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In the Matter of: POWERTECH USA, INC. (Dewey-Burdock In Situ Uranium Recovery Facility)	
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

POWERTECH USA, INC.

(Dewey-Burdock
In Situ Uranium Recovery Facility)

Docket No. 40-9075-MLA

ASLBP No. 10-898-02-MLA-BD01

Hearing Exhibit

Exhibit Number:

Exhibit Title:

**SUMMARY OF TRIBAL CULTURAL HERITAGE RESOURCES DATA
ACQUIRED IN JUNE 2018 AT THE DEWEY-BURDOCK
IN SITU URANIUM RECOVERY PROJECT
FALL RIVER AND CUSTER COUNTIES, SOUTH DAKOTA**



Prepared for

U.S. Nuclear Regulatory Commission

**Office of Nuclear Material Safety and Safeguards
Division of Fuel Cycle Safety, Safeguards, and Environmental Review
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1 INTRODUCTION

The Dewey-Burdock *in Situ* Uranium Recovery (ISR) Project is a uranium recovery project that uses ISR technology located in South Dakota. Powertech (USA), Inc. (Powertech) received a license from the U.S. Nuclear Regulatory Commission (NRC) in April 2014 to construct and operate the facility. The project area, comprising 4,282 hectares (ha) (10,580 acres (ac)), is located in Fall River and Custer Counties in southwestern South Dakota. It is situated within the Great Plains physiographic province on the southwestern edge of the Black Hills uplift. When fully developed, the Dewey-Burdock ISR Project will include processing facilities and sequentially developed wellfields sited in two contiguous areas, the Burdock area and the Dewey area. Proposed facilities include a central processing plant in the Burdock area, a satellite facility in the Dewey area, wellfields, Class V deep injection wells and/or land application areas for disposal of liquid wastes, and the attendant infrastructure (e.g., pipelines and surface impoundments).

Following a 2009 license application, the NRC completed a safety evaluation, documented in a safety evaluation report; an environmental review, documented in the final supplemental environmental impact statement (FSEIS) (NRC, 2014a), under the provisions of the National Environmental Policy Act of 1969 (NEPA); and a Section 106 review, for which a Programmatic Agreement¹ was executed in April 2014, under the provisions of the National Historic Preservation Act of 1966 (NHPA). The NRC issued Materials License SUA-1600, “Dewey-Burdock Project in Fall River and Custer Counties, SD,” in April 2014, authorizing Powertech to construct and operate its facilities as proposed in its license application, as amended, and to possess uranium source and byproduct material at the Dewey-Burdock ISR facility.

The adequacy of the cultural resources analyses in the Dewey-Burdock ISR FSEIS is the subject of an adjudicatory proceeding before the NRC Atomic Safety and Licensing Board Panel (ASLBP) since 2014. The ASLBP found that the NRC staff had satisfied the requirements of NHPA but had failed to meet the “hard look” standard of the NEPA in assessing in its FSEIS the impacts of the Dewey-Burdock ISR Project on the cultural, historical, and religious sites of significance to Lakota Sioux Tribes (ASLBP, 2015; 2017).

To resolve the ASLBP findings, the NRC staff presented a final selected approach in March 2018 (NRC, 2018a) designed to obtain relevant additional information on the cultural, historical, and religious places or resources of potential significance to Lakota and other invited Tribes that could be impacted by the Dewey-Burdock ISR Project. Beyond identifying and documenting any places of possible Lakota interest occurring within the ISR license area, further evaluation would be conducted to analyze potential impacts to such sites and identify measures to avoid or mitigate impacts to those sites. The NRC staff proposed to use the information gathered and evaluated to supplement the previous analysis in the FSEIS for the Dewey-Burdock ISR Project. In general, the proposed approach included (1) onboarding a contractor to facilitate implementation of the approach, (2) involving Tribes and holding meetings with Tribal Leaders of the invited Tribes, to the extent possible, (3) conducting oral history interviews with Tribal Elders of the invited Tribes, (4) providing an opportunity for a field survey of the Dewey-Burdock ISR Project site, and (5) supplementing the analysis in the FSEIS

¹ The Programmatic Agreement was executed in accordance with Section 106 process of the NHPA signed by the NRC, the Advisory Council on Historic Preservation, the South Dakota State Historic Preservation Office, and the U.S. Bureau of Land Management (NRC, 2014b).

to account for information obtained on sites of historic, cultural, and religious significance to the invited Tribes.

To implement the approach, the NRC invited five Lakota Sioux Tribes to participate in proposed field surveys of the Dewey-Burdock ISR Project site, including the Oglala Sioux Tribe, Standing Rock Sioux Tribe, Cheyenne River Sioux Tribe, Rosebud Sioux Tribe, and Lower Brule Sioux Tribe (NRC, 2018b). The NRC also invited the Yankton Sioux Tribe (Western Dakota), the Flandreau Sioux Tribe (Eastern Dakota), and the Crow Creek Sioux Tribe (Western Dakota) to participate in the effort. The field survey efforts were scheduled to occur during the period of June 11–22 and September 3–14, 2018, as outlined in the associated timeline to carry out the NRC's selected approach (NRC, 2018a).

The NRC staff conducted two webinar and teleconference sessions for potential tribal participants on June 1 and 4, 2018, along with a follow-up teleconference on June 5, 2018, to address the need for developing a coordinated field methodology for the pending June field survey session (NRC, 2018c). To initiate the first field survey of the Dewey-Burdock ISR Project, the NRC staff and the NRC contractor (SC&A, Inc. (SC&A)) personnel traveled to South Dakota on June 10, 2018. At the request of the Oglala Sioux Tribe, the NRC project manager and SC&A technical lead met with the Tribe's Acting Tribal Historic Preservation Officer and other Oglala Sioux Tribe representatives and consultants on June 11–13, 2018, in Pine Ridge, South Dakota, to continue discussions on a proposed field methodology for conducting the survey fieldwork. On June 12, 2018, the NRC project manager and SC&A technical lead received a cultural resources survey proposal from the Oglala Sioux Tribe. On June 13, 2018, at the request of the Tribe, the NRC project manager and SC&A technical lead attended a meeting of the Tribe's Advisory Council to answer questions about the NRC staff's overall approach. The Advisory Council shared concerns regarding the adequacy and terms of the NRC staff's overall approach. On June 15, 2018, the Oglala Sioux Tribe provided an updated version of the Tribe's cultural resources survey proposal that took into account the Advisory Council's review. On June 15, the NRC staff informed the Oglala Sioux Tribe that the Tribe's proposal contemplated activities and milestones that were not part of the approach previously negotiated with the Tribe and parties to the adjudicatory hearing and that those changes represented a significant departure from the NRC staff's approach in terms of timeframe, cost, and scope. Accordingly, the NRC staff informed the invited Tribes that it was discontinuing its survey efforts for the week of June 18, 2018.

2 CULTURAL RESOURCES EFFORTS

2.1 Background

Various activities falling under the general categories of cultural resource identification, documentation, and evaluation for the Dewey-Burdock ISR Project have been completed. Some of these activities were completed under the NHPA and its implementing regulations, specifically for the Section 106 process (36 CFR Part 800, "Protection of Historic Properties"). The results of these investigations and efforts have been extensively documented and summarized elsewhere (e.g., NRC, 2014a, 2014b, 2014c, and 2014d) and need not be repeated in detail here. Earlier cultural resource efforts include a Class III (intensive pedestrian) survey of 4,173 ha (10,311 ac) between April and August 2007 and an additional 526 ha (1,300 ac) between July and September 2008. The 2007 and 2008 field investigations included evaluative testing at 43 sites. In 2011, additional evaluative testing at 20 unevaluated sites located within the project boundary provided data for recommendations on National Register of Historic Places (NRHP) eligibility. More than 200 archaeological and historic sites were identified, documented, and evaluated as part of these activities.

In February 2013, the NRC staff invited 23 consulting Tribes interested in the proposed Dewey-Burdock ISR Project to participate in a field survey of the entire project area to identify potential properties of religious and cultural significance to Tribes. In spring 2013, the NRC staff arranged for site access of the Dewey-Burdock ISR Project site and each consulting Tribe was invited to conduct a field survey implementing its own survey methodology. Seven Tribes participated in the field survey at the Dewey-Burdock ISR Project site—the Northern Arapaho Tribe, Northern Cheyenne Tribe, Turtle Mountain Band of Chippewa Indians, Crow Creek Sioux Tribe, Cheyenne and Arapaho Tribes of Oklahoma, Crow Nation, and Santee Sioux Tribe (NRC, 2014d).

Tribal field efforts in 2013 focused on two objectives: (1) additional inspection of a number of the previously recorded archaeological sites that exhibited certain features of potential interest to the Tribes (e.g., stone alignments, cairns, and possible burials), and (2) pedestrian surveys of additional acreage within the entire Dewey-Burdock ISR Project area. The Tribal cultural survey activities resulted in the recording of 47 new discoveries in the project area, although 13 of these cultural features were subsequently identified as lying outside the Dewey-Burdock ISR Project area boundary. Tribal experts further visited 24 of the previously recorded archaeological sites, recording 81 cultural features within the project boundary. Some of the cultural features recorded by Tribal survey teams correspond to features identified in the archaeological surveys; however, many represented new discoveries. A number of the new discoveries identified by Tribes are near the boundaries of known archaeological sites and could reasonably be considered part of those sites if the current archaeological site boundaries were expanded to include them. Other new discoveries are located in close proximity to one another and may be culturally related (NRC, 2014d).

The seven participating Tribes identified a variety of Tribal places on the Dewey-Burdock ISR Project landscape, including the following 16 types of potentially significant places, with the noted frequency of occurrence (some places include multiple types of features):

- (1) stone circles (general identification)—17
- (2) stone circles (fasting places)—5
- (3) fasting places (general)—6

- (4) cairns—19
- (5) quarry (lithic reduction)—4
- (6) ceremonial site (unspecified)—4
- (7) pipe ceremony location—1
- (8) earth paint source areas—2
- (9) possible medicine wheels—3
- (10) stone alignments—2
- (11) possible gravesites—9
- (12) campsite/hearth—9
- (13) prayer/offering location—1
- (14) effigy—1
- (15) buffalo bones—1
- (16) four directions marker—1

2.2 Current Activities

As noted in Chapter 1, as part of the Dewey-Burdock ISR adjudicatory process before the ASLBP, the NRC staff developed and selected an approach in March 2018 designed to obtain relevant additional information on the cultural, historical, and religious places or resources of potential significance to Lakota and other invited Tribes that could be impacted by the Dewey-Burdock ISR Project. After SC&A was brought into the project to support the NRC staff in implementing the selected approach, the initial task involved a review of existing information and literature available on historic, cultural, religious resources of significance to Lakota Sioux Tribes as related to the Dewey-Burdock ISR Project (Nickens, 2018). This effort examined and evaluated more than 200 sources within the following subject areas:

- relevant Lakota ethnographic sources
- relevant non-Lakota ethnographic sources (includes the following Dakota Tribes: Crow Creek Sioux, Flandreau Santee Sioux, and Yankton Sioux)
- the Black Hills as sacred geography
- individual places of Tribal significance in the region
- physical and other evidence for Lakota traditional places of occupation and religious use of the cultural landscape
- Dewey-Burdock ISR Project sources and applicable NRC guidelines
- Black Hills region Federal agency cultural resource management documents
- regional NEPA documents, including Lakota consultation

In preparation for the June 11–22, 2018, Tribal field effort at the Dewey-Burdock ISR Project site, SC&A personnel sought to identify, consolidate, and evaluate existing information, including reports, site forms, maps, and previous GPS data in preparation for the field survey. SC&A further developed documentation forms to provide consistent and comparable documentation of both individual places and features that might be identified on the landscape and associated ethnographic information for the cultural significance for each place identified by the participating Tribes.

During the week of June 11, 2018, SC&A personnel completed certain field activities at the Dewey-Burdock ISR Project site, including revisiting 20 Tribal sites identified during the 2013 Tribal survey that lie within the designated ISR project area of potential effects (APE) and documenting basic descriptive information about these sites;² a viewshed analysis to determine whether any of the numerous regional places of Tribal cultural or religious significance, as identified by the literature review, could be seen from the project area; and an evaluation of the current status of bald eagle nesting within the ISR project area, the latter being a potential place/resource of religious significance to Lakota Tribes. Consequently, the purpose of the remainder of this report summarize field observations conducted at the Dewey-Burdock ISR Project site by SC&A personnel from June 11–14, 2018.³

² The APE for the review of effects on historic properties at the proposed Dewey-Burdock ISR Project may be directly or indirectly impacted by the specific nature of the construction, operation, aquifer restoration, and decommissioning activities for the proposed project.

³ SC&A field activities at the Dewey-Burdock ISR Project site were supported by Mr. Mark Hollenbeck, Powertech project manager, and other Powertech staff at Powertech's local office in Edgemont, South Dakota.

3 DATA OVERVIEWS

This chapter summarizes the results of the field tasks conducted June 11–14, 2018, with respect to three topics: (1) the possibility to see any of the documented regional traditional cultural properties (TCPs) or other places of potential Tribal significance, (2) the current status of bald eagle presence, especially nesting activities, within the Dewey-Burdock ISR Project site, and (3) the effort to revisit, re-identify, and more fully document previously identified places of Tribal significance, particularly those situated in the Dewey-Burdock ISR Project APE.

3.1 Viewshed Observations and Analysis

As noted, one of the objectives of the June 2018 field visit was to evaluate the potential for visibility from the Dewey-Burdock ISR site of any of the known places of cultural and religious significance that occur within the Black Hills proper and the surrounding region, as enumerated and discussed in the Dewey-Burdock ISR literature review for Lakota historic, cultural, and religious resources (Nickens, 2018). The potential to see such places from the Dewey-Burdock ISR license area is especially critical for the higher Black Hills peaks, which have been accorded sacredness by Lakota and other regional Tribes, and the culturally significant Red Valley or “Race Track” geological feature that passes the Dewey-Burdock ISR site only a few miles to the northeast. Although the primary concern was for the visibility of known Lakota sacred places lying north, northeast, and east of the ISR site, a consultant for the Oglala Sioux Tribe informally raised a similar concern about the potential to see any similar places of Tribal significance lying west of the Wyoming state line (Rom, 2018).

To complete this analysis, SC&A staff conducted a wide-ranging vehicular survey of the license area in the company of the Powertech project manager. As reflected in Figures 1 and 2, views to the west, north, and east are entirely limited by mountainous elevations and various smaller tree-covered knolls (Table 1). To the west, the preeminent ridgeline of the Twentyone Divide in Niobrara County, WY, blocks all westerly views from the license area. Similarly, the prominent elevations of the Elk and Pilger Mountains fully impede views to the northwest, north, northeast, and east of the Dewey-Burdock ISR Project site. Based on these onsite observations, it can be stated decisively that no known regional TCPs or other potential places of Tribal cultural or religious significance lying beyond the license area boundaries can be seen from within the Dewey-Burdock ISR site.

Table 1. Approximate Maximum Elevations for the Proposed Dewey-Burdock Central Processing Plant (CPP) and Surrounding Elevations

Feature	Approximate Maximum Elevation	Direction from CPP
Dewey-Burdock proposed CPP	1,137 m (3,730 ft)	
Twentyone Divide, Niobrara County, WY	1,203 m (3,945 ft)	West
Elk Mountain, Custer County, SD	1,726 m (5,663 ft)	Northwest
Pilger Mountain, Custer and Fall River Counties, SD	1,459 m (4,788 ft)	North, Northeast, and East



Figure 1. Views to the north, northwest, and northeast from a point just north of the proposed Dewey-Burdock ISR Project CPP (S. 2, 7 South/1 East). Top—looking north, with Elk Mountain at the left center, an unnamed pine-covered knoll in the center, and Pilger Mountain extending to the right center. The Pass Creek drainage enters the project area between Elk and Pilger Mountains. Center—Looking slightly northwest from the CPP, with Elk Mountain dominating the viewshed. Bottom—View to the northeast from the CPP, with the long ridgeline of Pilger Mountain restricting the viewshed; this elevation continues along the north/south eastern boundary line of the license area, totally restricting views to the east. The light-colored mound at the right center of the view is a spoil pile from early open-pit uranium mining activities.

3.2 Bald Eagle Observations and Analysis

Eagles, including habitat, nests, feathers, and other body parts, remain sacred to many American Indian Tribes and Tribal members and are central to ongoing religious practices. The Lakota Tribes of South Dakota are no exception. During the Sun Dance, Lakota dancers continuously play eagle bone whistles made from a leg or wing. The golden eagle is particularly associated with warriors' courage in battle in earlier times, with golden eagle feathers being given for brave acts. Feathers earned as war honors were worn in war bonnets, headdresses, or belts (DOI, 2016).

Conservation efforts led to the removal of the bald eagle from the Federal endangered species list in 2007 and from South Dakota's State threatened list in 2015, although it remains protected under the Federal Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. A recent in-depth analysis of the Federal trust responsibility of the U.S. Government for Tribes with regard to eagles (DOI, 2016) noted that NHPA provisions, including with regard to potential TCPs and the American Indian Religious Freedom Act, may well apply to NEPA analyses. Thus, depending on individual cases, places such as a landform or landscape known for eagle habitation, or an eagle nesting place itself, may be potential places of religious and cultural significance for Tribes or contributing features or elements of a larger property of religious or cultural importance.

Previous biological studies of the Dewey-Burdock ISR Project site identified the presence of two bald eagle nests, both located at the western edge of the license area (NRC, 2014a; Thunderbird Wildlife Consulting, 2013). The bald eagle nests were observed along or near Beaver Creek during winter roost surveys conducted from 2007 to 2011 and produced one fledgling each year in 2008, 2009, and 2010. The first bald eagle nest (designated BE1a) was observed in 2008 and 2009 approximately 1.6 kilometers (km) (1 mile (mi)) west of the proposed Dewey satellite processing plant in a cottonwood tree along Beaver Creek (SE, SW, S. 30, 6 South/1 East) (Figure 2). The second bald eagle nest (BE1b) was observed in a cottonwood tree approximately 1.2 km (0.75 mi) southeast of the first nest (NE, NE, S. 31, 6 South/1 East). Although not confirmed, it is assumed that both of these nests were used by a single nesting pair of eagles. As confirmed by the June 2018 field visit, eagle nest BE1b is no longer extant, the dead cottonwood tree holding it having fallen since 2013 when nest BE1b was observed to have been used by the nesting eagle pair and fledged one young bird (Thunderbird Wildlife Consulting, 2013).

Although observation and monitoring of bald eagle activity, including nesting habits, at the Dewey-Burdock ISR Project site has been limited since the 2014 issuance of Materials License SUA-1600 by the NRC staff because of a pause in pending construction activities, it is evident from the June 2018 field visit that at least one bald eagle nest remains along Beaver Creek at the western extremity of the license area. During the 2013 Tribal surveys for potential traditional places of cultural or religious significance, access to portions of Sections 29, 30, 31, and 32 of the site was restricted because of the presence of an active bald eagle nest (BE1b) at the start of the field effort (on April 2, 2013). Because the survey took place while hatchlings were present in the nest, Powertech arranged for a trained biologist to monitor the nest on May 6, 2013, while two survey team members from the Northern Arapaho Tribe examined this area. During the 2013 tribal field survey effort, none of the seven participating Tribes provided documentation about the active bald eagle nest as a place or resource of potential Tribal cultural or religious significance. However, during the June 5, 2018 teleconference call on the NRC staff's selected approach to acquire additional information for places/resources of potential significance for Lakota Tribes at the Dewey-Burdock ISR Project site, the Tribal Historic

Preservation Officer for the Rosebud Sioux Tribe, Mr. Ben Rhodd, expressed a concern about potential disturbance of an eagle's nest at the Dewey-Burdock license area (NRC, 2018c).

All existing or future eagle nests within the Dewey-Burdock ISR license area will receive both monitoring and mitigative measures during all phases of the ISR project, following procedures outlined in the "Draft Avian Monitoring and Mitigation Plan for the Powertech (USA), Inc.'s Dewey-Burdock Project" (Thunderbird Wildlife Consulting, 2013). These measures include continual monitoring in the preconstruction, construction, and operational phases to document the current nesting pair's tolerance level for and responses to ongoing project activities in order to develop additional protective guidelines, as necessary. Trained biologists would participate in preconstruction planning, documenting disturbance activities, recording the eagles' responses, and developing nesting buffer zones, as needed, especially as breeding seasons or environmental conditions call for added mitigative measures. Finally, expanded biological surveys of the entire license area would be completed by Powertech biological consultants to identify other natural potential eagle nesting locations and the possible need to erect artificial nest structures in the future (NRC, 2014a, Section 7.4.2; Thunderbird Wildlife Consulting, 2013, Section 6.1). As part of the avian plan, no bald eagle nests, active or abandoned, will be removed or relocated from the license area. Although directed at biological monitoring and mitigation needs, such procedures would ensure that any potential Tribal concerns for eagle protection at the Dewey-Burdock ISR Project site related to cultural or religious significance are addressed as well.



Figure 2. Bald eagle nest BE1a is located in the cottonwood tree at the right, situated on the west bank of Beaver Creek, looking southwest. The western boundary line of the Dewey-Burdock ISR Project license area, coinciding with the South Dakota—Wyoming State line, is approximately 0.5 km (0.3 mi) west of this tree. The distinctive landform in the distance is the northwest-southeast trending Twentyone Divide in Niobrara County, WY. This landform wholly restricts westerly views from the Dewey-Burdock ISR Project site.

3.3 Dewey-Burdock ISR Project Places of Tribal Significance

During compilation and evaluation of existing Dewey-Burdock ISR cultural resources data in preparation for the June 2018 Tribal field session, the NRC's contractor, SC&A, noted that certain data from the 2013 Tribal field survey could be further strengthened, particularly with regard to specific location coordinates to ensure that tribal field efforts would be carried out more effectively. Although GPS data were recorded for all places/features identified during the 2013 field efforts, a single listing of these coordinates could not be found. In the case of 2013 Tribal sites occurring within the APE (N=21), only buffer circles, consisting of 300-meter (984-foot) buffers, were found to exist in present-day records. Although sites consisting of a single feature would be expected to occur at the center point of the buffered area, several of the designated Tribal sites within the APE included multiple features or were close enough to each other such that buffer circles overlapped on the landscape, meaning that such sites/features would have to be revisited on the ground and new GPS coordinates calculated. Tribal places identified in the ISR project area but outside the APE zone were represented by a single dot on a map, from which Universal Transverse Mercator (UTM) coordinates could be calculated. Here again, some of these sites are known to comprise multiple and scattered features.

On June 8, 2018, the final work day before the startup of the field session scheduled to begin on June 11, counsel for the Oglala Sioux Tribe e-mailed the NRC with a request that no Tribal field effort be scheduled for the following week, June 11–15, 2018, proposing instead that the NRC project manager and SC&A technical lead attend a series of work sessions and meetings at the Oglala Sioux Tribe Historic Preservation office at Pine Ridge, SD, to discuss field methodologies and overall scheduling of the tasks included in the NRC approach. The NRC staff agreed to these meetings with the Tribal staff and decided to have the two-person SC&A field team go to the Dewey-Burdock ISR Project site and revisit, record GPS data as necessary, and to obtain basic descriptive documentation on the 2013 Tribal sites, beginning with those Tribal sites located in the APE. Thus, during June 11–14, 2018, 20 of the 21 designated Tribal places in the APE were revisited, coordinates recorded, and basic documentation completed (Table 2). No attempt was made to revisit and re-identify one of the 2013 Tribal sites in the APE, an isolated artifact designated TS005 and consisting of a single flake.

As noted, for those 2013 Tribal sites in the APE zone, available information consisted solely of a site number, a brief descriptor of the Tribal feature(s) identified there, a buffer circle plotted on a topographic map, and satellite imagery that SC&A personnel prepared before entering the field. Using this information, the SC&A two-person field crew re-identified, as could best be accomplished with the data available; made a GPS recording of the coordinates; and completed a “Dewey-Burdock Project Cultural Heritage Form” for each of the 20 Tribal places. For each of the Tribal places identified by the participating 2013 Tribes, additional locational information (GPS data, location on U.S. Geological Survey topographic maps, and satellite imagery) was provided, along with basic information for site type, description, and the setting (see Appendix C). As the overall intent of the June 2018 field effort was to gain a Lakota perspective on these previously identified Tribal places, the absence of Tribal members during this field effort meant that the Tribal significance of the places could not be evaluated further. However, by having the coordinates known and the additional documentation completed, subsequent visits by Lakota field crews would be significantly expedited as part of the field effort for the NRC approach (NRC, 2018a).⁴

⁴ On June 15, 2018, the NRC decided to discontinue all fieldwork associated with the June 11–22, 2018, session (NRC, 2018d).

Appendix A lists the UTM coordinates for the 20 Tribal sites from 2013 revisited in June 2018, including the temporary site number assigned by the present effort and the corresponding 2013 site numbers, which often include multiple Tribal site (TS) numbers and, in several instances, an associated archaeological site number from the 2007–2008 archaeological and historical field surveys. As discussed, SC&A staff recorded the UTM coordinates given in Appendix A during the June 2018 field effort. Appendix B lists UTM coordinates for 2013 Tribal sites that lie outside the APE, as calculated from existing maps and files. SC&A staff did not revisit any of these places during the June 2018 field visit. Appendix C contains completed cultural heritage forms for the 20 Tribal sites identified in 2013 and lying within the APE. All data in these forms were generated during the 2018 fieldwork effort.

Table 2. Archaeological/Tribal Sites in the Dewey-Burdock APE, Revisited in June 2018

2018 No.	2013^a Archaeological/Tribal Site Nos.	Tribal Features	Previous NRHP Evaluation
D-B001	39FA0096, TS001, TS004, TS013	Hearth; earth paints	Eligible
D-B002	TS007-11	Stone circle; alignment	Eligible
D-B003	TS080-89, TS098	Stone alignment and arc; ceremonial site; pipe ceremony location	Eligible
D-B004	TS144	Stone cairn	Not eligible
D-B005	TS145	Prayer offering location	Eligible
D-B006	39CU0251 TS096	Stone circle	Not eligible
D-B007	TS095	Disturbed stone cairn; modern survey marker	Not eligible
D-B008	TS093	Possible stone cairn	Not eligible
D-B009	TS094	Stone cairn	Not eligible
D-B010	39CU3604 TS121-122	Fasting, prayer circles	Eligible
D-B011	TS120	Hearth	Eligible
D-B012	39CU3596 TS054	Disturbed artifact scatter	Not Eligible
D-B013	39CU3593 TS055	Stone cairn	Not eligible
D-B014	TS030	Stone circle	Not eligible
D-B015	39CU3572 TS034	Stone circles; or possible medicine wheel	Not eligible
D-B016	39CU3584 TS025-27, TS029	Stone cairn; stone alignment; stone circle	Not eligible
D-B017	39CU3576 TS020	Tested cobble	Not eligible
D-B018	TS028	Three stone circles; campsite; ceremonial site	Not eligible
D-B019	39CU3567 TS031-33, TS141	Three stone circles; scattered hearth	Eligible
D-B020	39CU0271, TS019, TS130, TS035	Cairn; possible gravesite; earth paint	Eligible

^a Source for 2013 Tribal survey information is NRC (2014d)

4 SUMMARY

This report documents the findings of SC&A fieldwork efforts during June 11–14, 2018, at the Dewey-Burdock ISR Project site in Custer and Fall River Counties, SD. These activities resulted in completion of the following three tasks:

- (1) an onsite viewshed analysis leading to a determination that none of the known regional places of Tribal cultural or religious significance can be viewed from the ISR project area, including the nearby Red Valley or “Race Track,” a geological feature having a high level of significance for Lakota and other Northern Plains Tribes;
- (2) an assessment of the current status of bald eagle nesting location(s) within the ISR site, including a finding that presently a single nest is located in the far western sector of the project area, along the Beaver Creek drainage; and
- (3) revisiting and further documenting of 20 previously identified Tribal sites within the designated APE of the Dewey-Burdock ISR Project site and the recording of GPS data and basic descriptive cultural heritage information for each of these places to expedite subsequent fieldwork by Tribal representatives.

5 REFERENCES

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APPENDIX A

Previously Recorded Dewey-Burdock *In Situ* Uranium Recovery Project Archaeological/Tribal Sites Revisited during the June 2018 Field Effort, with Newly Recorded Universal Transverse Mercator (UTM) Coordinates

Each of these places is located within the designated Dewey-Burdock *in situ* uranium recovery area of potential effects or APE.

2018 Dewey-Burdock ISR Site Number (Previous South Dakota Site Number/2013 Tribal Site Number)	Feature	UTM Coordinates		Zone	Comments
		Northing	Easting		
D-B001 (39FA0096, TS001, TS004, TS013)	A: Hearth	4812232	581989	13	Charcoal eroding from gradually sloping area of erosion
	B: Earth paint	4812474	581531	13	Yellow paint
D-B002 (TS007-11)	Rock alignment	4812633	583411	13	
D-B003 (TS080-89, TS098)	Rock circle	4814552	583820	13	
D-B004 (TS144)	Possible cairn	4814404	584281	13	
D-B005 (TS145)	Offering	4812757	585490	13	
D-B006 (39CU0251, TS096)	Native American stone feature	4814973	584199	13	Could not relocate feature documented in 2013 survey
D-B007 (TS095)	Cairn	4815444	583659	13	
D-B008 (TS093)	Possible cairn	4815585	583591	13	
D-B009 (TS094)	Cairn	4815969	584183	13	
D-B010 (39CU3604, TS121-122)	Multiple features	4814568	580801	13	Circular clearings in vegetation because of soil compaction, rock alignments
D-B011 (TS120)	Hearth	4815302	580197	13	

2018 Dewey-Burdock ISR Site Number (Previous South Dakota Site Number/2013 Tribal Site Number)	Feature	UTM Coordinates		Zone	Comments
		Northing	Easting		
D-B012 (39CU3596, TS054)	Flaked stone	4815570	578884	13	
D-B013 (39CU3593, TS055)	Native American stone feature	4815040	578670	13	Could not relocate feature documented in previous survey
D-B014 (TS030)	Multiple features	4817271	578175	13	Possible cairn on top of hill, rock alignment due south 10 meters
D-B015 (39CU3572, TS034)	Medicine wheel	4816727	578484	13	
D-B016 (39CU3584, TS025-27, TS029)	A-B: Cairn alignment	4817380	577459	13	Cairn alignment, stone alignments
	C: Rock alignment	4817482	577448	13	
	D: Rock circle	4817498	577387	13	
D-B017 (39CU3576, TS020)	Tested cobble	4817561	577341	13	
D-B018 (TS028)	Rock alignment	4816956	577615	13	
D-B019 (39CU3567, TS031-33, TS141)	Three tipi rings	4816323	578787	13	With two hearth features
D-B020 (39CU0271, TS019, TS035, TS130,).	A: Two possible rock circles	4816940	579289	13	
	B: Possible paint source	4816619	579916	13	Black clay
	C: Multiple features	4817103	579752	13	Yellow paint source, stone feature, see photos

APPENDIX B

Universal Transverse Mercator (UTM) Coordinates for Previously Recorded 2013 Tribal Sites Occurring within the Dewey-Burdock *In Situ* Recovery License Area but Lying Outside the Designated Area of Potential Effects

None of these places was revisited during the June 2018 field effort. UTM coordinates are recalculated from preexisting data provided by U.S. Nuclear Regulatory Commission staff.

2013 Tribal Site Number	Easting	Northing
TS002	582799	4812569
TS003	583044	4812458
TS006	583004	4811307
TS012	581297	4812021
TS014	585131	4811781
TS015	585118	4811787
TS016	585124	4811804
TS017	585153	4811864
TS018	585117	4812029
TS021	579022	4817171
TS022	579014	4817170
TS023	578951	4817548
TS036	580050	4817539
TS037	580049	4817548
TS038	580067	4817681
TS039	580067	4817680
TS040	580098	4817810
TS040	580098	4817810
TS041-042	580254	4817671
TS043	579691	4818174
TS044	579683	4818196
TS045	579675	4818198
TS046	579663	4818253
TS047	580208	4818134
TS048	579151	4817741
TS049	579176	4817752
TS050	579188	4817763
TS051	579180	4817800
TS052	579211	4817848
TS053	579665	4818252
TS056	578055	4814239
TS057	578235	4814162

2013 Tribal Site Number	Easting	Northing
TS058	578569	4814165
TS059	578569	4814161
TS060	578573	4814175
TS063	585423	4814369
TS064	585430	4814365
TS065	585946	4813264
TS066	585948	4812891
TS067	586044	4811906
TS068	586014	4811720
TS069	585966	4811746
TS070	585957	4811752
TS071	586037	4811739
TS072	586032	4811740
TS073	586056	4811722
TS074	586070	4811681
TS076	586085	4811664
TS077	586084	4811634
TS078	586075	4811621
TS078	586075	4811621
TS090	583044	4815820
TS091	583105	4815936
TS092	583297	4815856
TS097	584360	4815582
TS099	578268	4813365
TS100	578285	4813349
TS101	578668	4812860
TS102	578698	4813094
TS103	578744	4813266
TS104	578761	4813275
TS105	578635	4813382
TS108	581112	4815508
TS109	581010	4815331
TS110	580870	4815252
TS111	580859	4815204
TS114	580918	4814939
TS115	580967	4814952
TS116	580704	4815068
TS117	580704	4815068
TS118	580625	4815136
TS119	580493	4815210

2013 Tribal Site Number	Easting	Northing
TS123	579768	4814148
TS124	579817	4814048
TS131	579024	4817489
TS132	579670	4818198
TS133	579674	4818200
TS134	579674	4818198
TS135	579674	4818193
TS136	579677	4818197
TS137	579683	4818194
TS138	579688	4818194
TS139	579701	4818190
TS140	579743	4818176
TS142	585117	4812028
TS143	584983	4812028

APPENDIX C

Dewey-Burdock *In Situ* Recovery Project Cultural Project Heritage Forms Completed for the 2013 Tribal Sites Revisited and Documented during the June 2018 Field Effort (N=20)