nest buffer will be placed around each active nest detected during the surveys until such time as the nest is determined through monitoring to be no longer occupied. Appropriate spatial nest buffers (by species or guild) and nest monitoring requirements will be identified using the best available scientific information through coordination with the FWS and other appropriate agencies and will be provided in a nest management plan incorporated into the POD. |                                | ✓            | ✓                         |                            |                           |                 |            |                       | ●        | ●                       |                            |                       |                               |                    |
| 8. Agency guidelines for raptor protection during the breeding season will be followed.   | ✓                              | ✓            | ✓                         |                            |                           |                 |            |                       | ●        | ●                       |                            |                       |                               |                    |
| 9. Based on preconstruction surveys and results of Section 7 consultation, state and federally designated sensitive plants, habitat, wetlands, riparian areas, springs, wells, water courses, or rare/slow regenerating vegetation communities will be flagged and structures will be placed to allow spanning of these features, where feasible, within the limits of standard structure design.   | ✓                              | ✓            |                           | ○                          |                           | ●               | ●          | ●                     | ○        | ○                       | ○                          | ○                     | ○                             |                    |
| 10. In consultation with appropriate land-management agencies and the State Historic Preservation Officers and in accordance with the Programmatic Agreement (to comply with Section 106 of the National Historic Preservation Act) entered into among the BLM; U.S. Forest Service (USFS); Bureau of Indian Affairs; the states of Wyoming, Colorado, and Utah;  | ✓                              | ✓            |                           |                            |                           |                 |            |                       |          |                         |                            |                       | ○                             | ●                  |

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|                | consulting parties; and tribes, specific mitigation measures for cultural resources will be developed and implemented to mitigate any identified adverse impacts. These may include Project modifications to avoid adverse impacts, cultural resources, monitoring of construction activities, and data recovery studies.   |                                |              |                           |                            |                           |                 |            |                       |          |                         |                            |                       |                               |                    |
| 11.            | The Proponent will continue to monitor studies performed on electric magnetic field research. The Proponent relies on the findings of public health specialists and international scientific organizations for guidelines regarding electric magnetic fields.   | ✓                              | ✓            | ✓                         |                            |                           |                 |            |                       |          |                         | ○                          |                       |                               |                    |
| 12.            | Transmission-line materials that have been designed and tested to minimize corona will be used. A bundle configuration and larger conductors will be used to limit audible noise, radio interference, and television interference due to corona. Tension will be maintained on all insulator assemblies to ensure positive contact between insulators, thereby avoiding sparking. Caution will be exercised during construction to avoid scratching or nicking the conductor surface, which may provide points for corona to occur. | ✓                              | ✓            |                           |                            |                           |                 |            |                       |          |                         | ○                          |                       |                               |                    |
| 13.            | The Proponent will apply grounding or other methods where possible to eliminate problems of induced currents and voltages onto conductive objects sharing the same right-of-way, to meet the appropriate codes.   | ✓                              | ✓            | ✓                         |                            |                           |                 |            |                       |          |                         | ●                          |                       |                               |                    |
| 14.            | A Fire Protection Plan will be developed and incorporated into the POD, which will be approved by the BLM and USFS prior to the issuance of a right-of-way grant or special-use authorization, respectively.  |                                | ✓            | ✓                         |                            |                           |                 | ●          |                       |          |                         |                            |                       |                               |                    |

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|                | All internal and external combustion engines on federally managed lands will be operated per 36 Code of Federal Regulations 261.52, which requires all such engines to be equipped with a qualified spark arrester that is maintained and not modified.   |                                |              |                           |                            |                           |                 |            |                       |          |                         |                            |                       |                               |                    |
| 15.            | The transmission line will be patrolled regularly and properly maintained in compliance with applicable safety codes.   |                                |              | ✓                         |                            |                           |                 |            |                       |          |                         | ○                          |                       |                               |                    |
| 16.            | During and after construction of the transmission line, the right-of-way will be free of non-biodegradable debris. Slash will be left in place or disposed of in accordance with requirements of the land-management agency or landowner.   |                                | ✓            | ✓                         | ○                          |                           | ○               | ○          |                       |          |                         |                            |                       |                               |                    |
| 17.            | In disturbed temporary work areas, the topsoil will be salvaged/segregated and distributed and contoured evenly over the surface of the disturbed area after construction completion. The soil surface will be seeded with an agency-approved seed mix and left rough to help reduce the potential for weeds and erosion.   | ✓                              | ✓            | ✓                         | ●                          |                           | ○               | ●          |                       | ○        | ○                       | ○                          |                       | ●                             |                    |
| 18.            | Grading will be minimized by driving overland in areas approved in advance by the land-management agency in predesignated work areas whenever possible.   | ✓                              | ✓            | ✓                         | ●                          | ○                         | ●               | ○          |                       | ○        | ○                       | ○                          |                       | ●                             | ○                  |
| 19.            | In consultation with appropriate land-management agencies, specific mitigation measures for and/or treatment of paleontological resources will be developed and implemented to mitigate any identified adverse impacts. These measures will include: <ul style="list-style-type: none"> <li>■ preparation of a Paleontological Resources Treatment Plan;</li> </ul> | ✓                              | ✓            |                           |                            | ●                         |                 |            |                       |          |                         |                            |                       |                               |                    |

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|                | <ul style="list-style-type: none"> <li>■ paleontological surveys;</li> <li>■ education of construction personnel;</li> <li>■ monitoring ground disturbance;</li> <li>■ deposition in a paleontological repository; and</li> <li>■ curation.</li> </ul>   |                                |              |                           |                            |                           |                 |            |                       |          |                         |                            |                       |                               |
| 20.            | On agricultural land, the right-of-way will be aligned, insofar as is practicable, to reduce the impact on farm operations and agricultural production.  | ✓                              |              |                           | ○                          |                           |                 |            |                       |          |                         | ●                          |                       |                               |
| 21.            | The Proponent will respond to complaints of line-generated radio or television interference by investigating the complaints and implementing appropriate mitigation measures where possible. The transmission lines will be patrolled by air or inspected on the ground on a periodic basis, in compliance with the Proponent's standards, so damaged insulators or other line materials that could cause interference are repaired or replaced.   |                                |              | ✓                         |                            |                           |                 |            |                       |          |                         | ○                          |                       |                               |
| 22.            | Fences, gates, and walls will be replaced, repaired, or reclaimed to their original condition as required by the landowner or the land-management agency in the event they are removed, damaged, or destroyed by construction activities. Fences will be braced before cutting. Temporary gates or enclosures will be installed only with the permission of the landowner or the land-management agency and will be removed/reclaimed following construction. Cattle guards or permanent access gates will be installed where new permanent access roads cut through fences on land administered by an affected federal agency or other grazing lands. |                                | ✓            | ✓                         |                            |                           |                 |            |                       |          |                         | ●                          |                       |                               |

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|                | <p>Temporary gates across breached fences may be required when livestock are actively grazing an area in which the breached fence is located when construction activities have halted for a time. Should construction activities prevent use of a facility, such as a corral when that corral is needed to facilitate movement of livestock, then the Proponent will provide a temporary corral to facilitate movement of livestock. This temporary gate will prevent livestock on one side of the fence from going to the other side through the breach.</p> <p>Calving, lambing, and trailing areas will be avoided in the Project right-of-way and ancillary facilities. Calving season generally occurs between December and February. Lambing season generally occurs between March and June. Trailing areas (areas where livestock producers move livestock across lands to facilitate proper grazing management) can occur throughout the Project area and timing may vary throughout the year. Prior to construction, the Proponent will coordinate with the applicable land-management agency or private landowner to avoid areas used for calving, lambing, and trailing during construction.</p> |                                |              |                           |                            |                           |                 |            |                       |          |                         |                            |                       |                               |
| 23.            | In cultivated agricultural areas, soil compacted by construction and maintenance activities will be decompacted. Construction and maintenance activities will occur as practical to minimize impacts on agricultural operations.  |                                | ✓            | ✓                         | ●                          |                           |                 |            |                       |          |                         |                            | ●                     |                               |
| 24.            | Where work will occur on hazardous and contaminated sites, the Proponent must seek approval from the U.S. Environmental Protection Agency. Work on contaminated sites   | ✓                              | ✓            |                           |                            |                           |                 |            |                       |          |                         |                            | ○                     |                               |

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|                | must avoid remedial structures (e.g., capped areas, treatment, or monitoring wells, etc.) and workers must use adequate worker protection measures for working in contaminated areas.  |                                |              |                           |                            |                           |                 |            |                       |          |                         |                            |                       |                               |                    |
| 25.            | Towers and/or conductors and/or shield wires will be marked with high-visibility devices (i.e., marker balls or other marking devices) where required by governmental agencies with jurisdiction (i.e., Federal Aviation Administration). Tower heights will be less than 200 feet to avoid the need for aircraft obstruction lighting.  | ✓                              | ✓            | ✓                         |                            |                           |                 |            |                       |          |                         | ●                          |                       |                               |                    |
| 26.            | All vehicle movement outside the right-of-way will be restricted to predesignated access, contractor-acquired access, public roads, or overland travel approved in advance by the applicable land-management agency, unless authorized by the CIC (during construction).   | ✓                              | ✓            | ✓                         | ●                          | ○                         | ●               | ●          | ●                     | ●        | ●                       | ●                          | ●                     | ●                             |                    |
| 27.            | The spatial limits of construction activities, including vehicle movement, will be predetermined with activity restricted to and confined within those limits. No paint or permanent discoloring agents indicating survey or construction limits will be applied to rocks, vegetation, structures, fences, etc.  |                                | ✓            |                           | ●                          | ○                         | ●               | ●          | ●                     | ●        | ●                       | ●                          | ●                     | ●                             |                    |
| 28.            | Prior to construction, the CIC will instruct all personnel on the protection of cultural, paleontological, ecological, and other natural resources such as (a) federal and state laws regarding antiquities, paleontological resources, and plants and wildlife, including collection and removal; (b) the importance of these resources; (c) the purpose and necessity of protecting them; and (d) reporting and procedures for stop work.. |                                | ✓            |                           | ○                          | ●                         | ○               |            | ●                     | ●        | ●                       | ●                          |                       | ●                             |                    |

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| 29.            | All requirements of those entities having jurisdiction over air-quality matters will be adhered to. Any necessary dust-control plans will be developed and permits for construction activities will be obtained. Open burning of construction trash will not be allowed unless permitted by the appropriate authorities.   |                                | ✓            |                           | ○                          |                           |                 |            |                       |          |                         |                            | ○                     | ●                             |                    |
| 30.            | Hazardous material will not be discharged onto the ground or into streams or drainage areas. Enclosed containment will be provided for all waste. All construction waste (i.e., trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials) will be removed to a disposal facility authorized to accept such materials within 1 week of Project completion. A Spill Pollution Prevention, Containment, and Countermeasures Plan Framework, will be developed as part of the POD.<br><br>Refueling and storing potentially hazardous materials will not occur within a 328-foot (100-meter) radius of a water body in Utah and Colorado (500-foot [153-meter] radius in Wyoming), a 200-foot radius of all identified private water wells, and a 400-foot radius of all identified municipal or community water wells. Spill prevention and containment measures will be incorporated as needed. |                                | ✓            | ✓                         | ○                          |                           | ●               | ○          | ●                     | ●        | ●                       | ●                          |                       |                               |                    |

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| 31.            | Dull-galvanized steel for lattice towers, nonspecular conductor and gray insulators, will be used to reduce visual impacts. Other permanent structures and fencing associated with the Project will be painted a color from the BLM's standard environmental colors. This color selection will be based on the landscape setting (e.g., sagebrush, pinyon-juniper, etc.) and through consultation with the BLM and the Proponent.   | ✓                              | ✓            |                           |                            |                           |                 |            |                       |          |                         |                            | ●                     | ●                             |
| 32.            | Watering facilities (tanks, natural springs and/or developed springs, water lines, wells, etc.) will be repaired or replaced if they are damaged or destroyed by construction and/or maintenance activities to their predisturbed condition as required by the landowner or land-management agency. Should construction and/or maintenance activities prevent use of a watering facility while livestock are grazing in that area, then the Proponent will provide alternate sources of water and/or alternate sources of forage where water is available.  |                                | ✓            | ✓                         |                            |                           | ○               |            |                       | ○        | ○                       | ○                          | ●                     |                               |
| 33.            | Consistent with BLM Riparian Management Policy, surface-disturbing activities within 328 feet (100 meters) of a riparian areas (defined as areas of land directly influenced by permanent surface or subsurface water having visible vegetation or physical characteristics reflective of permanent water influence, including wetlands, stream banks, and shores of ponds or lakes) in Utah and Colorado will be required to meet exception criteria defined by the BLM, such as acceptable measures to protect riparian resources and habitats by avoiding or minimizing stormwater runoff, sedimentation, and disturbance of riparian vegetation, habitats, and wildlife species. In Wyoming, surface-disturbing activities within 500 |                                | ✓            | ✓                         | ○                          |                           | ●               | ●          |                       | ○        | ○                       | ●                          |                       |                               |

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|                | <p>feet of all perennial waters and/or wetland and riparian areas and 100 feet of all ephemeral channels also will be required to meet exception criteria in association with the BLM Rawlins Field Office RMP (BLM 2008c). Mitigation measures will be developed on a site-specific basis, in consultation with the affected federal land-management agency, and incorporated into the final POD.</p> <p>If any disturbance was anticipated within 20 feet of the edge of a riparian area or other wetland habitat, a silt fence or certified weed-free wattle will be installed along the travel route on the wetland side unless the wetland is up-gradient.</p> |                                |              |                           |                            |                           |                 |            |                       |          |                         |                            |                       |                               |                    |
| 34.            | <p>Interagency-developed methods of avoidance, inspection, and sanitization as described in the <i>Operational Guidelines for Aquatic Invasive Species Prevention</i> and Equipment Cleaning (USFS 2009a) will be adhered to. If control of fugitive dust near sensitive water bodies is necessary, water will be obtained from treated municipal sources or drafted from sources known to contain no aquatic invasive species. Support vehicles, drill rigs, water trucks and drafting equipment will be inspected and sanitized, as needed, following interagency-approved operational guidelines.</p>  |                                | ✓            | ✓                         |                            |                           | ●               |            |                       |          | ●                       |                            |                       |                               |                    |
| 35.            | <p>State standards for abandoning drill holes will be adhered to where groundwater is encountered.</p>  |                                | ✓            |                           |                            |                           | ○               |            |                       |          |                         |                            |                       |                               |                    |
| 36.            | <p>Crossings of dry washes will be made during dry conditions, when possible. Repeated crossings will be limited to the extent possible but made at the same locations, if possible.</p>  |                                | ✓            | ✓                         | ●                          |                           | ●               |            |                       |          |                         |                            |                       |                               |                    |

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| Design Feature |   | Application Phase <sup>1</sup> |              |                           | Effectiveness <sup>2</sup> |                           |                 |            |                       |          |                         |                            |                       |                               |                    |
|----------------|---|--------------------------------|--------------|---------------------------|----------------------------|---------------------------|-----------------|------------|-----------------------|----------|-------------------------|----------------------------|-----------------------|-------------------------------|--------------------|
|                |   | Design and Engineering         | Construction | Operation and Maintenance | Earth Resources            | Paleontological Resources | Water Resources | Vegetation | Special Status Plants | Wildlife | Special Status Wildlife | Fish and Aquatic Resources | Land Use <sup>3</sup> | Visual Resources <sup>4</sup> | Cultural Resources |
| 37.            | If a riparian crossing were required during wet periods with saturated soil conditions, vehicles will not be allowed to travel when soils are moist enough for deep rutting (4 or more inches deep) to occur unless prefabricated equipment pads were installed over the saturated areas or other measures were implemented to prevent rutting. Equipment with low-ground-pressure tires, wide tracks, or balloon tires will be used when possible. |                                | ✓            | ✓                         | ●                          |                           | ●               |            |                       |          |                         |                            |                       |                               |                    |
| 38.            | Canal and/or ditch crossings will require placement of temporary bridges or improvement of existing crossings.  |                                | ✓            | ✓                         |                            |                           | ○               |            |                       |          |                         |                            | ●                     |                               |                    |
| 39.            | To minimize vehicle collisions with wildlife or livestock, a speed limit of 15 miles per hour will be employed on overland access routes.   |                                | ✓            | ✓                         |                            |                           |                 |            |                       | ●        | ●                       |                            | ○                     |                               |                    |

**NOTE:**

<sup>1</sup>Design features of the Proposed Action are measures or procedures that are part of the proposed action and implemented as standard practice, including measures or procedures that could reduce or avoid adverse impacts. Because these features are built into the Proposed Action, design features are considered mitigation. These three columns refer to the phase and/or phases of the Project during which design features are relevant (i.e., during design and engineering, construction, and/or operation and maintenance)

<sup>2</sup>Resources for which the design features of the Proposed Action produce a desired result. The “●” denotes a resource that benefits substantively from execution of the design feature. The “○” denotes a resource that also may benefit from the design feature, but not to the same substantive extent as “●.”

<sup>3</sup>The category, Land Use, includes the land use subcategories as discussed in Chapter 3 (i.e., existing land use; authorized land use; future land use; parks, preservation, and recreation; transportation and access; congressional designations, special designations and other management areas; wilderness areas, wilderness study areas, and non-wilderness study area lands with wilderness characteristics; and inventoried roadless areas and unroaded/undeveloped areas.

<sup>4</sup>Includes the identification of applicable design features for both visual resources and national trail systems.

# **Appendix D – State Engineer’s Review of Planned Water Use**

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# APPENDIX D – STATE ENGINEER’S REVIEW OF PLANNED WATER USE

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## INTRODUCTION

Appendix D provides a letter from the Wyoming State Engineer reviewing and responding to the Applicant’s commitment to use water from existing sources in the Platte River Basin in Wyoming, or using sources not hydrologically connected to the Platte River, thus avoiding the creation of any new depletions that are not currently covered under the Platte River Recovery Implementation Program. Appendix D also provides a letter from the Utah State Engineer reviewing and responding to the Applicant’s commitments to acquire water from existing water rights holders, or to acquire water from sources not tributary to the Colorado River, with the intent of ensuring that the Project’s water use in the Colorado River Basin is covered under the Colorado River Recovery Implementation Program.

The Wyoming State Engineer does not typically review depletions for the Colorado River Recovery Implementation Program in Wyoming in the same manner as required for the Platte River Recovery Implementation Program, and no letter is provided. The Colorado State Engineer does not typically review depletions for coverage under the Colorado River Recovery Implementation Program, and no letter is provided.

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# State Engineer's Office

HERSCHLER BUILDING, 4-E CHEYENNE, WYOMING 82002  
(307) 777-7354 FAX (307) 777-5451

**MATTHEW H. MEAD**  
GOVERNOR

**PATRICK T. TYRRELL**  
STATE ENGINEER

June 9, 2015

Tamara Gertsch, National Project Manager  
Bureau of Land Management  
P.O. Box 21150  
Cheyenne, WY 82003

To Ms. Gertsch:

To assist in the Platte River Recovery Implementation Program (PRRIP) compliance process involving the construction of the Energy Gateway South Transmission Project, I reviewed the associated water-related activities.

The installation of approximately 254 transmission structures located within the North Platte River basin and the temporary water use of approximately 31 acre-feet per year during construction is considered a temporary use of an existing water-related activity. Additionally, the potential use of 10 acre-feet in the Great Divide Basin from a source in the North Platte River Basin, is also considered a temporary use of an existing water-related activity. Due to (1) the use of temporary water use agreements allowing for no new net depletions to occur within the North Platte River basin; and/or (2) the use of water from wells considered not hydrologically connected to the North Platte River or its tributaries; this water use is covered under Wyoming's Depletions Plan. Once the source of water through the temporary water use agreements and/or non-hydrologically connected groundwater wells is identified, mitigation will be determined unnecessary as there will be no new depletions of water within the North Platte River basin associated with the Energy Gateway South Transmission Project. In the event this obligation is not met, the water use associated with this project will be reevaluated to determine any necessary mitigation.

If any further questions or comments exist, please don't hesitate to contact me.

Sincerely,

A handwritten signature in black ink that reads "M. Hoobler".

Matt Hoobler

River Coordinator – N. Platte, S. Platte, Belle Fourche  
State Coordinator – Wyoming's Depletion Plan

Cc: USFWS – PRRIP





GARY R. HERBERT  
Governor

SPENCER J. COX  
Lieutenant Governor

# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

### Division of Water Rights

KENT L. JONES  
State Engineer/Division Director

June 15, 2015

Jenna Whitlock  
Acting Utah State Director  
Bureau of Land Management  
440 West 200 South, Suite 500  
Salt Lake City, Utah 84101-1345  
and  
via Email  
[jwhitloc@blm.gov](mailto:jwhitloc@blm.gov)

Re: 2800/5101 (920 Gertsch)  
WYW-174597  
COC-72907  
UTU-87237

Dear Ms Whitlock:

In response to your letter of June 5, 2015 to John Mann of our office regarding the preparation of an Environmental Impact Statement (EIS) for the Energy Gateway South Transmission Project, I offer the following statement regarding the project's depletion coverage under the Upper Colorado River Recovery Implementation Program (RIP).

Utah is a participant along with other upper basin states, the Fish and Wildlife Service, and others in the RIP which was established and operates to recover four endangered fish species. The RIP is intended to go considerably beyond offsetting water depletion impacts by providing for the full recovery of the four endangered fishes. RIP participants recognize that timely progress toward recovery in accordance with a well-defined action plan is essential to the purposes of the RIP, including both the recovery of the endangered fishes and providing for water development to proceed in compliance with State law, Interstate Compacts, and the Endangered Species Act. The RIP is intended to provide the reasonable and prudent alternatives for projects undergoing Section 7 consultation in the upper basin. The Fish and Wildlife Service (FWS) determines whether progress by the RIP provides a reasonable and prudent alternative based on actions which result in a measurable population response, status of the fish population, adequacy of flows, and magnitude of the impact of projects.

The RIP is intended to offset both the direct and depletion impacts of historic projects occurring prior to January 22, 1988 if such offsets are needed to recover the fishes. An increase in depletions from a project occurring after January 22, 1988 is subject to a depletion charge. The FWS will assess the impacts of projects that require Section 7 consultation and determine if progress toward recovery has been sufficient for the RIP to serve as a reasonable and prudent alternative. The FWS is to use accomplishments



Page 2

June 15, 2015

Upper Colorado River Recovery Implementation Program (RIP)

under the RIP as its measure of sufficient progress. The FWS also considers whether the probable success of the RIP is compromised as a result of a specific depletion or the cumulative effect of depletions.

Your letter indicates depletions associated with the proposed project under EIS evaluation have been estimated and could potentially total 87.4 acre feet in the Upper Colorado River Basin over a three year period. Although the project sponsor has not identified specific sources to obtain the water necessary, your letter indicates their plan is to secure water by lease arrangement with holders of existing water rights. The rights to be utilized are presumed to have depletion offsets covered as a consequence of their historical status which precedes January 22, 1988, offsets covered by continuing compliance with a Section 7 consultation, and/or the water source used will not be tributary to the Upper Colorado River. The approach proposed seems feasible but as stated earlier, the FWS ultimately assesses impacts of projects, implications to recovery of the fish, and actions needed to avoid the likelihood of jeopardy.

Sincerely,



Kent L. Jones  
State Engineer

KLJ/mtb

Enclosure

cc: by email to: John Mann, Assistant State Engineer ([johnmann@utah.gov](mailto:johnmann@utah.gov))

Reid Persing, EPG ([rpersing@epgaz.com](mailto:rpersing@epgaz.com))

Tamara Gertsch, BLM ([tgertsch@blm.gov](mailto:tgertsch@blm.gov))

Jeremy Jarnecke, UT/BLM Hyrdologist ([jjarnicke@blm.gov](mailto:jjarnicke@blm.gov))



## United States Department of the Interior



### BUREAU OF LAND MANAGEMENT

Utah State Office

440 West 200 South, Suite 500

Salt Lake City, UT 84101-1345

<http://www.blm.gov/ut/st/en.html>

IN REPLY REFER TO:

2800/5101 (920 Gertsch)

WYW-174597

COC-72907

UTU-87237

JUN 05 2015

### FEDERAL EXPRESS MAIL

Mr. John Mann, Assistant State Engineer  
Utah Division of Water Rights  
1594 West North Temple, Suite 220  
Salt Lake City, Utah 84114-6300

Dear Mr. Mann:

The Bureau of Land Management (BLM) is the lead federal agency preparing an Environmental Impact Statement (EIS) for the Energy Gateway South Transmission Project (Project), a 500-kilovolt transmission line from southeast Wyoming to central Utah, proposed by PacifiCorp (doing business as Rocky Mountain Power, the right-of-way applicant across federal lands). We are also preparing a Biological Assessment to initiate consultation under Section 7 of the Endangered Species Act with the U.S. Fish and Wildlife Service. I am requesting that the Utah State Engineer's Office review this information and respond with a statement regarding the Project's coverage under the Upper Colorado River Recovery Implementation Program, that BLM could include in the Final Biological Assessment. We are providing the following information in reference to water-related activities associated with construction of the Project in Utah, to assist in your response. Additional information is also provided on water-related activities in the Jordan River basin in watersheds that contain the endangered June Sucker. This is provided for informational purposes, as no program exists to address depletions that may affect this species.

The Project originates at the Aeolus Substation near Medicine Bow, Wyoming, and traverses southwesterly, crossing the northwestern corner of Colorado, before entering Utah and terminating at the Clover Substation near Mona, Utah, a distance of approximately 425 miles (see enclosed map). Approximately 122 miles of the transmission line would cross the Upper Colorado River Basin and 62 miles of the transmission line would cross the Jordan River Basin in Utah. Construction of the approximately 122-mile-long segment of the Project within the Upper Colorado River Basin, with approximately 514 transmission structures, would require the use of approximately 87.4 acre-feet of water (approximately 28.5 million gallons). This depletion would take place over a three-year construction period, planned to begin in 2018. Thus, this analysis assumes annual depletions would total approximately 29.1 acre-feet per year for three years.

RECEIVED GK

JUN 08 2015

WATER RIGHTS  
SALT LAKE

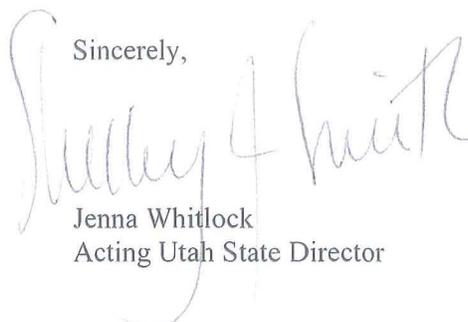
Additionally, approximately 62 miles of the Project, with approximately 260 structures, would be constructed in the Jordan River Basin. This depletion from the Jordan River Basin would result in approximately 31.3 acre-feet (approximately 10.2 million gallons) over a three-year construction period. The following table provides the estimated depletions that would take place in each Water Rights Area administered by the Utah State Engineer's Office, as well as the current status of surface water and groundwater appropriations.

| <b>Summary of Estimated Water Depletions in Utah from the Energy Gateway South Transmission Project</b>                                   |  |                      |  |
|---|--|----------------------|--|
| <b>Water Rights Area</b>  | <b>Water Rights Area Status</b>  | <b>Miles Crossed</b> | <b>Estimated Water Use (acre-feet)</b> |
| <b>Colorado River Basin</b>   |  |                      |  |
| 43: Duchesne and Strawberry Rivers  | Surface water: fully appropriated, except isolated springs<br>Ground water: available, limited | 0.2                  | 0.1                                    |
| 49: Southeast Uinta Basin   | Surface water: fully appropriated, except isolated springs<br>Ground water: available, limited | 46.5                 | 49.2 <sup>1</sup>                      |
| 47: Pleasant Valley and Pariette Draw   | Surface water: fully appropriated<br>Ground water: available, limited                          | 20.7                 | 10.5                                   |
| 90: Nine Mile Creek   | Surface water: fully appropriated<br>Ground water: available, limited                          | 30.2                 | 15.4                                   |
| 91: Price River   | Surface water: fully appropriated<br>Ground water: available, limited                          | 24.0                 | 12.2                                   |
| <b>Jordan River Basin</b>   |  |                      |  |
| 51: Utah and Indianola Valleys  | Surface water: fully appropriated<br>Ground water: fully appropriated                          | 38.5                 | 19.6                                   |
| 53: Goshen and Northern Juab Valleys  | Surface water: fully appropriated<br>Ground water: fully appropriated                          | 23.0                 | 11.7                                   |
| NOTE: <sup>1</sup> Water use is proportionally higher in this Water Rights Area as it includes a series compensation station siting area. |  |                      |  |

Because of the planned delay between granting right-of-way for the Project and the start of construction, the Applicant has not identified specific sources or entered into any purchase agreements or temporary water-use agreements at this time. The Applicant has committed to; 1) acquire water from holders of existing water rights already subject to Section 7 consultation, or to enter into temporary water-use agreements, allowing for no new net depletions to occur in the Upper Colorado River basin; and/or 2) acquire the use of water from wells considered not hydrologically connected to the Upper Colorado River or its tributaries. The Applicant also has committed to the development and implementation of a tracking tool to record water use during construction, to verify that water use meets the amounts and sources analyzed during Section 7 consultation. In the event that use of water sources or amounts meeting the descriptions provided is not met, the water use associated with this Project would be re-evaluated to determine any necessary actions.

Thank you in advance for your assistance. Please contact Tamara Gertsch, BLM National Project Manager, at (307) 775-6115 or by electronic mail at [tgertsch@blm.gov](mailto:tgertsch@blm.gov), should you have any questions regarding this information.

Sincerely,



Jenna Whitlock  
Acting Utah State Director

Enclosure:

1. Map

cc: by email to: Reid Persing, EPG ([rpersing@epgaz.com](mailto:rpersing@epgaz.com))

Tamara Gertsch, BLM ([tgertsch@blm.gov](mailto:tgertsch@blm.gov))

Jeremy Jarnecke, UT/BLM Hydrologist ([jjarnecke@blm.gov](mailto:jjarnecke@blm.gov))

## Alternative Routes

### ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

#### Alternative Route

- Agency Preferred Alternative Route Analyzed in Final EIS
- Alternative Route

#### Project Features

- Project Area Boundary
- Substation (Project Terminus)
- Link Number
- Link Node
- 345kV Proposed Rebuild (Segment 4a and 4b - Inves B)
- 345kV Proposed Rebuild (Segment 4c - Inves B)

#### Land Ownership

- Bureau of Land Management
- Bureau of Reclamation
- Indian Reservation
- National Park Service
- U.S. Department of Defense
- U.S. Fish and Wildlife Service
- U.S. Forest Service
- State Land
- Private Land

#### General Reference

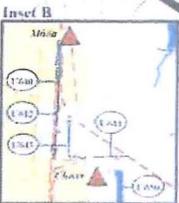
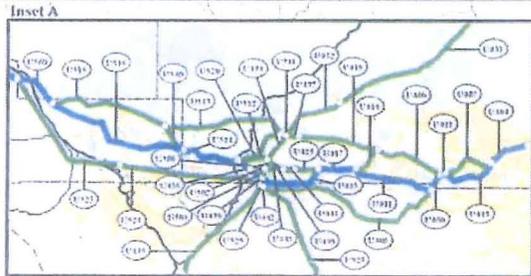
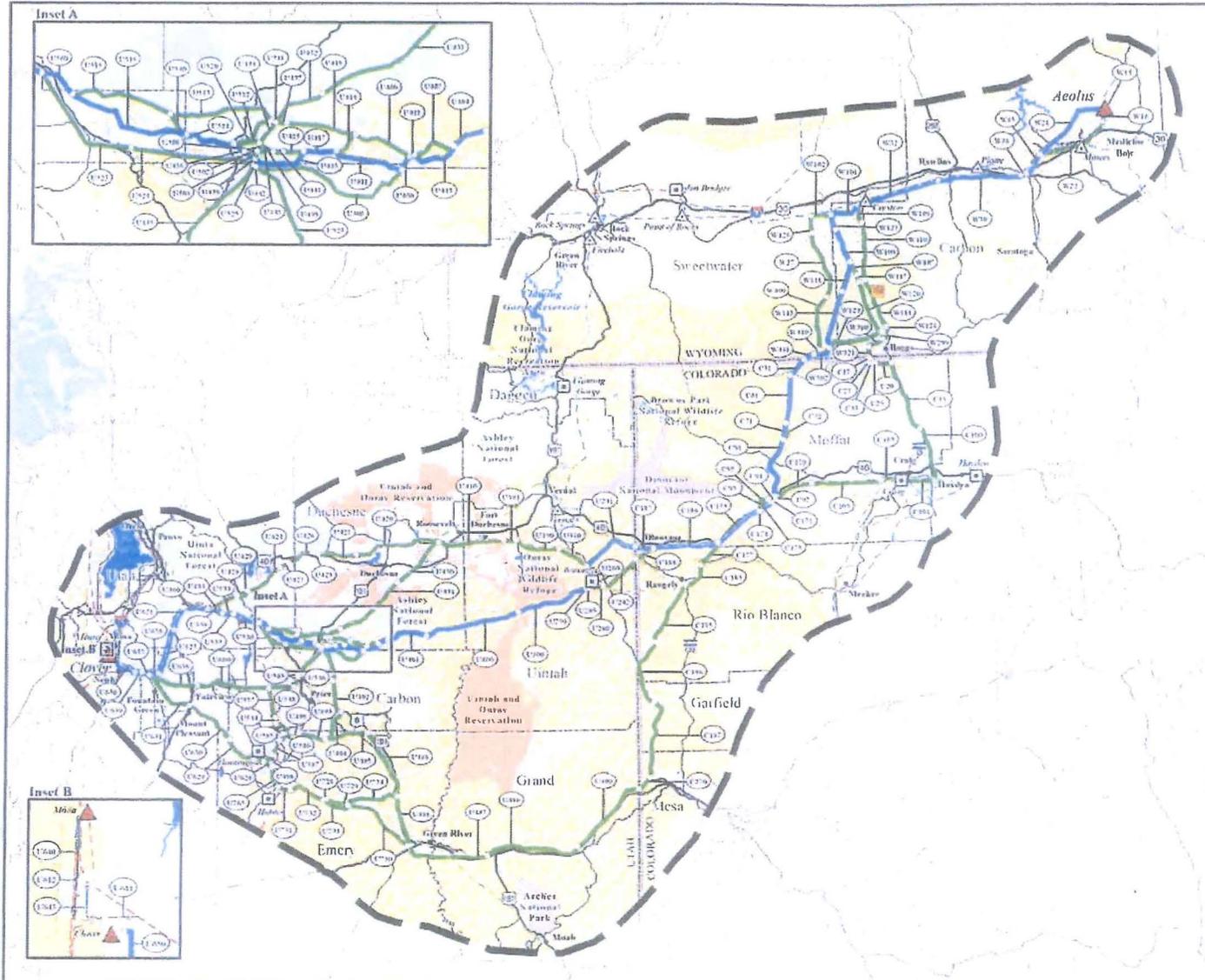
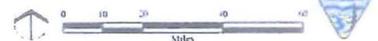
- City or Town
- Substation
- Power Plant
- 500kV Transmission Line
- 345kV Transmission Line
- 230kV Transmission Line
- 138kV Transmission Line
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundaries
- County Boundaries

**SOURCES:**  
 Transmission Lines and Substations as digitized by EPG, PDWRamp Plans 2009  
 Land Jurisdictions, BLM 2013; City or Town, ESRI 2012;  
 Highways, Roads, and Railroads, ESRI 2012; Water Features, ESRI 2008; USGS 2010;  
 State and County Boundaries, ESRI 2012

**NOTES:**  
 - The alternative routes shown on this map are draft and may be revised and/or refined throughout the development of the Project.  
 - Substation symbols do not necessarily represent precise locations.

#### DRAFT

Alternative routes last revised: September 23, 2014  
 Printed: December 4, 2014



**Appendix E – Clay Phacelia and Deseret  
Milkvetch Suitable Habitat Parameters**

**Recommended habitat requirements for clay phacelia (Armstrong 1992, USFWS 1982):**

The attributes below describe occupied clay phacelia habitat. Since very little habitat is occupied, we do not know the range or variability of each of the attributes where clay phacelia might occur thus those mapping suitable habitat should not rule out habitat that does not fit these attributes perfectly. Instead these attributes serve as general guidelines and are not meant to be all encompassing. Surveyors should include all habitats that closely match these attributes where the potential for clay phacelia exists.

Surveyors should check reference populations prior to surveys to get a better understanding of the species, its phenology at the time of surveys and the attributes of the habitat. Surveys should be coordinated with the US Forest Service botanist for the species who has knowledge of the species and its habitat requirements.

**Geology:** Outcroppings of the Douglas Creek and Garden Gulch members of the Green River Formation

**Soils:** Shale based clay colluvium with varying sizes of fragmented shale. Can grow on a range of soil types including fine texture soil, equal parts sand, clay and silt with pebbles often with “flat slabs of lithified shale” covering the surface. It can also grow on loose shale plate outcrops with roots establishing in buff to grey color clay. pH 7.4-7.8. Suitable habitat model uses 7.7 to 7.9.

**Vegetation:** Pinon-juniper, mountain brush community. Extremely sparse vegetation with bare ground and rock covering 97.8% of the surface. Vegetation cover of 2.2% composed of *Eriogonum umbellatum*, *Achnatherum hymenoides*, *Juniperus osteosperma*, *Mentzelia laevicaulis*, and *Quercus gambelii* but little vegetation grows adjacent to clay phacelia (although some invasive, exotics have established). No biological soil crust. Suitable habitat model uses canopy cover of less than 13 percent.

**Elevations:** 5900 ft to 6400 ft

**Slope:** Average 70%. Suitable habitat model uses 35% to 95%

**Aspect:** SE to W (can be snow free for varying periods during the winter). Suitable habitat model uses E to N.

**Suitable Habitat Attributes for Deseret milkvetch (*Astragalus desereticus*) (Franklin 1990; Stone 1992; Humphrey 1993; Fitts 2009; USFWS 2011):**

Surveyors should check multiple areas of occupied habitat prior to surveys to get a better understanding of the species, its phenology at the time of surveys, and the soil and vegetation attributes of the habitat. Surveys should be coordinated with the State Heritage Program botanist (Robert Fitts) because he has knowledge of the species and its habitat requirements.

Surveys need to be performed during the FWS recommended survey period because Deseret milkvetch individuals go dormant with little to no above ground presence during the summer heat.

**Geology & Soils:** *Astragalus desereticus* grows in exposed outcrops of the Moroni formation. The outcrops in the species' range are composed of a poorly sorted mixture of tuff, breccia, and volcanic cobbles and pebbles along with sandstone and siltstone and well-rounded clasts of tan quartzite and dark-blue limestone. The surfaces of the poorly sorted outcrops that are occupied by the species range from primarily sandy to gravels with no apparent sand at all on the surface. Derived soils are considered stony sandy loams. Typically, these outcrops have steep slopes and are sparsely vegetated.

**Aspect:** Plants are primarily found on S, SW, and W facing slopes, although few plants found on N-facing slopes.

**Associated species:** *Astragalus desereticus* occurs in a sagebrush-juniper community (Welsh and Chatterley 1985). Species that are associated with *A. desereticus* are *Pinus edulis* (twoneedle pinyon), *Juniperus osteosperma* (Utah juniper), *Quercus gambelii* (Gambel oak), *Artemisia tridentata* (big sagebrush), *Purshia tridentata* (antelope bitterbrush), *Astragalus calycosus* (Torrey's milkvetch), *Astragalus utahensis* (Utah milkvetch) *Opuntia polyacantha* (plains pricklypear), *Pseudoroegneria spicata* (bluebunch wheatgrass), *Achnatherum hymenoides* (Indian ricegrass), *Hesperostipa comata* (needle and thread), and *Eriogonum brevicaulis* (shortstem buckwheat) (Franklin 1990; Stone 1992; Humphrey 1993; Fitts 2009). *Bromus tectorum* (cheatgrass) also was one of the main associated species in portions of the *A. desereticus* population (Humphrey 1993).

**Appendix F – Uinta Basin Hookless  
Cactus Survey Protocol**

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## EGS Project, *Sclerocactus* Survey Protocol

### Introduction:

Under current requirements for complete clearance surveys for *Sclerocactus* within the potential habitat polygon, we estimate approximately 3,456 acres of survey are needed across the EGS project area. This is a large survey effort with minimal benefits to the species. Additionally, within *Sclerocactus* core conservation areas, complete clearance surveys can have negative impacts from increased foot traffic in dense *Sclerocactus* populations.

To reduce the potential for negative survey impacts and maximize effectiveness of *Sclerocactus* surveys, we developed the following alternative survey protocols. Additional mitigation to allow for reduced survey effort will be determined during consultation with the USFWS and approved prior to signing of the ROD.

### Within level 1 core conservation areas:

1. Prior to conducting field surveys, known subpopulations (clusters of locations) of *Sclerocactus* will be mapped in GIS using a 300 foot buffer as the subpopulation boundary. Mapping will be done by the contractor conducting the surveys.
2. Surveys will not occur within these occupied polygons because occupancy is assumed.
3. Complete clearance surveys will be conducted in the areas between these occupied polygons within the ROW or disturbance area (geotechnical surveys) plus a 300-foot buffer. The purpose of surveys in these areas is to ground-truth the boundaries of subpopulation polygons, identify new subpopulations of plants, or confirm absence of *Sclerocactus* individuals.
4. Obvious unsuitable habitat (for example, Four-mile Wash) does not need to be surveyed.

### Outside of level 1 core conservation areas but within the core conservation area 2 and *Sclerocactus* polygon:

1. Survey effort will be stratified using the *Sclerocactus* habitat model developed by Albeke et al. 2012.
2. We categorized the *Sclerocactus* habitat model by suitability (see Figure 1). Areas within the *Sclerocactus* polygon and outside of level 1 core conservation areas that have a habitat suitability of less than 0.5 will be subject to meander surveys.
  - a. A meander survey is a less intense survey of lower-quality habitat. Surveyors can walk at greater distances and meander through lower quality habitat (see Figure 2, from the California "Survey Protocols Required for NEPA/ESA Compliance for BLM Special Status Plant Species" 2009; included in appendix A). No set distance is required between meander paths, but we recommend a meandering survey at approximately 25 foot spacing between surveyors or survey paths. This distance may vary based on habitat quality.
  - b. As the surveyor passes through higher-quality habitat areas (alluvial cobble, Green River shales, etc.), survey intensity should increase (see Figure 1). As the habitat quality decreases, the surveyor can likewise decrease their survey effort.

- c. Meander surveys will be conducted within the ROW or disturbance footprint plus a 300 foot buffer.
  - d. If cacti are found during meander surveys, complete clearance surveys will be conducted in that habitat patch to accurately map that subpopulation.
3. Areas within the *Sclerocactus* polygon and outside of level 1 core conservation areas that have a habitat suitability of 0.5 or greater will be subject to 100 percent clearance (transect) surveys as per existing protocols (USFWS 2011).

General:

1. All plant surveys associated with this project will be good for the life of the project, with the following caveat:
  - a. For planned disturbance areas within 300 feet of known plant locations, spot check surveys following established protocols (see Appendix B) should be conducted within a year of when construction is planned. The purpose of these surveys will be to identify if new *Sclerocactus* have established outside of known subpopulation boundaries, identified during previous surveys.
2. In any planned disturbance areas where *Sclerocactus* will be transplanted, the area will be thoroughly searched prior to construction, and individuals will be flagged for transplanting. This will allow the maximum number of *Sclerocactus* to be recovered. Cacti should be transplanted within a day or two of flagging and during dormancy and in the fall. A transplant plan will be developed by a qualified botanist in coordination with USFWS and BLM, and will be approved by both federal agencies prior to transplanting.
3. If the surveyor identifies additional methods in the field that may be beneficial to both *Sclerocactus* and the project, they may coordinate with both the USFWS and BLM to change these survey protocols, with written approval from both agencies (email approval is acceptable).

Literature Cited

U.S. Fish and Wildlife Service. 2011. U.S. Fish and Wildlife Service (USFWS) Utah Field Office Guidelines for Conducting and Reporting Botanical Inventories and Monitoring of Federally Listed, Proposed and Candidate Plants. Utah Ecological Services Field Office, West Valley City, Utah. Available at; <http://www.fws.gov/utahfieldoffice/SurveyorInfo.html> .



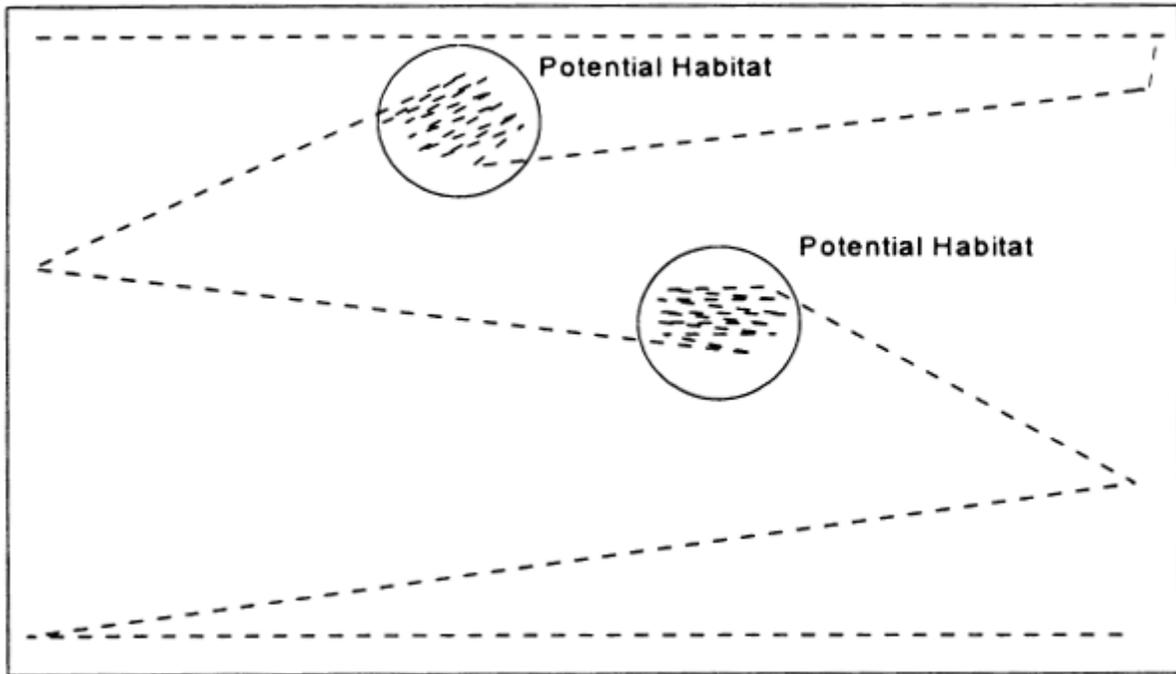


Figure 2. Example of meander survey. From California BLM, 2009, page 4.

Appendix A

California BLM survey protocol



# Survey Protocols Required for NEPA/ESA Compliance for BLM Special Status Plant Species

## Policy

It is BLM policy to conduct inventories to determine the occurrence and status of all special status plant species on lands managed by BLM or affected by BLM actions. This includes proactive inventories directed toward developing plans or determining the status of plant species, as well as inventories conducted to determine the impacts of BLM planned or authorized actions on any special status plants that might be within the area of a proposed project. Such inventories are to be conducted at the time of year when such plant species can be found and positively identified.

## Definition and Purpose

Inventory is the periodic and systematic collection of data on the distribution, condition, trend, and utilization of special status plant species (BLM Manual 6600).

Inventories are conducted for many reasons; however, for the purpose of this document only one inventory “reason” is addressed:

To ensure compliance with the National Environmental Policy Act and the Endangered Species Act by having sufficient information available to adequately assess the effects of proposed actions on special status plants. Assessments of the effects of these actions are documented in biological assessments (if the project involves Federally listed species and qualifies as a "major construction activity" as defined by the ESA).

Special status plants include plant taxa that are Federally listed as threatened and endangered, proposed for Federal listing, candidates for Federal listing, State listed as rare, threatened, or endangered, or BLM sensitive species. All plant species that are currently on List 1B of the California Native Plant Society’s Inventory of Rare and Endangered Plants of California (<http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi>), are BLM sensitive species, along with others that have been designated by the California State Director. BLM is party to a Memorandum of Understanding with the California Department of Fish and Game to collect information for inclusion in the California Natural Diversity Data Base. Therefore, in addition to inventorying for plants formally recognized as special status species by BLM, contractors must also inventory for all plant, lichen, and fungi species recognized as “special” by the California Natural Diversity Data Base (<http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPPlants.pdf>). Although the following discussion uses the term “special status plants,” it should be interpreted to mean all of the plant taxa discussed above.

The inventory requirements below apply to energy rights-of-way applications on Federal lands managed by the BLM in California and northwestern Nevada. Projects that include State or private lands or require State approval will likely also require conformance with the rare plant

survey guidelines of the California Department of Fish and Game (<http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/guideplt.pdf>).

### **Timing and Intensity of Inventory**

Before conducting inventories, contractors for BLM or energy companies should research three valuable sources to see if BLM special status species are known from the project area: the California Natural Diversity Data Base (CNDDDB), CALFLORA, and the Biogeographic Information & Observation System (BIOS). However, CNDDDB and BIOS are positive occurrence databases only, the lack of data should not be used as verification that the species does not exist in a given location. Inventories must be timed so that contractors can both locate and positively identify target plant species in the field. Inventories must be scheduled so that they will detect all special status species present. A single inventory on a single date will seldom suffice. For example, when one special status plant species suspected to be in the inventory can only be found and identified in April and another species can only be located and identified in August, at least two inventories are necessary. The first inventory can facilitate the second and/or third inventory, however, if potential sites for the late-flowering species are flagged during the first inventory. If sufficient information is available on the habitat requirements of potentially occurring species (substrate, plant community, etc.), and the site in question is believed to be unsuitable for those species, a field visit should still be conducted to document and validate the assumptions for believing that the species to be absent. In advance of the project site inventory, contractors should visit known populations of the target species in similar habitat conditions to determine current-year growth conditions and phenology. If, based on these visits to known populations, it appears likely that the project site inventory will fail to detect occurrences because of drought conditions (as may be the case for annual plant species or geophytic plants), BLM may require contractors to perform additional inventories in the following year.

### **Field Survey - Methodology**

Field surveys will be floristic in nature, i.e., the contractor identifies every plant taxon observed in the project area to the taxonomic level necessary to determine rarity and listing status. Surveys will be conducted so that they will ensure a high likelihood of locating all the plant taxa in the project area. Depending on the size of the project area and the heterogeneity of the habitats within the project area, surveys will involve one or a combination of the following survey methods.

#### **Complete Survey**

A complete survey is a 100 percent visual examination of the project area (Figure 1) using transects. The length of the transect and distance between transects might change as the topography changes throughout the project area. Transects should be spaced so that all of the area between transects is visible and so that the smallest rare plant expected to occur is visible. The surveyor (1) compiles a species list while traversing the project area and keeps track of the plant community or habitat type where each taxon occurs; (2) maps the locations of all rare taxa

encountered using a GPS unit, and (3) fills out a CNDDDB Native Species Field Survey Form for each location of each rare taxon encountered.

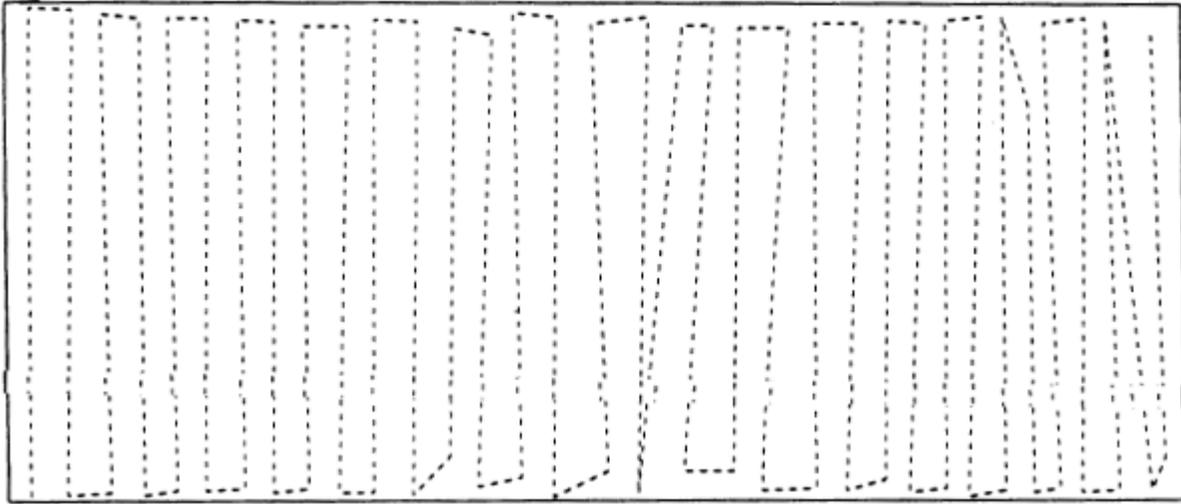
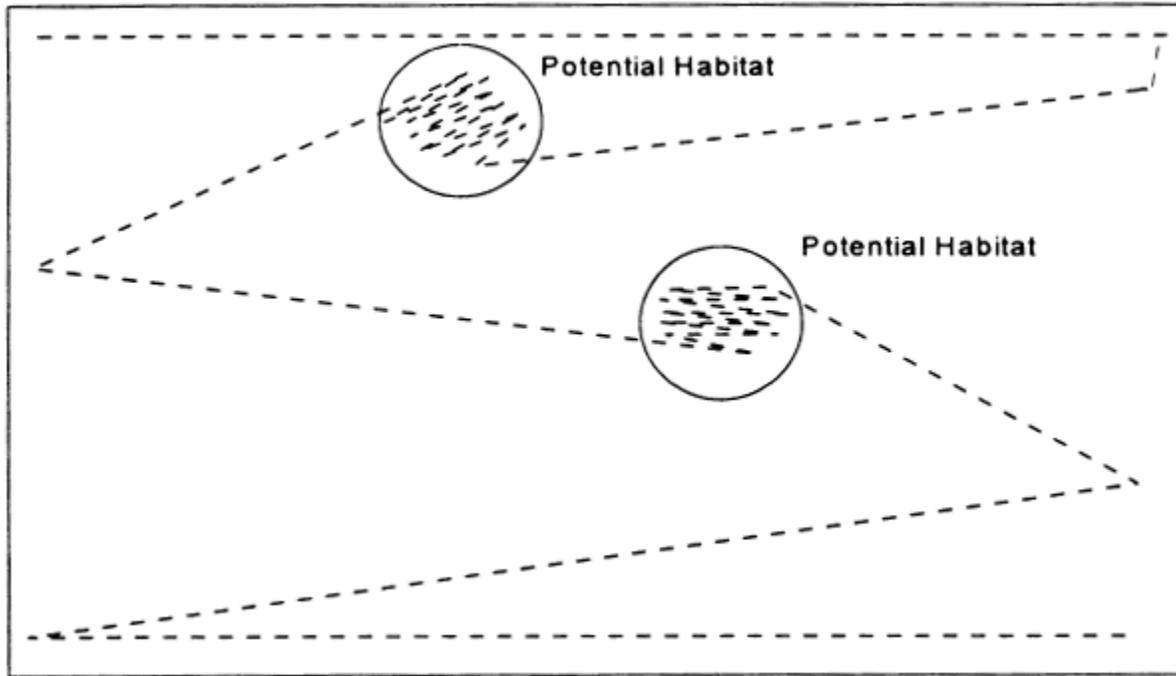


Figure 1. **Complete survey.**

### **Intuitive Controlled Survey**

An intuitive controlled survey is a complete survey of habitats with the highest potential for supporting rare plant populations and a less intense survey of all other habitats present (Figure 2). This type of survey can only be accomplished by botanists familiar with the habitats of all the plant species that may reasonably be expected to occur in the project area. The botanist traverses through the project area enough to see a representative cross section of all the major plant habitats and topographic features. During the survey, the botanist compiles a species list of all plant taxa seen en route and keeps track of the plant community or habitat type where each taxon occurs. The surveyor maps the locations of all rare taxa encountered using a GPS unit and fills out a CNDDDB Native Species Field Survey Form for each location of each rare taxon encountered. When the surveyor arrives at an area of “high potential” habitat, s/he surveys that area completely as described above and shown in Figure 1. High potential habitat areas include areas defined in a pre-field review of potential rare plants and habitat and other habitats where a rare species appears during the course of initial field work traversing the project area. Areas within the project area that are not the focus of a complete survey must be surveyed sufficiently so that is the botanist and BLM reasonably believe that few if any additional species would be added to the complete species list for the project area. The report must justify why the botanist did not consider these areas to have a high potential for supporting rare plant species and thus did not subject the area to a complete survey.



**Figure 2.** Intuitive Controlled Survey.

### Documenting the Results of Inventory

The results of special status plant inventories should be well documented. This documentation must include as a minimum the completion and submission of Field Survey Forms and shapefiles/geodatabases of all special status plants found by BLM personnel or consultants. CNDDDB defines occurrences as being separated from other plant locations by 0.25 mile. These forms are submitted to the BLM State Botanist and to the California Natural Diversity Data Base (CNDDDB) at the following address:

CNDDDB - Dept. of Fish and Game  
1807 13th Street, Suite 202  
Sacramento, CA 95811

Forms can be submitted electronically at: [CNDDDB@dfg.ca.gov](mailto:CNDDDB@dfg.ca.gov)  
Copies of the Field Survey Form are available from the CNDDDB at the same address. They will also provide photocopied parts of topo maps if needed.

If the inventory discovers any rare or unusual plant communities,<sup>1</sup> a Natural Community Field Survey Form must be completed for each such community and sent to the CNDDDB at the address above.

<sup>1</sup> Rare or unusual plant communities includes those communities marked with asterisks in the most current list of California plant communities recognized by the California Natural Diversity Data Base, available at: <http://www.dfg.ca.gov/biogeodata/vegcamp/pdfs/natcomlist.pdf>, and Unusual Plant Assemblages as defined in

Most special status plant inventories of public lands conducted to assess the impacts of a project are performed by consultants hired by project proponents. These inventories must meet or exceed the intensity level required for the project by BLM. Personnel conducting the inventory must meet the qualifications outlined in this document. For BLM to adequately determine the quality of third party inventories, the following information must appear in a detailed report to BLM from the consultant or project proponent:

- a. Project description, including a detailed map of the project location and study area.
- b. A written description of the biological setting, including descriptions of the plant communities found in the project area and a vegetation map. Plant communities should be described and mapped to at least the alliance level using the vegetation classification system of the California Department of Fish and Game (CDFG). A list of the alliances currently recognized by CDFG can be found at: [http://www.dfg.ca.gov/biogeodata/vegcamp/pdfs/NaturalCommunitiesList\\_Oct07.pdf](http://www.dfg.ca.gov/biogeodata/vegcamp/pdfs/NaturalCommunitiesList_Oct07.pdf). When the Manual of California Vegetation is published in 2009, the alliances recognized in that document should be used.
- c. A detailed description of the inventory methodology, including techniques and intensity of the inventory and maps showing areas actually searched. This will also include areas searched but no special status plants found.
- d. The results of the inventory.
- e. The dates of the inventory.
- f. An assessment of potential impacts and recommended mitigation measures to reduce impacts.
- g. Recommended management actions to conserve any special status plants encountered should include both actions the BLM might take, as well as actions that might be taken by the FWS (listing or delisting of T/E plants, changes in candidate status, etc.).
- h. A discussion of the significance of any special status plant occurrences found, with consideration for other nearby occurrences, and the distribution of the species as a whole.
- i. Assessments of the health, population size, and protective status of any special status plants found.
- j. A complete list of *all* plant species (not just special status species) identified within the project area, and a discussion of any range extensions discovered as a result of the inventory

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the California Desert Conservation Area Plan ([http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/cdd/cdcaplan.Par.15259.File.dat/CA\\_Desert\\_.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/cdd/cdcaplan.Par.15259.File.dat/CA_Desert_.pdf)) or shown on Map 6 of the California Desert Conservation Area Plan, as amended (copies on file at the BLM California State Office, the California Desert District, and each of the field offices in the California Desert District).

- k. Copies of all Field Survey Forms, for all special status plant occurrences found, or Natural Community Field Survey Forms, for any unusual communities found.
- l. The name(s) and qualifications of the persons conducting the inventory.
- m. A list of references cited, persons contacted and herbaria visited.
- n. Additional data needs.
- o. Other information as appropriate such as vegetation maps and photographs (see below).

Voucher specimens of special status plants should be collected if necessary to conclusively document the occurrence of the species and if the collection will not adversely affect the health of the population at the site. Collection of Federally listed plants on Federal lands requires a permit from the FWS. If voucher specimens are collected, they should be deposited in major recognized herbaria for future reference, preferably The University of California, Berkeley (UC), The Jepson Herbarium (JEPS), The California Academy of Sciences (CAS), or Rancho Santa Ana Botanic Garden (RSA).

Photographs should be taken of the areas inventoried, of all special status plants found, and of the habitat associated with each special status plant occurrence.

### **Data Collection – Data Submission**

Data should be collected using a Mapping Grade GPS Receiver with an accuracy of < 3 meters Horizontal Root Mean Squared (HRMS).

All positions should be logged according to the following specifications:

- Maximum PDOP of 6
- Minimum of 5 Satellites
- Minimum elevation mask of 15 degrees
- Datum: NAD83
- Coordinate System: UTM Zone 10 or Zone 11, depending on where in California or northwestern Nevada the data is collected.
- ESRI compliant formats (Geodatabase, Coverage or Shapefile)

Metadata must be included with the data. The following must be included in the metadata:

- Project Name
- Purpose – Summary of the intentions with which the data set was developed
- Abstract Information – Brief narrative summary of the data set
- Location – What area(s) does your data cover? ie., list statewide, regions, city, county?
- Developer – Who collected the data?

Data Dictionary – A data dictionary must be used for all projects. The dictionary should include the data that is requested on the CNDDDB forms. This ensures that the botanist is collecting (electronically) the same data as is requested by DFG. This also ensures that all inventories are collecting the same level/standard of data.

GIS Support Data: BLM California State Office Downloadable Data Sources

Index Page with BLM Data Naming Rules

[http://www.blm.gov/ca/pa/gis/Data\\_Page/Data%20Page.html](http://www.blm.gov/ca/pa/gis/Data_Page/Data%20Page.html)

Geospatial Data Downloads

<http://www.blm.gov/ca/gis/index.html>

All data collected in and referenced to the public land survey are required to conform to this version of PLSS published on the California BLM data download page.

In addition to the local Field Office; a copy of the Data (DVD or CDROM) must be submitted directly to:

BLM California State Office  
Geographic Services, W1939  
Attention: Chief Mapping Sciences  
2800 Cottage Way  
Sacramento, CA 95825

GIS Questions: Please Call  
(916) 978-4343

### **Qualifications of Personnel Conducting Inventories**

All personnel conducting special status plant inventories must have the following:

- strong backgrounds in plant taxonomy and plant ecology
- strong background in field sampling design and methods
- knowledge of the floras of the inventory area including the special status plant species
- familiarity with natural communities of the area

These qualifications help ensure that all special status plants in the inventory area will be located, including taxa that BLM or project proponents did not predict at the start of the inventory. All survey efforts must be coordinated with the responsible BLM Field Office botanist or biologist



Appendix B

Spot Check Survey MOU



**MEMORANDUM OF UNDERSTANDING  
BETWEEN  
U.S. DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT, VERNAL FIELD OFFICE, UTAH  
AND  
U.S. FISH & WILDLIFE SERVICE, SALT LAKE CITY, UTAH**

**PURPOSE:** This Memorandum of Understanding (MOU) outlines an agreement between the Bureau of Land Management, Vernal Field Office (hereafter “BLM”), and the U.S. Fish and Wildlife Service, Utah Field Office (hereafter the “Service”).

**AUTHORITY:**

- **Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), sec 7(a)(1)** – directing Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species.
- **Federal Land Policy and Management Act, 43 U.S.C. 1701 et seq.), sec 302** – directing the Bureau of Land Management to manage public lands under their administration under the principles of multiple use and sustained yield; to protect the quality of ecological values; preserve and protect certain public lands in their natural habitat; and, recognize the Nation’s need for domestic sources of minerals.
- **Presidential Executive Order 13212.** This Executive Order directs all federal agencies, to expedite their review of permits for energy related projects “or take other actions as necessary to accelerate the completion of such projects, while maintaining safety, public health, and environmental protections.” Exec. Order No. 13,212, 66 Fed. Reg. 28, 357 (2001).

**BACKGROUND:** The Vernal BLM RMP was signed in 2008 and included species-specific conservation measures for *Sclerocactus brevispinus* and *S. wetlandicus* (at the time, included in *S. glaucus*). Mitigation measure #2e states that site inventories:

“Will be valid until March 15<sup>th</sup> the following year for *Sclerocactus brevispinus* and one year from the survey date for *Sclerocactus wetlandicus*.”

In several recent section 7 consultations, the Service and BLM have discussed modifying survey requirements (see, for example, 2012-I-0075, Newfield Jonah Water Injection Facility) so that surveys are valid for longer than one year. Surveys themselves can have impacts on *Sclerocactus* habitat (in particular, disturbance of desert soils), especially if repeat surveys are done year after year for the same project area, as frequently occurs. To minimize these ecological impacts, the BLM and Service agree to the below methodologies.

## ITEMS of AGREEMENT:

### *Sclerocactus brevispinus* and *S. wetlandicus* Survey Methods and Protocol:

- Initial pre-disturbance 100% clearance surveys will be conducted following standard methodology and will be valid for a period of 4 years.
  - If more than 4 years pass between the original surveys and construction, a new 100% clearance survey will be required.
  - If construction is to occur within the 4 year window, an additional, reduced-effort “spot check” survey will be conducted following the below methodology in the year of project construction.

### **Sclerocactus Spot Check Survey Methods**

1. Spot checks will be conducted by qualified individuals according to BLM and Service standards for plant surveyors (i.e. attendance at Uinta Basin Rare Plant Workshop, qualifying education and experience).
2. Spot check surveys will occur during the year of construction.
3. Timing limitations for spot check surveys will follow existing protocols for regular surveys:
  - *S. brevispinus*: March 15 through June 30 unless extended by prior written approval by the Service;
  - *S. wetlandicus*: During any time of year with no snow cover.
4. Within 30 feet (10 meters) of the perimeter of the previous survey, spot check surveys will occur at a moderate intensity (survey lines spaced 10 feet or so apart at a moderately slow speed; this can be done via a meander survey method) except in the following locations:
  - **Original survey areas that are within 300 feet and downslope of known plant locations**, where seeds are likely to disperse during rain events. Locations meeting this criteria will require 100% clearance surveys.
  - **Areas immediately adjacent to ant mounds/colonies that fall within the original 100% clearance survey boundary.** Another known mechanism for *Sclerocactus* seed dispersal is harvester ants, so the area immediately adjacent to active and inactive ant mounds (approximate 10 foot diameter) should be surveyed following standard survey protocols for new germinants of *Sclerocactus*.
5. Surveys will be completed prior to any ground disturbing activities. Operators may not proceed on the basis of a preliminary negative spot check survey.
6. Biological reports of the spot check survey will be submitted to the BLM authorizing official, and the authorizing official will provide written approval to the operator to proceed with the project.
7. Spot check biological reports will also be submitted to the Service so that the Service may evaluate the efficacy of these survey methods.
8. The BLM authorizing official can halt construction as necessary based on new plant location information obtained from sources other than the operator or the contractor hired by the operator.

The BLM agrees to:

- Require surveys for *Sclerocactus* species according to the above protocols.
- If cactus are found within 300 feet of proposed disturbance during the spot check survey the BLM will work with the operator to
  - Relocate the disturbance to avoid cactus by 300 feet;
  - Initiate formal consultation if the proposed disturbance cannot be relocated to avoid cactus by 300 feet; or
  - The operator will voluntarily withdraw the APD.
- Ensure that operators wait for written permission from the BLM authorized officer before proceeding with the project.

The Service agrees to:

- Review spot check survey protocol by January of each year to determine if the methods are effective and coordinate with the BLM to modify the protocols as needed.
- Consult with the BLM on projects in which plants are found during spot checks and the proposal cannot be modified to avoid new plant locations by at least 300 feet.

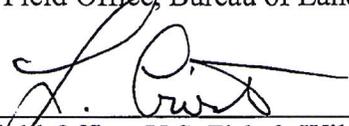
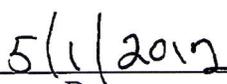
**ADMINISTRATION:**

This MOU may be cancelled at any time, following at least 30 days prior written notice to all participants.

The participants may propose changes to this MOU at any time. Such changes will be in the form of an amendment and will become effective upon signature by all participants.

This MOU becomes effective upon signature by all participants.

**SIGNATURES OF APPROVAL:**

|  |   |
|--|---|
| <br><hr/> Vernal Field Office, Bureau of Land Management  | <br><hr/> Date  |
| <br><hr/> Utah Field Office, U.S. Fish & Wildlife Service | <br><hr/> Date |