

Crow Butte Resources, Inc. Proposed Marsland Expansion Area NRC Documentation of NHPA Section 106 Review (Draft Cultural Resources Sections of Environmental Assessment)

This document contains sections related to historical and cultural resources from Chapter 3, “Affected Environment,” and Chapter 4, “Environmental Impacts,” of the NRC staff’s draft environmental assessment (EA) for the Crow Butte Marsland Expansion Area (MEA) license amendment proceeding. These sections include the staff’s documentation of its consultation activities pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA). For clarity, some additional text not specifically related to cultural resources (such as definitions related to impacts and general information pertaining to cumulative impacts) is provided. The “References” section at the end of this document contains all of the references cited in the sections provided below.

3 AFFECTED ENVIRONMENT

3.6 Historic and Cultural Resources

Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), requires that Federal agencies take into account the effect of an undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places (NRHP). As part of this required evaluation, Federal agencies must consult with Tribes to determine whether there are historic properties of cultural and religious significance to Tribes that may be adversely affected by a proposed undertaking.

3.6.1 Federal Undertaking

By letter dated May 16, 2012 (CBR, 2012), Crow Butte Resources, Inc., (CBR) submitted to the U.S. Nuclear Regulatory Commission (NRC) staff a request to amend its source material license for its uranium in situ recovery (ISR) facility located in Crawford, Nebraska (referred to in this report as the original license area). License No. SUA-1534 authorizes the licensee to operate an ISR uranium recovery facility to produce yellowcake. The amendment would allow CBR to conduct ISR operations at the Marsland Expansion Area (MEA), located 15 miles south-southeast of the town of Crawford, Nebraska. In response to the NRC staff’s requests for additional information and open issues, CBR supplemented the application by revisions in August 2013 (CBR, 2013); January 2014 (CBR, 2014a); and April 2014 (CBR, 2014b).

The amendment of a source and byproduct materials license is a Federal action that may affect either known or undiscovered historic properties located on or near the proposed MEA project area. In accordance with NHPA provisions, the NRC is required to make a reasonable effort to identify historic properties in the area of potential effect (APE). The APE is the area that may be directly or indirectly impacted by the construction, operation, aquifer restoration, and decommissioning of the proposed action. For this review, the APE is the entire MEA license boundary area, comprising approximately 4,622 acres.

3.6.2 Cultural History

Adequate summaries of the cultural background for the area of western Nebraska where the CBR-proposed MEA is located can be found in NUREG-1910, “Generic Environmental Impact

Statement for In-Situ Leach Uranium Milling Facilities” (NRC 2009), available CBR project-specific cultural resources reports (Graves et al., 2011; Graves et al., 2012), and elsewhere (Koch, 2000; Louis Berger, 2005). Consequently, given the existence of these other sources, this section provides only a short, general overview of relevant background information to facilitate the later presentation of the NRC’s findings.

3.6.2.1 Prehistoric Periods

The prehistoric cultural background is categorized into the following sequential developments, which are generally recognized in terms of archeology as occurring over a large area of the central plains (Koch, 2000; Bozell, 2004; Graves et al., 2011):

- Paleo-Indian Big Game Hunters (12,000 to 8,000 years before the present (BP)). This cultural tradition began as humans gradually entered the plains following deglaciation of the region, sometime after 14,000 BP. The economy was focused on the hunting of big game animals, notably mammoth and mastodon, and ancient forms of bison. Toward the end of the period, a transition in subsistence modes toward the modern form of bison took place, along with increased reliance on plant foods.
- Archaic Foragers (8,500 to 2,000 BP). The Plains Archaic period represents a continuation of the change in subsistence patterns that occurred in the latter part of the Paleo-Indian era. The diversity in dietary sources was more pronounced, and settlement patterns became more associated with highly productive food resource areas.
- Plains Woodland (2,000 to 1,000 BP). The Plains Woodland period is characterized by largely sedentary lifestyles, with a mixed economy based on wild game animals, wild plants, and the beginnings of maize and bean horticulture. The defining settlement pattern of this period consists of earth lodge villages located along the larger drainages. This period marked the appearance of ceramic containers in the region.
- Plains Village (1,000 to 600 BP). This period continued the trend toward increasing sedentism and increasing reliance on domesticated plants. Villages were primarily located along major river systems and larger tributaries. By the end of this period, the basic tribal structure of the later historic period on the plains was in place.

3.6.2.2 Proto-Historic and Post-Contact Tribes (400 BP to Present)

The post-contact period on the northern plains is that period after initial contacts with Europeans and later Americans (DeMallie, 2001). The earliest documented contact in the region is by Spanish and French explorers in the early 1700s. Western Nebraska was home to “nomadic” people who resided in tepee villages and depended on bison hunting. At various times, these Tribes included the Apache, Crow, Kiowa, Cheyenne, Teton (Sioux), Comanche, and Arapaho. The Lakota Sioux, Northern Cheyenne, and Arapaho resided in northwestern Nebraska, and the Oglala and Sicangu Brule Sioux were concentrated around the Black Hills in northern Sioux country. By the mid-1800s, the Oglala and Brule bands had extended their range southward to the Platte River region of Nebraska.

The predominant Tribe in the region that includes the project area was formed by linguistically and regionally based groups and several subgroups of what has been termed the “Great Sioux Nation” (Van Vlack et al., 2012). These groups and subgroups include the following:

- Lakota (Lakóóta, Teton)
 - Northern Lakota (Húkpapáa, Sihásapa)
 - Central Lakota (Mnikówožu, Itázipčo, Oóhenuŋpa)
 - Southern Lakota (Oglála, Sičhájú)
- Western Dakota (Yankton-Yanktonai or Dakóóta)
 - Yankton (Iháŋktúŋwaŋ)
 - Yanktonai (Iháŋktúŋwaŋna)
- Eastern Dakota (Santee-Sisseton or Dakhóta)
 - Santee (Isányáthi: Bdewákhathuŋwaŋ, Waǰpékhute)
 - Sisseton (Sisíthuŋwaŋ, Waǰpéthuŋwaŋ)

Article 5 of the Fort Laramie Treaty of 1851 defined territories of each participating Tribe, including the Sioux Nations of Rosebud, Standing Rock, Pine Ridge (Oglala), Crow Creek, Lower Brule, Cheyenne River, Santee, and Fort Peck, and indicated that the Sioux territory included land in northwestern Nebraska north of the North Platte River. By the Fort Laramie Treaty of 1868 between the United States and the Oglala, Miniconjou, and Brule bands of Lakota people; Yanktonai Dakota; and Arapaho Nation, land located in the future Dawes County, NE, was included in “unceded” territory that was reserved by the Sioux Nation for the right to hunt and travel, but not for occupation. The 1868 Fort Laramie treaty created the Great Sioux Reservation, essentially all of present-day South Dakota, for the various Sioux groups and subgroups to occupy.

Many Lakota refused to recognize the 1868 Fort Laramie treaty, saying it provided little to the people and pointing out that non-Indians continued to use their land, and the Government did not honor treaty provisions that promised rations, clothing, and schools. These people continued to live in their traditional areas in the unceded lands, followed the buffalo, and maintained their traditional ways of life.

Following the 1868 Fort Laramie treaty, the United States established the Red Cloud Agency in August 1873, just west of the present town of Crawford in Dawes County, NE. Although members of the Oglala Lakota were placed at the agency, members of other Tribes, such as the Northern Cheyenne and Arapaho, were also sent to the agency.

In 1887, the U.S. Congress passed the General Allotment Act (Dawes Act) to break up communal Indian lands into individual family holdings within the Great Sioux Reservation. On March 2, 1889, Congress passed another act partitioning the former reservation into five smaller reservations, mostly in South Dakota:

- Standing Rock Reservation, with its agency at Fort Yates
- Cheyenne River Reservation, with its agency on the Missouri River near the mouth of the Cheyenne River (later moved to Eagle Butte following the construction of Oahe Reservoir)

- Lower Brule Reservation, with its agency near Fort Thompson
- Upper Brule or Rosebud Indian Reservation, with its agency near Mission
- Pine Ridge Reservation (Oglala Sioux), with its agency at Pine Ridge near the Nebraska border

The U.S. Indian Claims Commission confirmed on February 15, 1974, that the part of the Nebraska Panhandle area, including Dawes County, was traditionally occupied and used by the ancestors of the modern-day Tribes of the Rosebud, Standing Rock, Pine Ridge (Oglala), Crow Creek, Lower Brule, Cheyenne River, Santee, and Fort Peck Sioux Reservations (33 Ind. Cl. Comm. 151, Docket No. 74-B).

3.6.2.3 *Euro-Americans (300 BP to Present)*

As American settlers began emigrating through Nebraska on trails to the western United States in the mid-1800s, increasing conflicts arose in what had previously been Tribal-use lands (Shumway, 1921; Louis Berger Group, 2005; Buecker, 2003). The establishment of forts on Indian lands and an influx of settlers into the Nebraska Panhandle led to further agitation. The Fort Laramie Treaty of 1851 was signed with the intent of protecting American travelers along the emigrant trails, while preserving the traditional use lands for the Cheyenne, Sioux, Arapaho, Crow, Assiniboine, Mandan, Hidatsa, and Arikara Nations. Lack of enforcement by the U.S. Government of this treaty resulted in further conflict, eventually leading to the Fort Laramie Treaty of 1868. Continued disagreements between the United States and Tribes led to the construction of Fort Robinson adjacent to the Red Cloud Agency to keep peace. Fort Robinson served a vital role during the Sioux Wars of 1876–1877 and was the place of the Cheyenne Outbreak of September 9, 1878. Fort Robinson was also the setting for the tragic death of the Oglala Lakota leader Crazy Horse on September 5, 1877. In 1878, the Red Cloud Agency was moved to the newly created reservation in South Dakota, where it was renamed the Pine Ridge Agency and Reservation. Use of Fort Robinson continued through World War I, and in World War II, it was a training site for soldiers and a camp for German prisoners of war. It ceased use as a military camp in 1948 and today is a Nebraska State park and historic site.

The town of Crawford, located about 10 miles (16.1 kilometers (km)) north-northwest of the MEA, began about 1866 as a civilian tent camp to support Fort Robinson. The town was formally established and named in 1886; by then, it was the hub of an area of active ranching and farming. Throughout its early history, Crawford and the immediate area included several significant regional transportation routes:

- Fort Laramie, WY, to Fort Pierre, SD, Trail (1837 to 1880s)
- Sidney, NE, to Deadwood, Black Hills, SD, Trail (1874 to 1880)
- Fort Robinson/Red Cloud Agency to Camp Sheridan/Spotted Tail Agency Road (1874 to 1886)
- Fremont, Elkhorn, and Missouri Valley Railroad, then a subsidiary of the Chicago and Northwestern Railroad (reached Crawford in 1886)
- Chicago, Burlington and Quincy Railroad (reached Crawford in 1887)

None of these transportation routes crossed the proposed MEA, although the Sidney-Deadwood trail (Mahnken, 1949; McNair, 2005) and the Chicago, Burlington and Quincy Railroad followed a north-south path just west of the MEA boundary. Construction of the Chicago, Burlington and Quincy Railroad tracks near the MEA was completed in 1888–1889. Two small towns, Marsland and Belmont, appeared at this time to support the construction activities and as places for stations (Hinchley, 2005; Louis Berger Group, 2005). Marsland, located about 3 miles (4.8 km) west-southwest of the southwest corner of the MEA on the north side of the Niobrara River, began in 1889 as a station location for the railroad. By the early 1940s, the town’s population had greatly diminished, and only a few buildings remain today. Belmont is located about 7 miles (11.3 km) north of Marsland and about 3.5 miles (5.6 km) west of the northwestern part of the MEA. It began as a construction camp for the well-known Belmont Tunnel, the only railroad tunnel ever constructed in Nebraska. The tunnel was completed in August 1889 and continued in use until 1982, when the Burlington Northern Railroad constructed a new right-of-way immediately to the west of the tunnel (Louis Berger Group, 2005). Belmont is today an abandoned town with only a few buildings still standing. Marsland, Belmont, and the Belmont Tunnel have been recorded as historic sites; each is at a sufficient distance from the MEA boundary that there would be no impacts from project activities (CBR, 2014b).

Historic period settlement of the MEA APE is characterized by early ranching and homesteading activities. Public land patent records show that lands within the MEA were patented between 1891 and 1917 (Graves et al., 2011).

3.6.3 Identified Historic and Cultural Resources

Information for known or previously recorded historic and cultural properties comes from several sources, including the most recent NRHP list, the Nebraska Historical Markers Program, administered by the NE State Historical Society, and a previous project-specific field inventory of the CBR MEA APE (Graves et al., 2011; Graves et al., 2012) that resulted in the recording of 15 historic resource sites. None of the newly recorded sites is currently evaluated as eligible for listing on the NRHP, although two are recommended as requiring additional evaluation should they be directly impacted by future project development.

3.6.3.1 National Register of Historic Places Properties

As shown in Table 3-5, five historic period sites within 15 miles (24.1 km) of the MEA are listed in the NRHP (Louis Berger Group, 2005); none of these is closer than 7 miles (11.3 km) to the MEA and so would not likely be impacted by activities at the MEA. All are in Dawes County. In addition to being listed on the NRHP, the Fort Robinson and the Red Cloud Agency property (west of the city of Crawford and within the boundaries of the Fort Robinson State Park) is also designated a National Historic Landmark by the U.S. Department of the Interior (NPS, 2012). National Historic Landmarks are nationally significant historic places designated by the Secretary of the Interior because they possess exceptional value or quality in illustrating or interpreting the heritage of the United States.

Table 3-5 NRHP-Listed Properties in Proximity to the MEA

NRHP-Listed Properties	Date Listed	Approximate Distance/Direction from the CBR MEA
Army Theater, Fort Robinson State Park	July 7, 1988	13 mi. NW

NRHP-Listed Properties	Date Listed	Approximate Distance/Direction from the CBR MEA
Co-Operative Block Building, Crawford, NE	September 12, 1985	11 mi. NW
Fort Robinson and Red Cloud Agency, also designated a National Historical Landmark, December 19, 1960	October 15, 1966	13 mi. NW
U.S. Post Office, Crawford, NE	May 11, 1992	11 mi. NW
Henry Wohlers, Sr. Homestead, southwest of Crawford, NE	October 15, 2004	7 mi. W

Source: NSHS (2011a).

The Agate Fossil Beds National Monument lies along the Niobrara River about 20 miles (32.2 km) west of and upriver from Marsland. Although one historic ranch within the monument boundaries was previously listed on the NRHP (NSHS, 2011a), the entire monument has just been nominated for NRHP listing as the “Agate Springs Fossil Hills Historic and Archaeological District” (Bahr, Vermeer, and Haecker, 2012). In conjunction with the NRHP nomination, the U.S. National Park Service recently completed cultural landscape studies for the entire Monument (NPS, 2010a), the James H. Cook Homestead Complex (NPS, 2010b), and several historic period campsites occupied by the well-known Oglala Sioux leader Red Cloud and members of his band from 1889 to 1942 (NPS, 2010c). While the proposed NRHP District is at some distance from the CBR MEA, it represents the nearest place where significant comparative analyses have been completed for historic Euro-American and Native American cultural landscapes (NPS, 2010a; NPS, 2010b; NPS, 2010c), archaeological resources (Bozell, 2004), Native American cultural affiliation (Van Vlack et al., 2012), and Native American places of religious or cultural significance (LeBeau, 2002).

3.6.3.2 Nebraska Historical Markers

The *Nebraska Revised Statutes*, Sections 82-119 through 82-124, authorize the Nebraska State Historical Society (NSHS) to mark and preserve the historical landmarks of Nebraska. This effort is coordinated through the Nebraska Historical Markers Program. Evaluation criteria for qualification for the Historical Markers Program are found in *Nebraska Revised Statutes*, Section 82-120.

NSHS has placed historical markers at 21 sites and places around the city of Crawford (NSHS, 2011b). All but three of these are related to events, places, and buildings associated with Fort Robinson and the Red Cloud Agency. The remaining three include two locales in Crawford and a “Buttes Country” marker, located 4 miles (6.4 km) east of Crawford that proclaims, in part, “Perhaps no spot in Nebraska is so surrounded by historical and geographical landmarks as this one.” No locales marked by the State program lie in proximity to the CBR MEA project area.

3.6.3.3 Previous Cultural Resources Surveys

Between November 2010 and February 2011, ARCADIS U.S., Inc. (ARCADIS), conducted an intensive (100-percent coverage) pedestrian cultural resources inventory of the 4,500-acre (18 km²) proposed license boundary area (Graves et al., 2011). ARCADIS conducted an additional intensive pedestrian cultural resources inventory of another contiguous tract of

160 acres (0.7 km²), located along the eastern boundary in the northern part of the MEA (Graves et al., 2012). Table 3-6 lists the results of those inventories.

The first ARCADIS field inventory recorded 15 newly discovered historic period sites (25DW357–371) and six historic isolated finds (2368-1004, 1007, 1011, 1013, 1019, and 1023) and further documented two previously recorded historic homesteads (25DWW00-242 and 25DW00-243). All of the sites and isolated finds encountered in the MEA can be associated with historic period ranching and farming activities in the area, dating from the late 1800s to recent times. Resource types included abandoned homesteads, a wooden bridge, secondary debris scatters, isolated livestock features such as cisterns and corrals, and isolated farm machinery. The second field inventory did not result in the discovery of any historic or archaeological sites.

None of the 17 historic period sites evaluated in the MEA was determined by ARCADIS as possessing the necessary integrity or potential significance for listing on the NRHP. ARCADIS recommended that two of the historic homesteads (25DWW00-242 and -243) should be avoided by future CBR construction activities. If direct impacts would occur at either of these two properties, ARCADIS recommended that additional archival research and more intensive documentation be completed before any construction activities. By definition, isolated finds are not considered to have any potential significance for the NRHP. The Nebraska State Historic Preservation Officer (SHPO) accepted the first cultural resources report and concurred with the NRHP eligibility recommendations on May 19, 2011, and concurred with the negative findings of the second inventory report on March 27, 2012 (CBR, 2014b).

Table 3-6 Historic Cultural Resources Sites and Isolated Finds Recorded during the Field Investigations at the MEA

Site Number	Site Type/Age	NRHP Finding
25DW242	Recently abandoned homestead; historic period, early 1900s–recent	Not eligible, but recommended for avoidance and further archival research if to be impacted
25DW243	Abandoned homestead; historic period, late 1800s–mid-1900s	Not eligible, but recommended for avoidance and further archival research if to be impacted
25DW357	Secondary debris scatter; historic period, early to mid-1900s	Not eligible
25DW358	Ranch cistern; historic period,	Not eligible
25DW359	Abandoned homestead; historic period, early to mid-1900s	Not eligible
25 DW360	Abandoned homestead; historic period, early to mid-1900s	Not eligible
25DW361	Abandoned homestead; historic period, early to mid-1900s	Not eligible
25DW362	Abandoned wooden bridge; historic period	Not eligible

Site Number	Site Type/Age	NRHP Finding
25DW363	Secondary debris scatter; historic period, late 1800s to mid-1900s	Not eligible
25DW364	Ranch cistern and debris dump; historic period	Not eligible
25DW365	Abandoned homestead; historic period, early to mid-1900s	Not eligible
25DW366	Abandoned homestead; historic period, early to mid-1900s	Not eligible
25DW367	Abandoned ranch windmill and livestock corral; historic period	Not eligible
25DW368	Abandoned dugout, historic period	Not eligible
25DW369	Secondary debris scatter; historic period, mid- to late 1900s	Not eligible
25DW370	Abandoned single foundation, historic period	Not eligible
25DW371	Sandstone quarry, historic period	Not eligible
2368-1004	John Deere 2-row Lister corn planter and John Deere disc harrow; historic period 1930s	Isolated Find – Not eligible
2368-1007	Small secondary debris scatter; historic period	Isolated Find – Not eligible
2368-1011	International Harvester disc harrow; historic period, ca. 1900–1945	Isolated Find – Not eligible
2368-1013	International Harvester Canada rod weeder; historic period, 1940s	Isolated Find – Not eligible
2368-1019	McCormick-Deering No. 7 mower; historic period, manufactured 1929–1939	Isolated Find – Not eligible
2368-1023	Large farm implement; historic period	Isolated Find – Not eligible

Source: Graves et al. (2011).

3.6.4 Tribal Consultations for the MEA

The Federal government and the State of Nebraska recognize the sovereignty of federally recognized Native American Tribes. The National Environmental Policy Act (NEPA) encourages Federal agencies to consult with Tribes in the planning process for a proposed federal Action; NHPA Section 106 requires Federal agencies to undertake consultation and coordination with each Tribal government that may have an interest in historic properties within the proposed project area. Executive Order 13175, “Consultation and Coordination with Indian Tribal Governments,” issued November 2000, excludes from the requirements of the order, “independent regulatory agencies, as defined in 44 U.S.C. § 3502(5).” However, according to Section 8, “Independent regulatory agencies are encouraged to comply with the provisions of this order.” Although the NRC is explicitly exempt from the order, the Commission remains committed to its spirit. The agency has demonstrated a commitment to achieving the order’s objectives by implementing a case-by-case approach to interactions with Tribes. The NRC’s case-by-case approach allows both the NRC and the Tribes to initiate outreach and communication with one another.

As part of its obligations under Section 106 of the NHPA and the regulations at 36 CFR 800.2(c)(2)(ii)(A), the NRC must provide a Tribe that attaches significance to affected properties “a reasonable opportunity to identify its concerns about historic properties, advise on

the identification and evaluation of historic properties and evaluation of historic properties, including those of traditional religious and cultural importance, articulate its views on the undertaking's effects on such properties, and participate in the resolution of adverse effects.”

For the MEA application, the NRC formally initiated the Section 106 consultation process for the CBR-proposed MEA project by contacting 21 Tribal governments by letters dated September 5, 2012 (NRC, 2012a). These letters invited the Tribes to participate as consulting parties in the NHPA Section 106 process and requested any known information on any areas on the project site that the Tribes believe have cultural significance. A map of the original CBR license area boundary and the proposed MEA boundary was enclosed. Following receipt of this letter, the following 21 Tribes formally requested status as consulting parties under NHPA Section 106:

- Oglala Sioux Tribe
- Standing Rock Sioux Tribe
- Yankton Sioux Tribe
- Rosebud Sioux Tribe
- Cheyenne River Sioux Tribe
- Crow Creek Sioux Tribe
- Lower Brule Sioux Tribe
- Northern Cheyenne Tribe
- Northern Arapaho Tribe
- Eastern Shoshone Tribe
- Santee Sioux Nation
- Ponca Tribe of Nebraska
- Crow Nation
- Three Affiliated Tribes (Mandan, Hidatsa, Arikara)
- Pawnee Nation of Oklahoma
- Assiniboine Sioux, Fort Peck Tribes
- Cheyenne and Arapaho Tribes of Oklahoma
- Kiowa Tribe of Oklahoma
- Apache Tribe of Oklahoma
- Comanche Nation
- Sisseton-Wahpeton Sioux Tribe

The NRC has been consulting with the 21 Tribal governments identified above regarding four CBR project areas: the original license area, which includes the Central Processing Facility (CPF) and associated mining units, the MEA, the North Trend Expansion Area (NTEA), and the Three Crow Expansion Area (TCEA). The NRC has been conducting separate Section 106 Tribal consultations for each of these CBR project areas, although there has been considerable overlap in the general consultation process because the regulatory agency, the potentially affected Tribes, and the applicant are the same in each case.

3.6.5 Places of Religious or Cultural Significance¹

3.6.5.1 Background

Places of religious or cultural significance are resources associated with the cultural practices and beliefs of a living community that are rooted in history and remain important for a group to maintain its cultural heritage. These historic places may not be represented in archaeological or historic contexts. They are often associated with Native American religious or cultural practices and include traditional gathering areas where particular plants or materials were harvested, a sacred mountain or landscape crucial to a Tribe's identity, or burial locations that connect Native Americans with their ancestors. A place of religious or cultural significance to Tribes demonstrates traditional cultural value if its significance to Native American beliefs, values, and customs "has been ethnohistorically documented and if the site can be clearly defined" (Parker and King, 1998). These sites are associated with cultural practices or beliefs of a living community that (1) are rooted in that community's history and (2) are important in maintaining the continuing cultural identity of the community (Parker and King, 1998).

In the terminology of National Register Bulletin No. 38, "Guidelines for Evaluating and Documenting Traditional Cultural Properties" (Parker and King, 1998), a "traditional cultural property" (TCP) may be a building, site, district, object, or landscape. The significance must stretch beyond the past 50 years, yet it must retain ongoing significance. Although the same aspects of integrity are relevant as for other NRHP-eligible resources (e.g., integrity of location, design, setting, materials, workmanship, feeling, and association), National Register Bulletin No. 38 (Parker and King, 1998) notes that the concept of integrity is applied somewhat differently for TCPs than it is for historic buildings or archaeological sites:

In the case of a TCP, there are two fundamental questions to ask about integrity. First, does the property have an integral relationship to traditional cultural practices or beliefs; and second, is the condition of the property such that the relevant relationships survive?

The Tribes emphasize the interconnectedness between the physical and spiritual worlds. For example, in Lakota cosmology there exist a spiritual realm and an earthly realm. What happens in one realm is reflected in the other; the two worlds are interconnected and inform the other (SRI, 2012). Tribal groups and their descendants, including the historically documented Apache, Arapaho, Arikara, Assiniboine, Cheyenne, Crow, Hidatsa, Kiowa, Mandan, Pawnee, Ponca, Sioux, and Shoshone Tribes, have made their homes in the Northern Plains for more than 12,000 years. Therefore, the area including the CBR project areas may contain landforms, resource areas, and features that are associated with the traditional cultural practices and spiritual beliefs of one or more of the Tribes being consulted under the NHPA Section 106 process.

The range of potential places of religious or cultural significance is varied and includes many property types of religious or traditional use that might be identified during a Tribal consultation process. American Indian researcher and Lakota Tribal member Vine Deloria, Jr., offers the

¹ This document uses the term "places of religious or cultural significance" in place of the more commonly employed term "traditional cultural properties"; the latter term is reserved for those places or resources that have been through a more formal identification and evaluation process during consultation, leading to a determination of their potential significance for listing on the NRHP.

following classification that reflects the wide-ranging variability for such places (Deloria and Stoffle, 1998):

- creation story locations and boundaries
- sacred portals recounting star migrations
- universal center locations
- historic migration destiny locations
- places of prehistoric revelations
- traditional vision quest sites
- plant-animal relationship locations
- mourning and condolence sites
- historic past occupancy sites
- spirit sites
- recent historic event locations
- plant, animal, and mineral gathering sites
- sanctified ground

Cheyenne River Sioux Tribal member Sebastian LeBeau makes a distinction between Lakota “Traditional Cultural Property” and “Traditional Cultural Property Sites” (LeBeau, 2009). In this taxonomy, a “Traditional Cultural Property” is any location in the landscape to which Lakota people attribute cultural significance, such as a prominent landform. In contrast, “Traditional Cultural Property Sites” are distinct places where Lakota people performed a significant cultural activity. An example of the latter would be a specific spot on a given TCP landform where a Lakota person completed a vision quest ceremony. Proper identification, documentation, and evaluation of both types of culturally significant resources at a given project area are best done from the Lakota perspective and through the NHPA Section 106 consultation process (LeBeau, 2009). Through continued consultation with the Tribes and an onsite field assessment, places that possess cultural and religious significance to the Tribes may be identified. Any identification of sacred or traditional places must be verified in consultation with authorized Tribal representatives.

3.6.5.2 Potential Places of Religious or Cultural Significance

Literature searches and input from some of the consulting Tribes have not identified any previously identified potential places of religious or cultural significance to date within the CBR original license area or the three potential expansion areas. There are some potential places in the general vicinity of Crawford, Nebraska, that are visible from the CBR original license area, NTEA, and TCEA (SC&A, 2011). None of these prominent features on the landscape is visible from the MEA because of the intervening elevation of the Pine Ridge.

An ethnographic field study in 2002 by LeBeau (2002) at the Agate Fossil Beds National Monument, some 25 miles (40 km) west of the MEA, indicates that there is a potential for Lakota places of religious or cultural significance to exist in this part of western Nebraska. While LeBeau’s investigation at Agate Fossil Beds was not a complete survey of the entire Monument acreage or a systematic analysis, it did point out some possibility for the existence of places of Lakota spiritual value, offering sites, and sites used for gathering of natural resources to be present in the vicinity of the MEA. This may be the case for non-Lakota Tribes as well.

The NRC mailed a letter to each of the consulting Tribes on October 31, 2012, offering access to all of the CBR project areas, including the CBR original license area, NTEA, TCEA, and MEA for the purpose of conducting field studies to identify potential places of religious or cultural importance (NRC, 2012b). Two of the consulting Tribes, the Crow and Santee Sioux Nations, conducted field investigations at the CBR original license area, the TCEA, and the MEA² in late November and early December 2012 (Santee Sioux Nation, 2013). Tribal field crews completed an intensive on-the-ground survey of the MEA project area, recording 12 potential places of religious or cultural significance. These results included seven possible camping areas, possible stone arrangement sites, a possible human burial place, a possible dance place, and a possible buffalo jump. Preliminary evaluation by the Crow Nation and Santee Sioux Nation indicated that none of these places was potentially eligible for listing on the NRHP. In the words of these Tribes, “The spiritual walk through for a federal undertaking for the NRC, authorized by the Cameco Resources, Inc., who gave the Tribal monitors an opportunity to be totally in charge of what needed to be done to ensure that cultural properties were discovered, were respectively acknowledged, and gave the two Tribes the necessary input and documentation needed to protect and mark buffer zones...” (Santee Sioux Nation, 2013).

The NRC sent a letter to all consulting Tribes on January 3, 2013, to update them on the ongoing consultation activities, including notification that the field studies had been completed (NRC, 2013a). On April 2, 2013, NRC sent an unredacted copy of the Tribal field survey report prepared by the Santee Sioux Nation to each of the consulting Tribes (NRC, 2013b). A redacted copy of the Tribal field survey report is available on the NRC Agencywide Documents Access and Management System (ADAMS) (ADAMS Accession No. ML13093A123).

In the summer of 2013, the NRC sent a cultural resource expert to revisit the 12 places of potential religious or cultural significance identified by the Crow Nation and Santee Sioux Nation field crews at the MEA to collect additional documentation (SC&A, 2013). The NRC prepared a field survey report documenting the results of this evaluation, which confirmed the Tribal determinations that none of the 12 places is potentially eligible for listing on the NRHP. An unredacted copy of this report was sent to the consulting Tribes on May 30, 2014 for their review and comment (NRC, 2014). A redacted copy of this report is available on ADAMS (ADAMS Accession No. ML14174B378).

² Access to the proposed NTEA was not possible at the time of the Tribal field survey because of site access issues.

4 ENVIRONMENTAL IMPACTS

The NRC staff reviewed the applicant's environmental report; collected information from federal, state, and local government agencies; and evaluated the environmental impacts to the various resources of the affected environment from the proposed action.

The NRC staff used the guidance outlined in NUREG-1748 (NRC, 2003) in its evaluation. In accordance with this guidance, the staff evaluated the direct effects and indirect effects that each resource area may encounter from the proposed action and the No-Action alternative. The NRC staff categorizes the impacts in terms of small, moderate, or large, defined as follows:

- **SMALL**—environmental effects are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource.
- **MODERATE**—environmental effects are sufficient to alter noticeably, but not to destabilize important attributes of the resource.
- **LARGE**—environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

4.8 Historic and Cultural Resources Impacts from the Proposed Action

4.8.1 Historic and Archaeological Resources

When the NRC first issued Source Materials License SUA-1534 in 1989, the license included an administrative condition calling for (1) additional cultural resources surveys should any previously unsurveyed land be used for future developmental activity, (2) cessation of work and immediate notification to the NRC should a discovery of previously unknown cultural artifacts take place during project disturbance activity, and (3) providing the NRC with documentation of the licensee's interaction with NSHS before any development activity takes place in the immediate vicinity of the six potentially eligible sites. Administrative Condition 9.9 in the current license includes these stipulations. If the license is amended to incorporate the proposed MEA, it would include this language.

The proposed MEA project area has been subjected to intensive cultural resources field surveys for archaeological and historical sites, resulting in the recording of 17 historic sites and six isolated finds (Graves et al., 2011, 2012). None of the historic sites is evaluated as being either eligible or potentially eligible for the NRHP, although one historic farmstead (25DW297) was recommended for further archival work should the site actually be disturbed by future mining development. This farm complex is currently occupied and would not be impacted by any project activities, although construction and operation of nearby wells would create a visual intrusion. The potential for a visual intrusion would be temporary, extending to the life of the operational phase, and the visual context would return to the original configuration following the decommissioning and land reclamation phases. If future project activities were to directly impact this property, additional research would be conducted to supplement the current cultural resource documentation and reach a final evaluation on NRHP eligibility. In 2011, the Nebraska SHPO concurred with the recommendations included in the archaeological and historical sites report (NSHS, 2011c).

CBR has practiced avoidance for all archaeological and historic sites within the original ISR license area (SC&A, 2012). This practice of avoiding potential impacts for all cultural resource sites during construction and operation phases would also be applied at the MEA and for the aquifer restoration and plant decommissioning phases of the project. Activities associated with restoration of the ground water in Mining Units would occur at existing wells within established wellfields, and there would be little or no potential for impacts to known cultural resource sites. While general earth-disturbing activities would be associated with decommissioning of the wellfields and other facilities, CBR would continue to avoid all known cultural resource sites during those activities (CBR, 2004).

In summary, the entire MEA has been surveyed for historic and archaeological resources, and none of the recorded resources is currently considered to be eligible for the NRHP. Regardless of their NRHP-eligibility status, CBR intends to avoid direct impacts to these sites during all project activities (CBR, 2014b). Therefore, the NRC staff concludes that impacts to known and recorded historic and archaeological resources located within the APE (i.e., within the boundaries of the MEA) would be SMALL.

4.8.2 Places of Religious or Cultural Significance

Two of the consulting Tribes surveyed the entire MEA for potential places of religious or cultural significance (Santee Sioux Nation, 2013), resulting in the identification of 12 possible places. These two Tribes completed a TCP survey, which indicated that none of the identified places are eligible for the NRHP; however, the report recommended that a buffer zone with a radius of either 100 or 200 feet should be observed during project construction and operation activities and that Tribal monitors should be used if there are future project impacts in the immediate vicinity of the identified places (Santee Sioux Nation, 2013). Following the Tribal field survey, the NRC acquired additional information about each of the places identified by the two Tribes through a field documentation effort. This additional field documentation and evaluation of these places confirmed that none of the places identified by the Tribes is considered to be eligible for listing on the NRHP (SC&A, 2013). The further documentation of the Tribal places was provided to the consulting Tribes for their review.

As with the historic and archaeological resources, CBR intends to avoid direct impacts to these places during all project activities (CBR, 2014b). Using available information, the staff concludes that the impacts of amending the CBR license to include development of the MEA on known places of Tribal religious and cultural significance would be SMALL.

Based on the findings that no historic properties exist at the MEA and that no places of potential Tribal religious or cultural significance will be impacted, the NRC staff concludes that the proposed MEA would not have adverse effects on significant historic and cultural resources.

4.13 Cumulative Impacts

CEQ regulations implementing NEPA define cumulative effects as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions” (40 CFR 1508.7). For the purposes of this analysis, past actions are those related to the resources at the time of the licensing and construction of the CBR facility under Source Materials License SUA-1534. Present actions are those related to the resources at the time of current operation of the CBR facility. Future actions are considered to be those that are reasonably foreseeable through the end of the proposed action.

CBR operates the original Crow Butte mining operation and the CPF; as uranium deposits in this area are depleted, CBR is seeking to expand its operations into several other areas. The NRC is currently reviewing CBR’s license renewal application for the original license area, as well as license amendment applications for the MEA and NTEA. In addition, CBR has indicated that it plans to submit an application for the TCEA in the near future. The original license area and the three proposed expansion areas are shown in Figure 1-1, reproduced below. CBR plans to continue mining operations in the current license area until the end of 2014. In the MEA application, CBR estimated that well construction at the MEA would begin in 2014, with commercial production starting in 2015 and ending in 2033. Aquifer restoration and reclamation at the MEA would begin in 2020, concurrent with operations, with final decommissioning activities and surface reclamation completed in 2040 (CBR 2014b). CBR plans to construct the NTEA project in 2023, with production from 2024 to 2032, and groundwater restoration activities from 2029 through 2039. Final site reclamation would be completed in 2041 (CBR, 2014b). TCEA construction is planned to be completed in 2016, with production from 2016 to 2032, restoration from 2023 to 2038, and final site reclamation completed in 2039 (CBR, 2014b).

No nuclear materials facilities other than the present CBR operation and CBR’s proposed MEA, NTEA, and TCEA are located in Nebraska (NRC, 2012a). Other facilities exist within the region but are all more than 50 miles (80 km) from these CBR projects. The new Dewey-Burdock facility near Edgemont, SD, in Custer and Fall River Counties, SD (more than 65 miles (105 km) north-northwest from Crawford, NE), is the nearest proposed ISR facility (NRC, 2013a).

The NRC staff contacted the Dawes County Department of Roads to obtain current information on proposed or planned local and regional projects or actions that could potentially add to the cumulative impacts in this area. In response, county staff stated that there are currently only minor road repair and maintenance projects ongoing in the county and that no major projects are planned for the foreseeable future (SC&A, 2013a). The NRC staff also reviewed Table 5.3-4 of NUREG-1910, “Generic Environmental Impact Statement for In-Situ Leach Uranium Milling Facilities (NRC, 2009) for current or future actions that might contribute to cumulative impacts for the MEA. The staff has determined that there are no current or reasonably foreseeable future actions of concern in Dawes and Sioux counties other than the current and proposed CBR ISR facilities that could contribute to cumulative impacts.

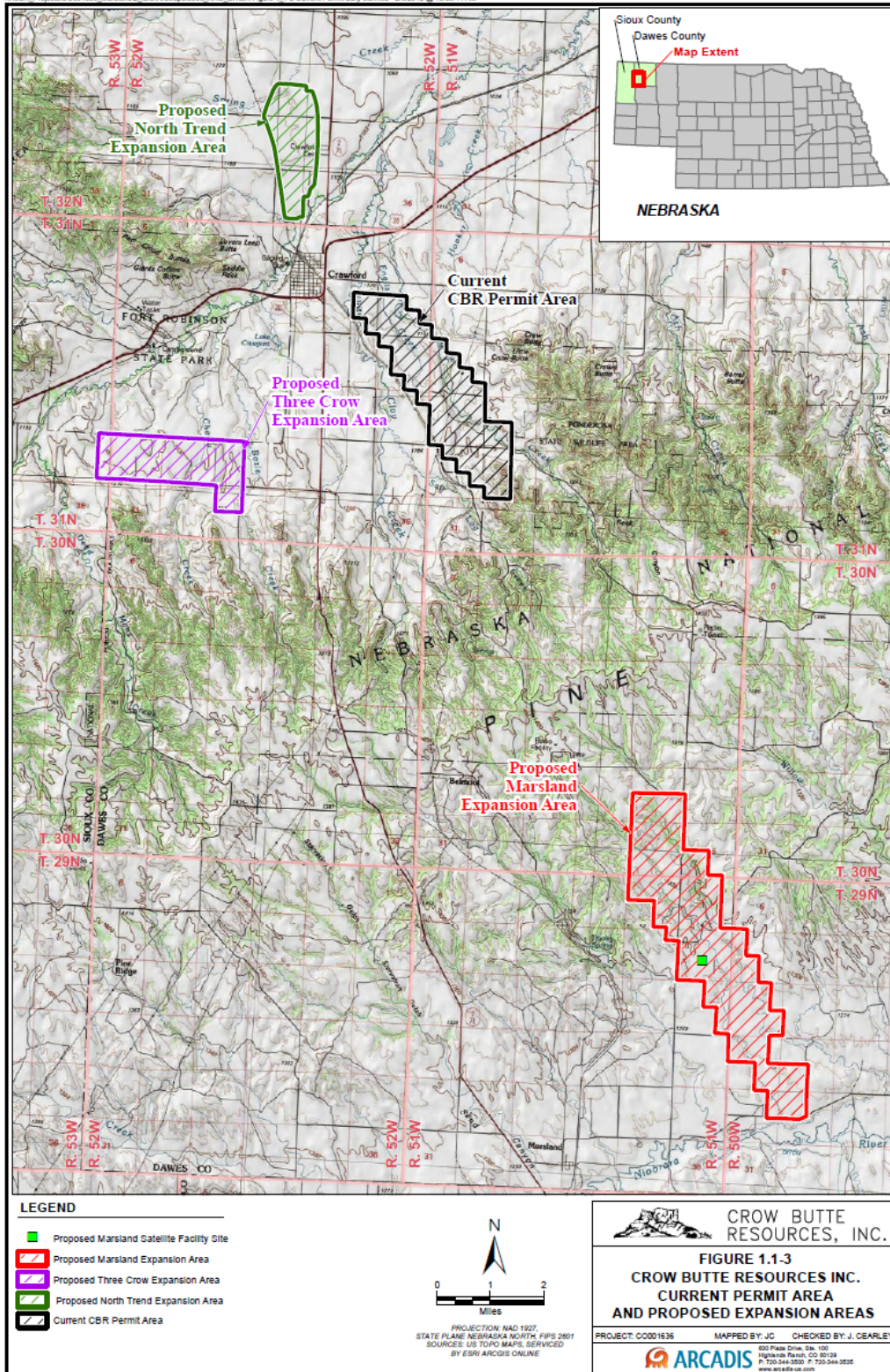


Figure 1-1. CBR current license area and proposed expansion areas (Source: CBR, 2012b, Figure 1.1-3)

4.13.2 Cumulative Impacts for Historic and Cultural Resources

4.13.2.1 *Historic and Archaeological Resources*

Cumulative impacts for historic and cultural resources result from environmental effects from the proposed action, and from similar effects from other nearby actions in the past, present, and foreseeable future. The region of influence for potential cultural resources cumulative impacts is the geographic area within which the proposed action may exert some influence. There are few public lands within a reasonable distance of the MEA where comparable historic and cultural resource data have been reported for use in evaluating potential cumulative impacts. Contacts with cultural resources specialists at the Fort Robinson Museum (Nebraska Game and Parks Commission—Fort Robinson State Park and Ponderosa Wildlife Management Area) and U.S. Department of Agriculture, U.S. Forest Service, and Nebraska National Forests and Grasslands (Pine Ridge Ranger District and Pine Ridge National Recreation Area) support this conclusion (SC&A, 2012).

The best data come from current and proposed CBR projects, namely the CBR original license area, the MEA (see Section 3.6.3), the NTEA, and TCEA. For the purpose of the present comparative analysis, archaeological and historic inventories for such resources have been completed for each of the proposed expansion areas.

Intensive (100-percent coverage) field surveys for historic and archaeological sites within the original CBR license area were conducted in two phases. The University of Nebraska conducted identification and assessment of cultural resources in the CBR research and development portion of the CBR license area in March and April 1982. NSHS surveyed the remainder of the CBR license area (the commercial study area) during April and May 1987. The results of the two surveys were presented in a single report (Bozell and Pepperl, 1987).

The 1982 and 1987 CBR original license area surveys recorded 21 prehistoric and historic period archaeological sites. Cultural affiliation of the recorded sites included eight with Native American components, 12 historic period locations, and a buried bone deposit of undetermined cultural association. Investigators from the University of Nebraska and NSHS found that 15 of the newly recorded sites, including four Native American and nine historic period locales, contained limited scientifically important cultural remains or were not determined to be of significant historic value based on archival research. These sites were evaluated as being not eligible for nomination and potential listing on the NRHP. Six sites, including three Native American and three historic period locales, were evaluated as being potentially eligible for the NRHP, requiring further field assessment for a full evaluation as being eligible. Four of these sites (25DW114, 25DW192, 25DW194, and 25DW198) were evaluated as having potential importance for the recovery of archaeological data, and sites 25DW112 and 25DW00-25 have possible architectural values. Additional evaluation of site 25DW198 in 2004 resulted in a determination that the site was not eligible for listing on the NRHP (Späth and Walth, 2003).

The proposed NTEA license area includes a total of 2,680 acres (10.8 km²), although only 1,190 acres (4.8 km²) are included in the potential development area over the life of the project. In 2004, ARCADIS conducted an intensive pedestrian cultural resources inventory of the 1,190-acre (4.8-km²) proposed development area (Späth, 2007a). The NTEA field inventory recorded three historical sites (25DW296–298) and three isolated artifacts (25DW299–301). The historic sites include an abandoned farm complex, an occupied farm complex with a nearby schoolhouse foundation, and a small historic refuse disposal area. The isolated artifacts include an early historic period metal trade point and two prehistoric period chert artifacts (a core and a

projectile point fragment). Based on the field survey findings, none of the resource sites was recommended as potentially eligible for listing on the NRHP, although one historic property, 45DW297, was recommend for further archival work should the site actually be disturbed by future mining development. The NE SHPO accepted the cultural resources report and concurred with the NRHP eligibility recommendations in 2006 (CBR, 2007a, Appendix C).

ARCADIS conducted a historic and cultural resources field inventory at the TCEA in January 2006 (Späth, 2007b). The TCEA historic and cultural resources inventory included 100-percent pedestrian coverage of a 2,100-acre (8.5-km²) tract, although only 1,643 acres (6.6 km²) of this total are included within the proposed TCEA license amendment boundary. The field inventory recorded 11 historic period sites, along with two isolated prehistoric period artifacts and one historic period artifact within the proposed TCEA project area. These 11 historic sites included three artifact scatters, two farm complexes, two rural residences, two collapsed buildings, a windmill and water tank, and an isolated piece of farm machinery. Isolated artifacts included an historic fraternal medallion and two prehistoric chert flakes. The sites and isolated artifacts were fully recorded and given designations 45DW302–315 in the Nebraska statewide inventory system. None of the recorded sites and isolated artifacts was associated with important historical events or persons or was likely to contribute useful information about historic lifeways, beyond the data collected during the field recording. Consequently, the applicant recommended that none of the recorded properties within the TCEA was potentially eligible for the NRHP. The NE SHPO concurred with this recommendation on December 17, 2007 (Späth, 2007b).

Table 4-4 summarizes the total number of acres that have been surveyed for historic and cultural resources in the four CBR project areas, along with the numbers of historic and prehistoric sites and isolated finds that have been recorded. In all, some 9,050 acres (14.14 square miles (mi²) or 36.6 square kilometers (km²)) have received intensive pedestrian cultural resources inventories.

This combined acreage amounts to approximately 58 percent of the total acreage included in the application for the original CBR license area and the total numbers of acres in the license amendment applications for the NTEA, TCEA, and MEA. Because of these surveys, a total of 64 cultural resource sites and isolated finds have been recorded, for an overall density of 4.53 resources per square mile. Considering only the recorded historic and archaeological sites, the overall density drops to 3.61 per square mile. Of the total 50 cultural resources sites recorded, 42 (84 percent) are associated with historic-period Euro-American rural settlement of the CBR project areas.

Of the total number of cultural resource sites recorded, five (10 percent) have been recommended as potentially eligible for listing on the NRHP. Isolated finds, by their designation, are not eligible for potential listing on the NRHP. All of the potentially eligible sites are located at the original license area. One historic site at the NTEA and two historic sites at the MEA were not recommended as potentially eligible for the NRHP based on the field inventories, but it was suggested that additional evaluation should be undertaken if the sites become directly impacted by future construction activities. As noted above, the CBR management approach to cultural resources involves avoidance of all sites during construction, operation, decommissioning, and reclamation activities, regardless of their evaluations for NRHP significance.

Based on available historic and cultural resources information from the CBR application for the original license area and the data related to the proposed license amendments for the NTEA,

TCEA, and MEA, the potential for adverse cumulative impacts on historic and cultural archaeological resources from the combined CBR projects is expected to be small due to the low density of sites found within this geographic setting and their lack of eligibility for nomination and potential listing on the NRHP. Therefore, the NRC staff concludes that the potential for adverse cumulative impacts for historic and cultural archaeological resources resulting from the MEA project will be SMALL.

4.13.2.2 Places of Religious or Cultural Significance

Previous Tribal contacts, literature reviews, and the ongoing consultation have yielded information on several potential places of religious and cultural significance located in proximity to both the original CBR license area and proposed expansion areas. Contacts with the nearby Fort Robinson State Park, State of Nebraska Ponderosa Wildlife Management Unit, and the Pine Ridge District of the Nebraska National Forest did not yield specific information for any nearby potential places of religious and cultural significance (SC&A, 2012). Two studies of places of religious and cultural significance have been completed for the Agate Fossil Beds National Monument (LeBeau, 2002; NPS, 2010a, c), situated about 25 miles (40 km) west of the MEA. At present, these studies are the closest such efforts to any of the CBR project areas. The studies found a potential for places of Native American religious and cultural significance to occur within the boundaries of the Agate Fossil Beds National Monument, especially some associated with the Post-Contact Native American Tribal era.

As discussed in Section 3.6.5.2, two of the consulting Tribes conducted field surveys of the proposed CBR expansion areas in November and December 2012 to locate potential places of Tribal religious or cultural significance (Santee Sioux Nation, 2013). Because of extensive past surface disturbance of the original license area, the Tribes determined that a field survey there was not necessary. Field study of the NTEA was not possible because of site access issues. At the proposed TCEA, the Tribes inspected relatively undisturbed portions of the project area, recording one potential place of religious or cultural significance. The Tribal field crews inspected the entire MEA, yielding 12 places of potential religious or cultural significance. They recommended that none of the recorded places was eligible for listing on the NRHP. This recommendation was confirmed by additional field documentation and evaluation of the 13 Tribal places in July 2013 (SC&A, 2013).

Should any such places be identified in the future, CBR would continue to exercise avoidance of such resources during project activities. Because the density of sites found is very low within this geographic setting, and these sites lack of eligibility for nomination and potential listing on the NRHP, the NRC staff concludes that the cumulative impacts on potential places of religious and cultural significance from the MEA project will be SMALL.

Table 4-4 Comparison of Historic and Cultural Resources Information for CBR Sites

Data Category	Original License Area	NTEA	TCEA	MEA	Totals
Total License Area (acres)	3,300	2,680	1,643	4,622	12,245
Cultural Resource Inventory (acres)	1,100 ^a (1.72 mi ²)	1,190 (1.86 mi ²)	2,100 (3.28 mi ²)	4,660 (7.28 mi ²)	9,050 (14.14 mi ²)
Number of Resource Sites and Isolated Finds Recorded	21 ^b	6	14	23	64
Historic Resource Sites	12	3	11	17	42
Prehistoric Resource Sites	8	0	0	0	8
Historic Isolated Finds	0	1	1	6	9
Prehistoric Isolated Finds	0	2	2	0	4
Site Density (per mi ²)	12.21	1.61	3.05	2.06	3.61
Isolated Find Density (per mi ² ,)	0	1.61	1.22	0.69	1.57
Total Cultural Resources Density (per mi ² .)	12.21	3.23	4.27	2.75	4.53

^a This acreage is estimated based on the surface area developed as stated in the CBR license renewal application (CBR, 2007b).

^b One of the recorded cultural sites at the original license area is of unknown age and cultural affiliation.

Sources: Bozell and Pepperl (1987); Späth (2007a); Späth (2007b); Graves et al. (2011); Graves et al. (2012).

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