


United States Nuclear Regulatory Commission Official Hearing Exhibit	
In the Matter of: POWERTECH USA, INC. (Dewey-Burdock In Situ Uranium Recovery Facility)	
	ASLBP #: 10-898-02-MLA-BD01
	Docket #: 04009075
	Exhibit #: NRC-025-B-00-BD01
	Admitted: 8/19/2014
	Rejected:
Other:	Identified: 8/19/2014 Withdrawn: Stricken:

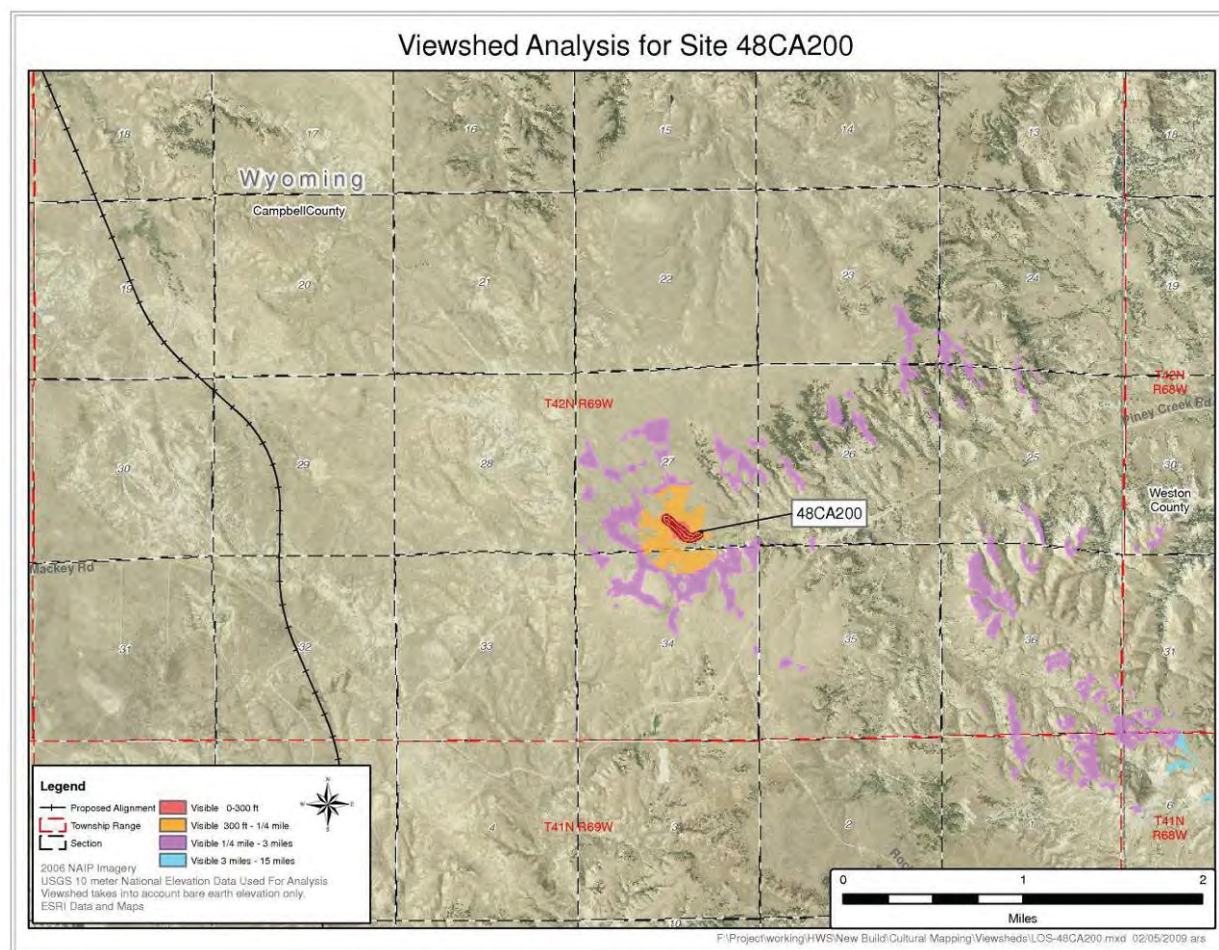


Figure 3-6. Viewshed Analysis of Site 48CA200.

3.1.7 SITE 48CA0272

SITE DESCRIPTION

Site 48CA0272, is named on the Wyoming Inventory Form as the “Sawyer Wagon Train Seige (sic) Site.” The site form was completed in July 30, 1983, by Skylar Scott. The form was completed based on information derived from “Wilhelm” who apparently described the events that occurred in 1865 somewhere in the vicinity. No field verification of the site has been conducted, and according to the form, the site “...has not been officially recorded or surveyed.”

PREVIOUS DISTURBANCE

Unknown.

NATIONAL REGISTER SIGNIFICANCE

Despite an absence of evidence that the site exists, the recorder recommended the site as eligible for the National Register at the state level.

INTEGRITY OF SETTING

Based on the site form, the PRB Expansion Project rail corridor may be situated within the foreground of the site's viewshed (**Figure 3-7**). Absent confirmation that the site exists, visual effects to the site cannot be assessed.

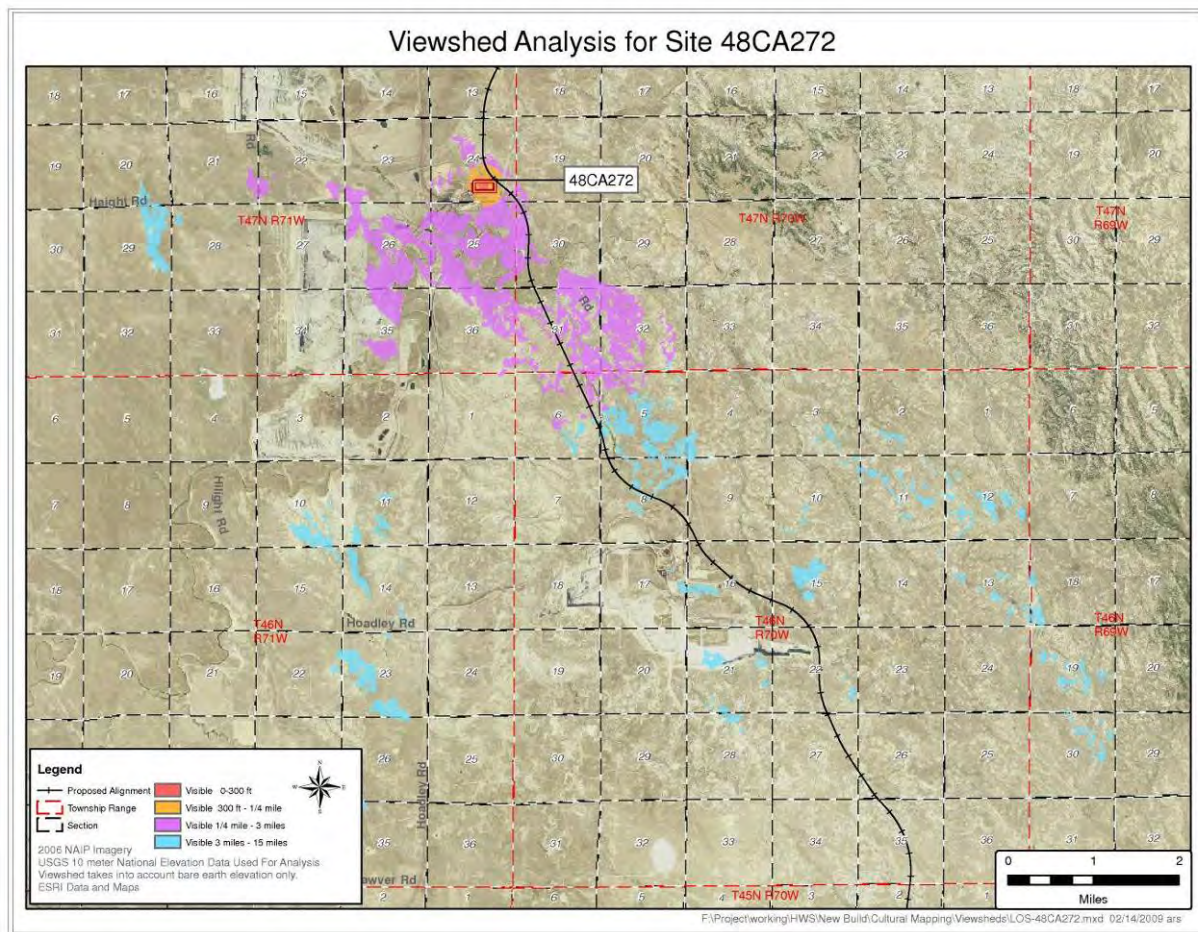


Figure 3-7. Viewshed Analysis of Site 48CA272

3.1.8 SITE 48CA0507

DESCRIPTION

Site 48CA0507 was recorded May 16, 17, and/or 19 (*all three dates are noted on the site form on different pages*), 1980, by Archeological Services during a 40-acre oil well-related survey. The site is described

as a sandstone bluff measuring about 12 feet high by 300 feet long with at least 32 historic inscriptions dating from 1905 to 1973 and concentrated on the southern end of the bluff.

PREVIOUS DISTURBANCE

The recorders indicate that an oil well center stake is located 350-400 feet southeast of the site. The sandstone matrix is described as friable and they note that several inscriptions are indecipherable due to wind erosion.

NATIONAL REGISTER SIGNIFICANCE

The site was recommended as eligible, possibly for its association with individuals of local significance. Although not clearly stated, such properties when determined eligible usually do so under Criterion B for their associations with individuals of historic note, or Criterion A for their associations with historic events. Occasionally, such sites may qualify under Criterion C for their artistic qualities, although this does not appear to be the case for this particular site. In any case, integrity of setting may be a qualifying characteristic.

INTEGRITY OF SETTING

Based on current information, it is not possible to determine whether or the extent to which oil drilling in the 1980's may have affected the integrity of setting of the site. Site maps show several roads and two-tracks within the vicinity of the site. The nearest distance from the site to where the proposed PRB Expansion Project rail corridor is visible is approximately 1 mile.

Historic age inscriptions on rocks do not necessarily constitute National Register eligibility. In this case, it does not appear that background research was conducted to confirm whether any of the inscriptions are associated with individuals of local historic merit. Nor does it appear that background research was conducted to determine whether the site is associated with important historic events. The determination that the property qualifies for the National Register may have been reached prematurely by today's documentation standards.

Nevertheless, the PRB Expansion Project rail corridor will likely be visible 1 mile south along a line of sight extending down a tributary valley to Little Thunder Creek, unless the viewshed is blocked by trees or other vegetation (**Figure 3-8**). Within this LOS are a couple of roads and probably the well pad that prompted the original recordation of the site. It is anticipated that the PRB Expansion Project rail corridor may affect the integrity of the setting assuming that is a contributing element of the property. However, under these circumstances, the impact appears to be not adverse.

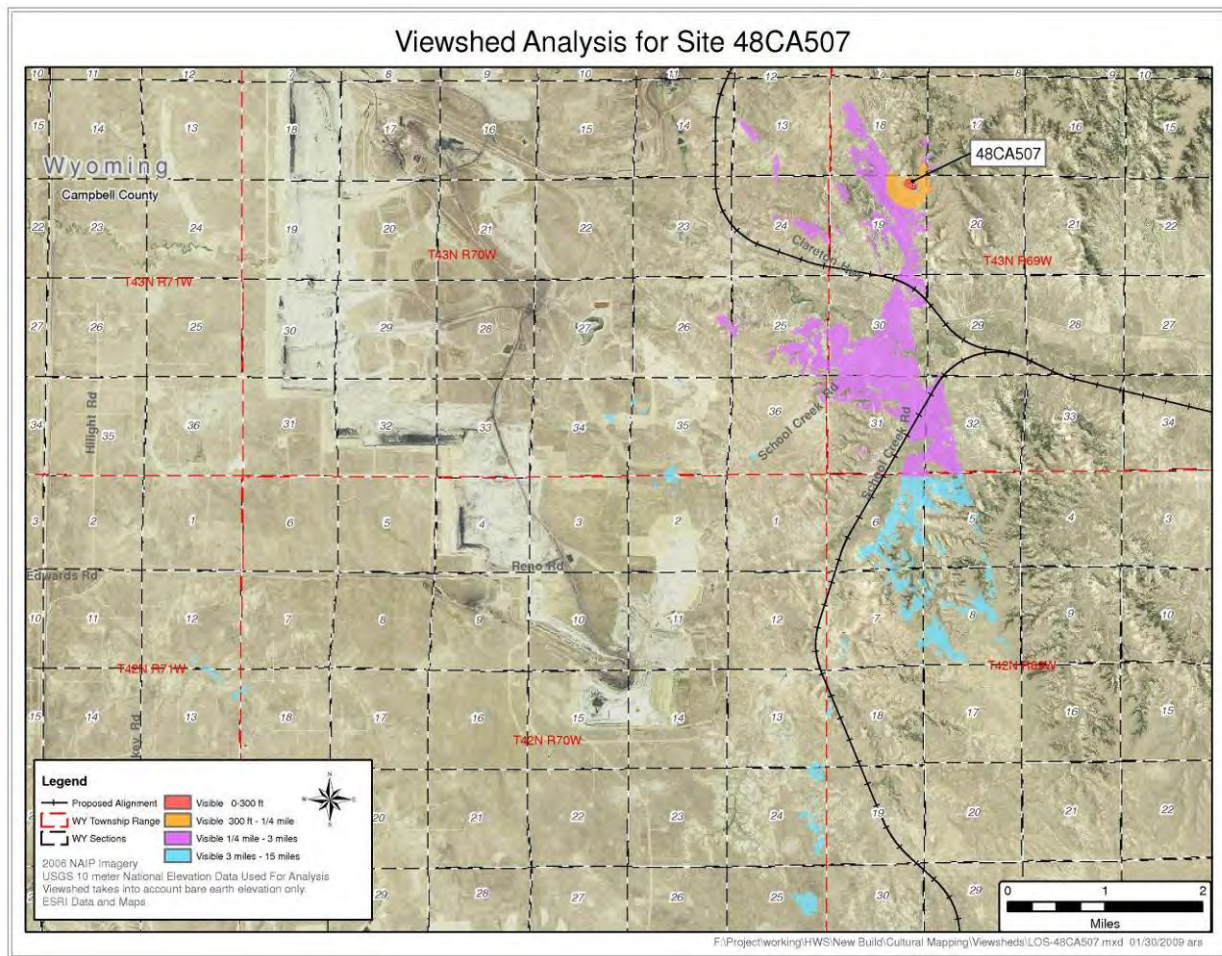


Figure 3-8. Viewshed Analysis for Site 48CA507.

3.1.9 SITE 48CA0890

SITE DESCRIPTION

Site 48CA0890 was recorded by “Girouard” on April 21, 1981. The site consists of a single stone circle approximately 12 feet in diameter on the southern edge of a hilltop. No artifacts were observed and no subsurface archaeological tests were conducted.

PREVIOUS DISTURBANCE

The site was recorded as in “Good” condition.

NATIONAL REGISTER SIGNIFICANCE

The site was recommended as eligible for the National Register, but no specific criteria were mentioned. Presumably, it was considered eligible for its information potential under Criterion D, given the recommendation that the site be tested if threatened by a future project.

INTEGRITY OF SETTING

The proposed PRB Expansion Project rail corridor is visible approximately 1 mile west of the site (**Figure 3-9**). If integrity of setting contributes to the historic value of the site, this value will not be adversely affected by the visual intrusion of the PRB Expansion Project.

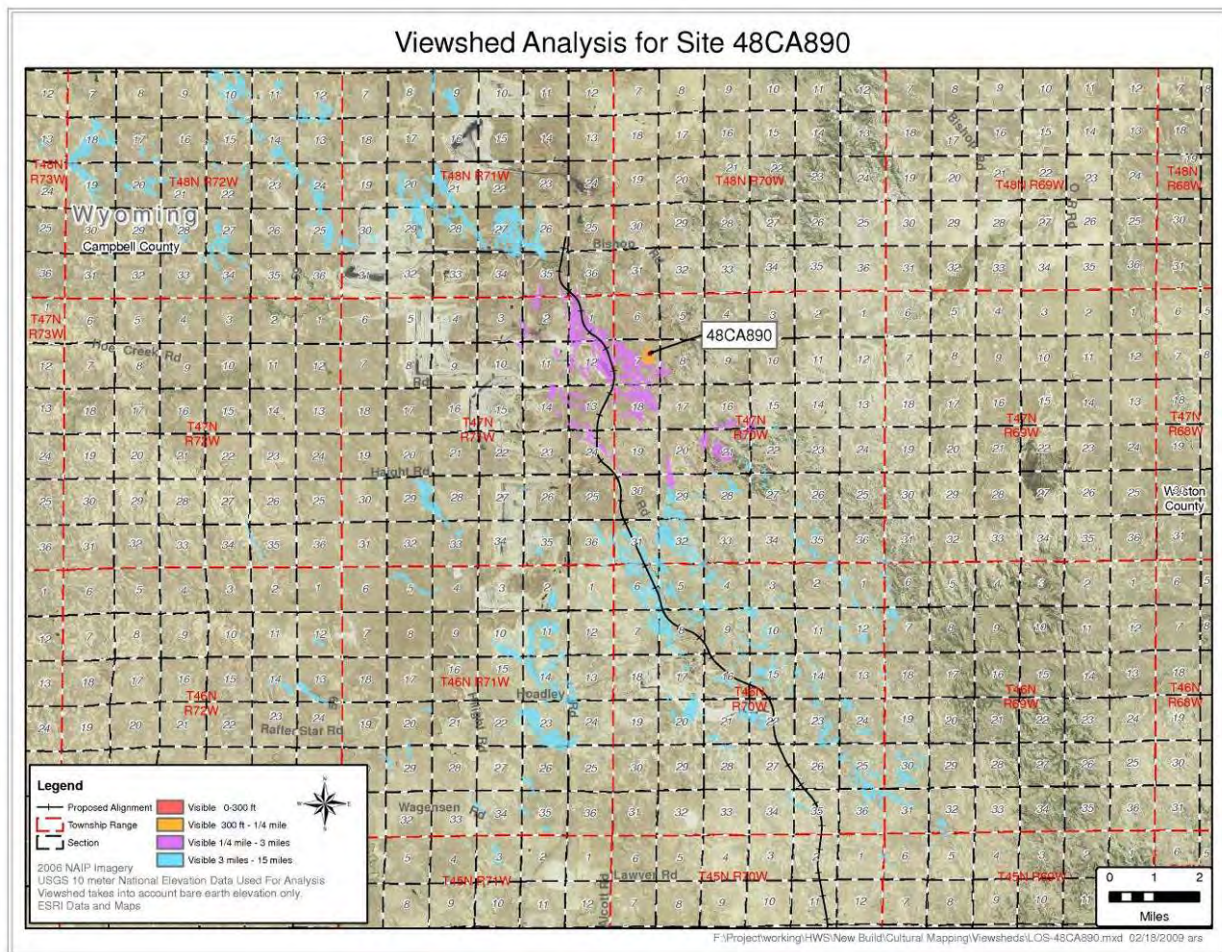


Figure 3-9. Viewshed Analysis of Site 48CA0890.

3.1.10 SITE 48CA1307

DESCRIPTION

Site 48CA1307 was recorded in August 29, 1981, by High Plains Consultants during a survey for a seismic line. The site is described as a group of four stone circles, two rock clusters and associated lithic debitage on the edge of a high terrace. The recorders indicate that there are no buried cultural deposits at the site, and no temporally diagnostic artifacts or features were observed.

PREVIOUS DISTURBANCE

No previous disturbance is mentioned by the recorders, but some artifacts are mapped within the seismic line corridor and may have been disturbed by that activity. Integrity is described as “Good.”

NATIONAL REGISTER SIGNIFICANCE

The site is recommended as eligible for the National Register, but no specific criterion is mentioned. Presumably, the recorders felt the site qualified under Criterion D, and recommended that future activities should entail mapping and controlled surface collection. The site form provides no indication of consultation with tribes to assess traditional religious and cultural importance.

INTEGRITY OF SETTING

The nearest distance from the site to the proposed PRB Expansion Project rail corridor is approximately 1 mile (**Figure 3-10**). The nearest point at which the proposed PRB Project rail corridor can be seen from the site is more than 2 miles distance.

Regardless of the traditional religious and cultural importance the property may retain, the more than two miles distance from the site to the nearest visual intrusion of the proposed rail corridor will not constitute a diminishment of its integrity of setting. No effect will occur.

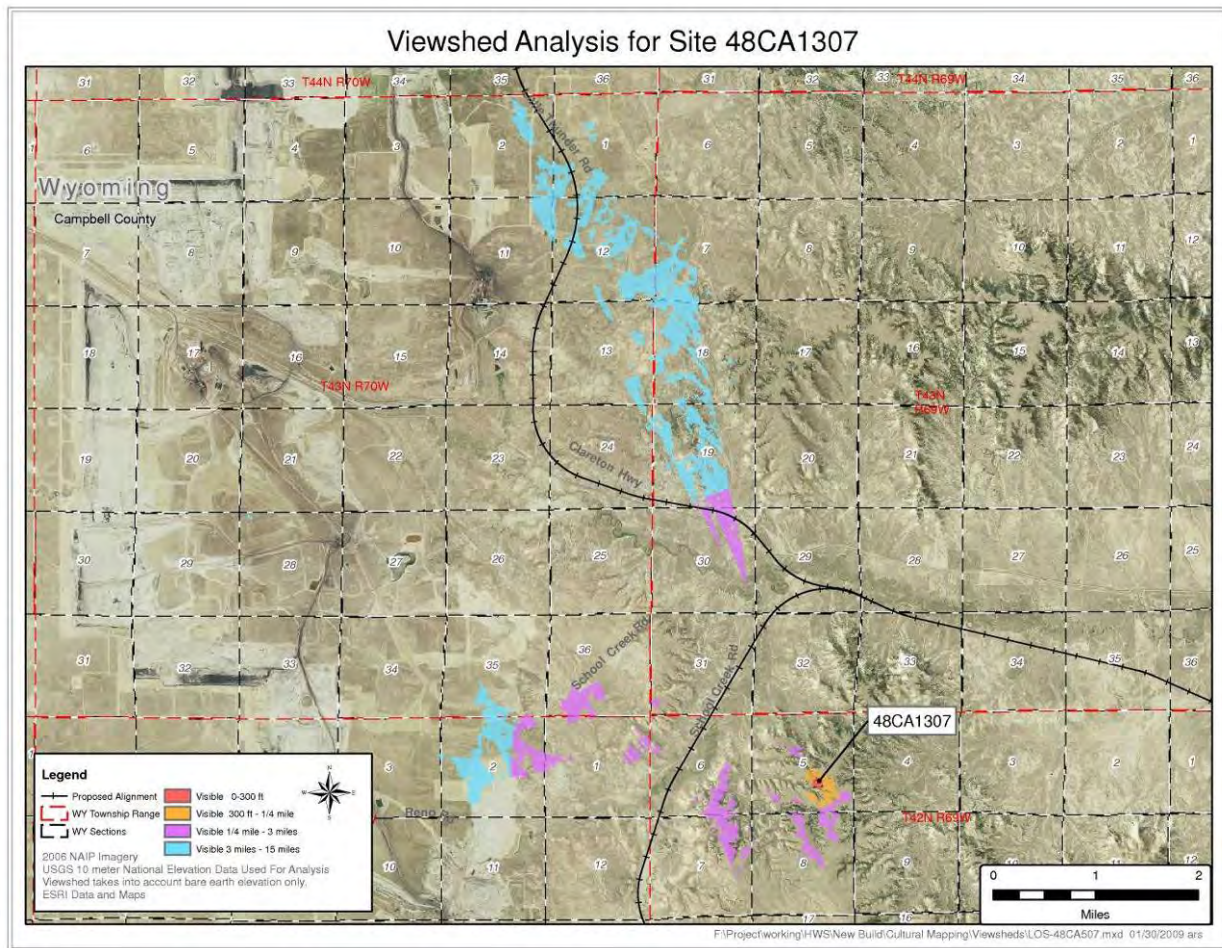


Figure 3-10. Viewshed Analysis for Site 48CA1307.

3.1.11 SITE 48CA1414

DESCRIPTION

Site 48CA1414 was originally recorded October 28, 1981 and November 7, 1981 by “Greer/Thompson,” and re-recorded on October 6, 1991 by “B. Aivazian.” It is unclear what activity prompted these recording efforts, but the latter event may have involved construction of an access road through the western portion of the site. The site is described as three distinct areas of stone circles and a 600m long stone alignment extending east to west through the site whose dimensions are estimated as 60m by 600m. In total, 20 stone circles have been recorded within the site area overlooking Dugout Draw. The recorders described the site as situated on a residual surface with shallow, silty soils and exposed scoria cobbles. Cultural remains are confined to the surface and no temporally diagnostic artifacts or features were observed. No artifact descriptions

are provided on the site form, and no mention is made of any temporally diagnostic artifacts or concentrations of artifacts.

PREVIOUS DISTURBANCE

At least three roads and two-tracks are noted as sources of prior disturbance, and a map provided with the site form points to a “well centerstake” 528 feet from datum. The site is described as being in “Good” condition.

NATIONAL REGISTER SIGNIFICANCE

The site is recommended as eligible for the National Register under Criterion D for the information that it might provide. No mention is made of consultation with tribes to assess traditional values.

INTEGRITY OF SETTING

The nearest distance from the site to the proposed PRB Expansion Project rail corridor is more than one mile (**Figure 3-11**). This is also the distance at which the rail corridor may be seen from the site.

Regardless of its traditional religious and cultural importance, the existing visual intrusions from multiple roads and possibly an oil well within 200m of the site would constitute a compromised setting. The presence of the rail corridor more than 1 mile distant would not further diminish the setting of the property assuming this quality contributes to its significance. No effect will occur.

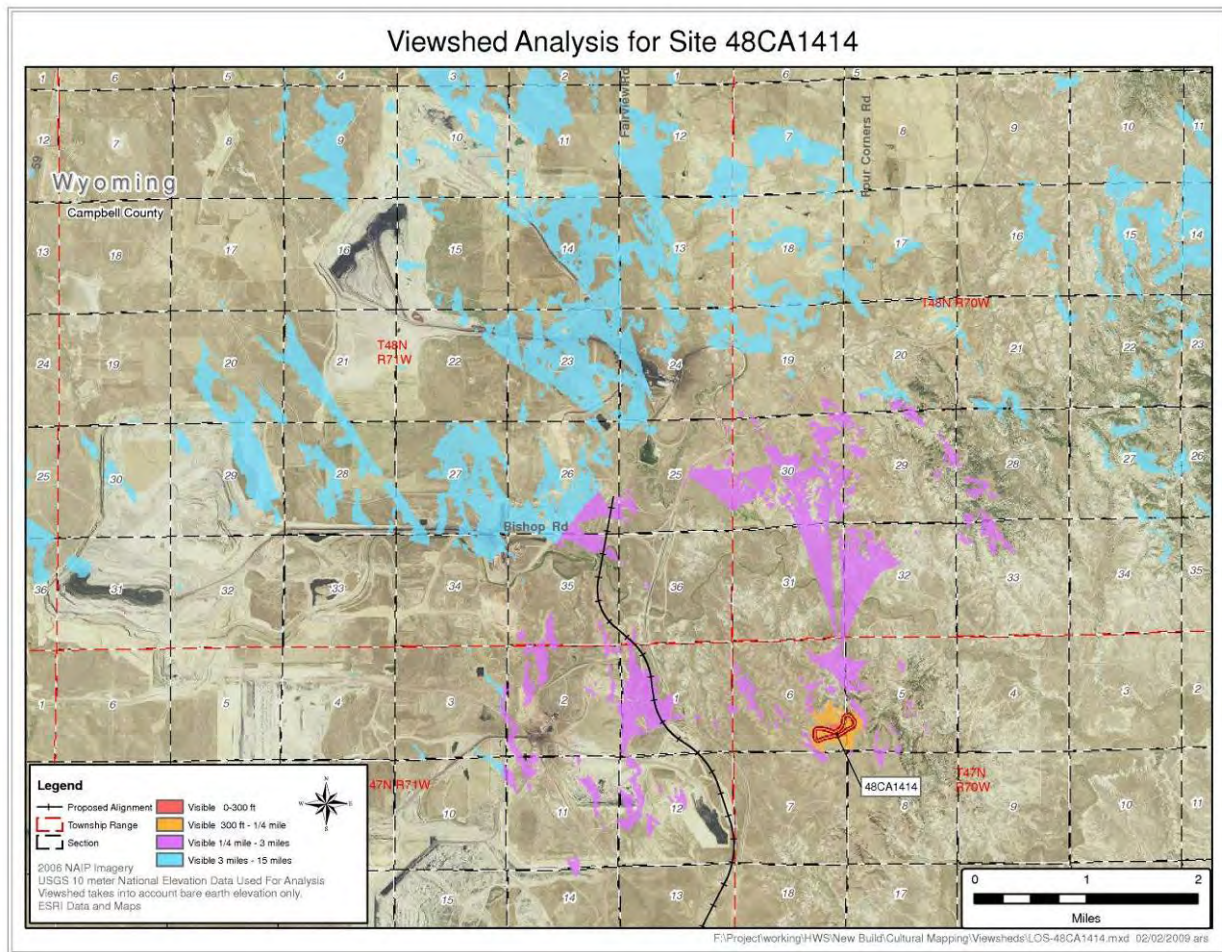


Figure 3-11. Viewshed Analysis for Site 48CA1414.

3.1.12 SITE 48CA1415

DESCRIPTION

Site 48CA1415 was recorded in October 28, 1981 and November 7, 1981 by “Greer/Thompson” as part of the survey for a well pad construction project. The site is described as two tipi rings and a rock alignment incorporating natural scoria outcroppings. The site extends across a “...grassy saddle on a hilltop forming a rim area overlooking flats to the SW and west.” No artifacts or other cultural features were observed.

PREVIOUS DISTURBANCE

The recorders mention that ring rocks have been displaced, and rodent borrowing has caused considerable disturbance. A “staked well pad construction area” is noted as located 240 feet north of the site.

NATIONAL REGISTER SIGNIFICANCE

The site was recommended as eligible for the National Register under Criterion D based on the “slight possibility” that further investigations might help determine age, cultural affiliation, and function. No mention is made of consultation with tribes to assess traditional cultural importance.

INTEGRITY OF SETTING

The nearest distance from which the PRB Expansion Project rail corridor would be visible from the site is approximately 1 mile (**Figure 3-12**). The presence of an oil well pad 240 feet north of the site suggests that any integrity of setting the site may retain as a contributing quality has been compromised. Construction and operation of the rail corridor 1 mile west of the site will not diminish the setting of the property, assuming this quality contributes to its significance. No effect will occur.

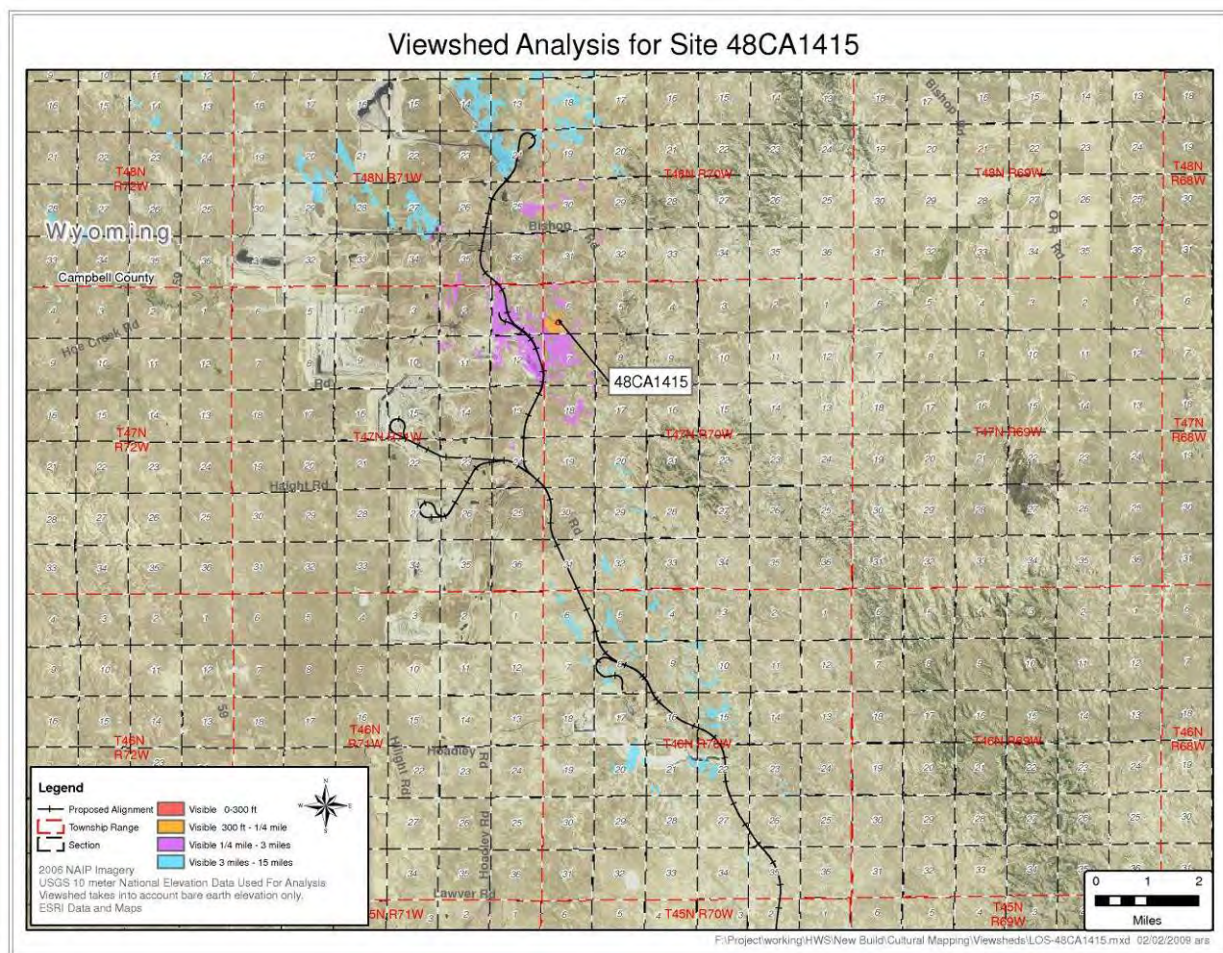


Figure 3-12. Viewshed Analysis for Site 48CA1415.

3.1.13 SITE 48CA1497

DESCRIPTION

Site 48CA1497 was recorded November 10, 1981 by J. Greer as part of an archaeological survey for oil well access. The site is described as "...probably at least 11 tipi rings..." on a scoria ridgetop flat. Three stone flakes were observed in the site area.

PREVIOUS DISTURBANCE

The recorder noted that there is little chance for buried cultural deposits at the site and that "...disturbance is extreme due to the area having been used as a sheep bedding ground in the past." Integrity is characterized as generally fair to poor overall, and fair to good for some individual rings. An oil well access road is shown on the site sketch map to be within 100 feet of several rings.

NATIONAL REGISTER SIGNIFICANCE

The site was recommended as eligible based on "limited" research potential under Criterion D. The recorder suggested that stripping selected rings for information on age and function would be appropriate.

INTEGRITY OF SETTING

Integrity of setting was not identified as a contributing quality to the significance of the archaeological site, and no indication is provided that tribes were consulted on this matter. The recorder mentions that the site overlooks the view to the north, west and south.

Viewshed analysis indicates that the proposed PRB Expansion Project rail corridor is visible approximately 1 mile west of the site (**Figure 3-13**). Given the disturbed nature of the site and the presence of an oil well access road, the immediate setting has been compromised. The visual intrusion of the PRB Expansion Project rail corridor 1 mile away from the site may affect the setting, but will not constitute an adverse effect to its integrity of setting, given these existing intrusions.

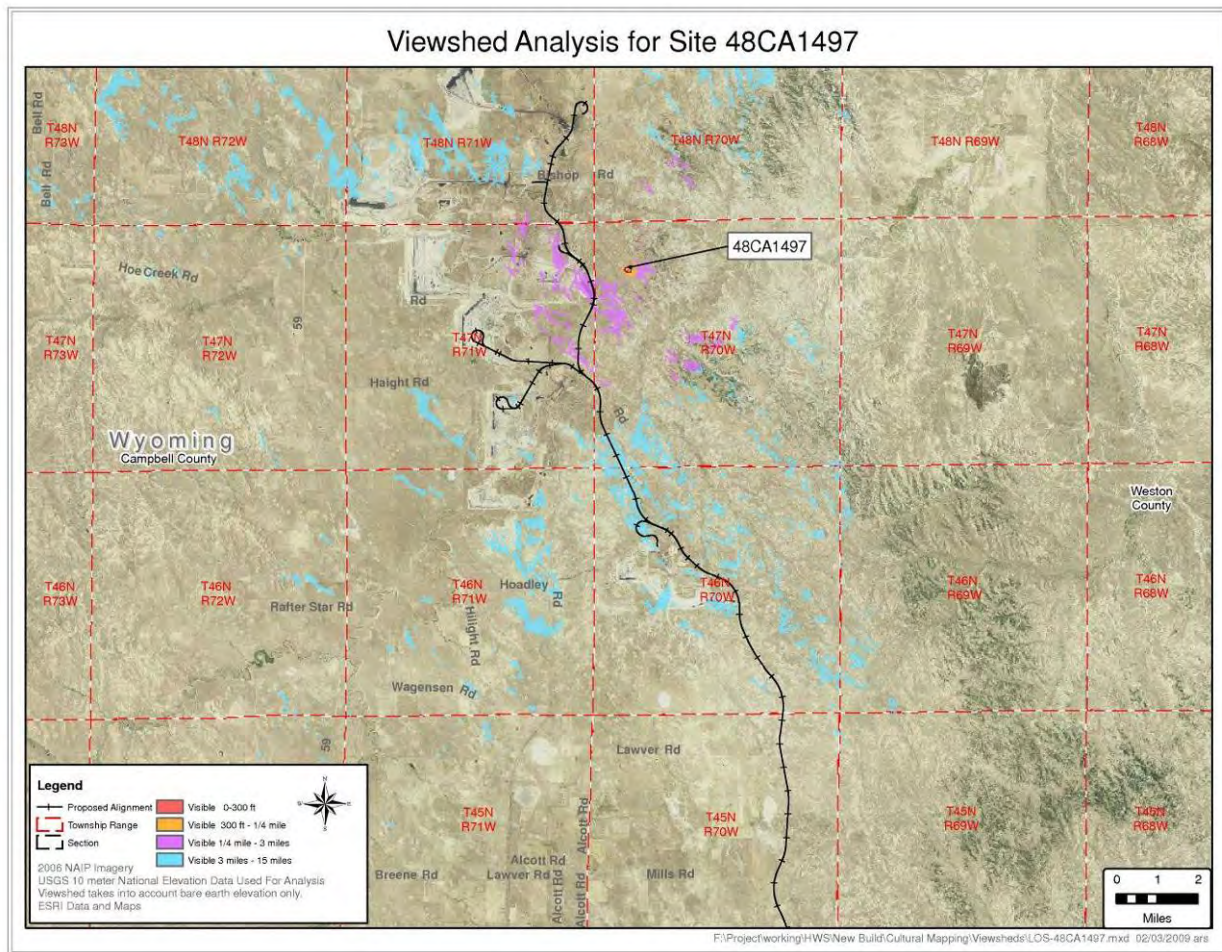


Figure 3-13. Viewshed Analysis for Site 48CA1497.

3.1.14 SITE 48CA1667

DESCRIPTION

Site 48CA1667 is a Late Prehistoric habitation site recorded by Eckerle and Guenther, Wyoming Office of the State Archaeologist in May and June of 1982, during the ETSI Pipeline Coal Slurry Project. The site consisted of seven stone circles, a cairn and possible hearth, as well as various artifacts including lithic flakes.

PREVIOUS DISTURBANCE

The site was impacted by the construction of the pipeline project.

NATIONAL REGISTER SIGNIFICANCE

The recorders recommended the site as eligible under Criterion D, with integrity of location, setting and association.

INTEGRITY OF SETTING

The recorders recognized that the site retained integrity of setting.

The site is situated 3 miles from the proposed PRB Expansion Project rail corridor (**Figure 3-14**). The rail corridor is not within the viewshed of the site and will not be visible from any vantage point. Regardless of whether the site may qualify for the National Register under Criterion A, since the proposed PRB Expansion Project rail corridor is not visible from the site, there will be no effect.

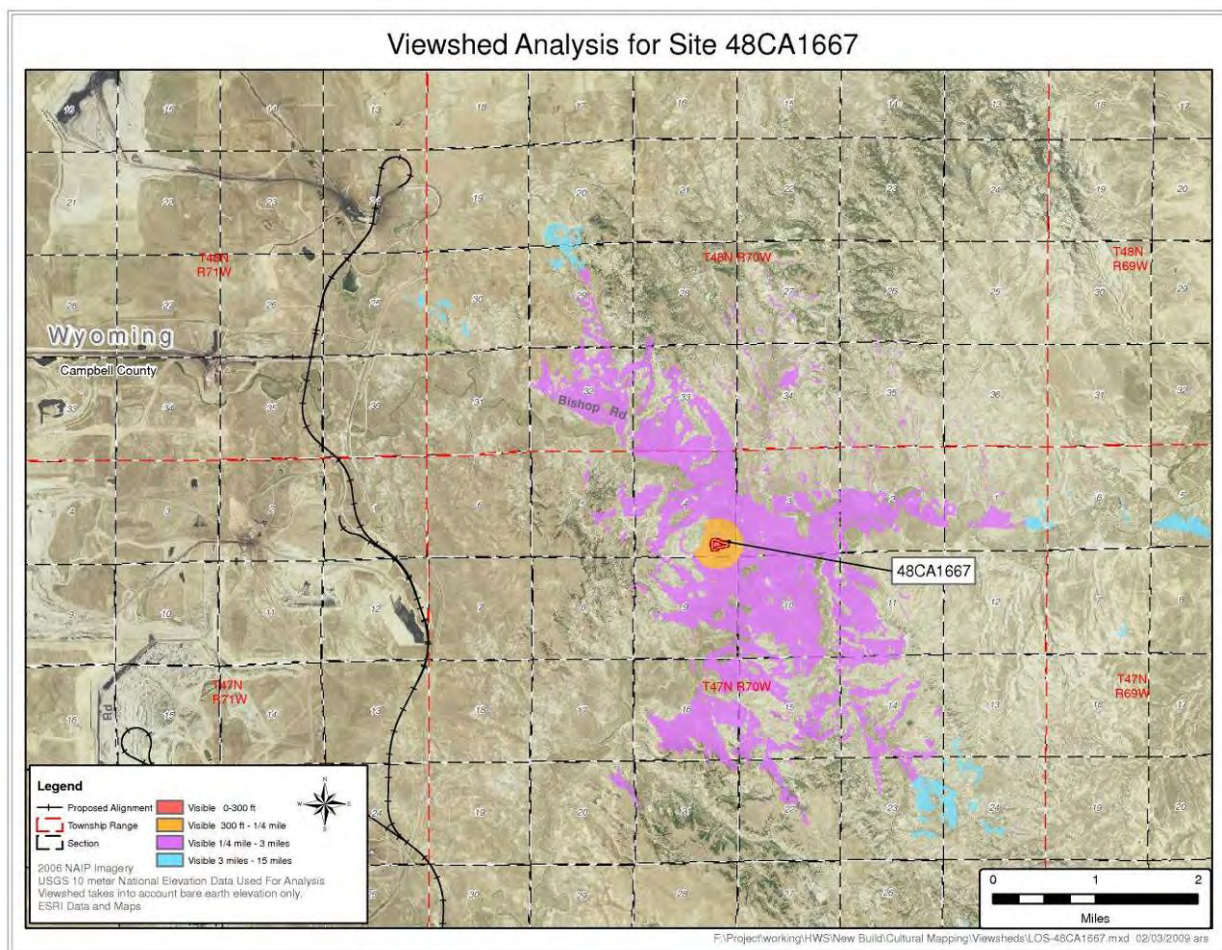


Figure 3-14. Viewshed Analysis of Site 48CA1667.

3.1.15 SITE 48CA1686

DESCRIPTION

Site 48CA1686 was originally recorded on June 17, 1982 by C. Wood and M. Harnett of WCRM. It was re-recorded on April 30, 1997 by Gene Munson of GCM Services. On both occasions, recordation occurred in response to proposed oil well development in the vicinity. The site is described at the Crouch Homestead which in 1997 consisted of an area 165m by 110m within which were recorded six archaeological features: a depression, a sandstone wall, a sandstone foundation, a dump, a breached dam, and a cairn. Other historic materials characteristic of 1930's homesteads were observed. No standing structures remain at the site.

PREVIOUS DISTURBANCE

The site condition is described as "Poor" due to the demolition and removal of structures. Five test units were excavated at the site in 1997 and all but one produced negative results. The positive test produced stove parts.

NATIONAL REGISTER SIGNIFICANCE

The site was considered not eligible by the original recorders in 1982. However, this finding was reconsidered in 1997 and the recorders advised that the site be considered eligible for listing under Criterion D. Although regarded as in poor condition, the recorders suggested that important information might be derived from an analysis of artifacts from the site that would inform about the material culture of homesteaders of non-Euro-American ancestry. A local informant indicated that John Crouch may have been of mixed ethnicity, including African American, Native American and European American.

INTEGRITY OF SETTING

The integrity of setting was never considered to be a contributing quality of this site. None of the features or remains identified at the site indicates that the site may retain any traditional cultural values to tribes.

A short segment of a few hundred meters of the proposed rail corridor may be visible from the site looking northwest at approximately 1 mile distance (**Figure 3-15**). Since integrity of setting is not a contributing characteristic of the site, and since the site is situated outside the rail corridor, the PRB Expansion Project will have no effect on this historic property.

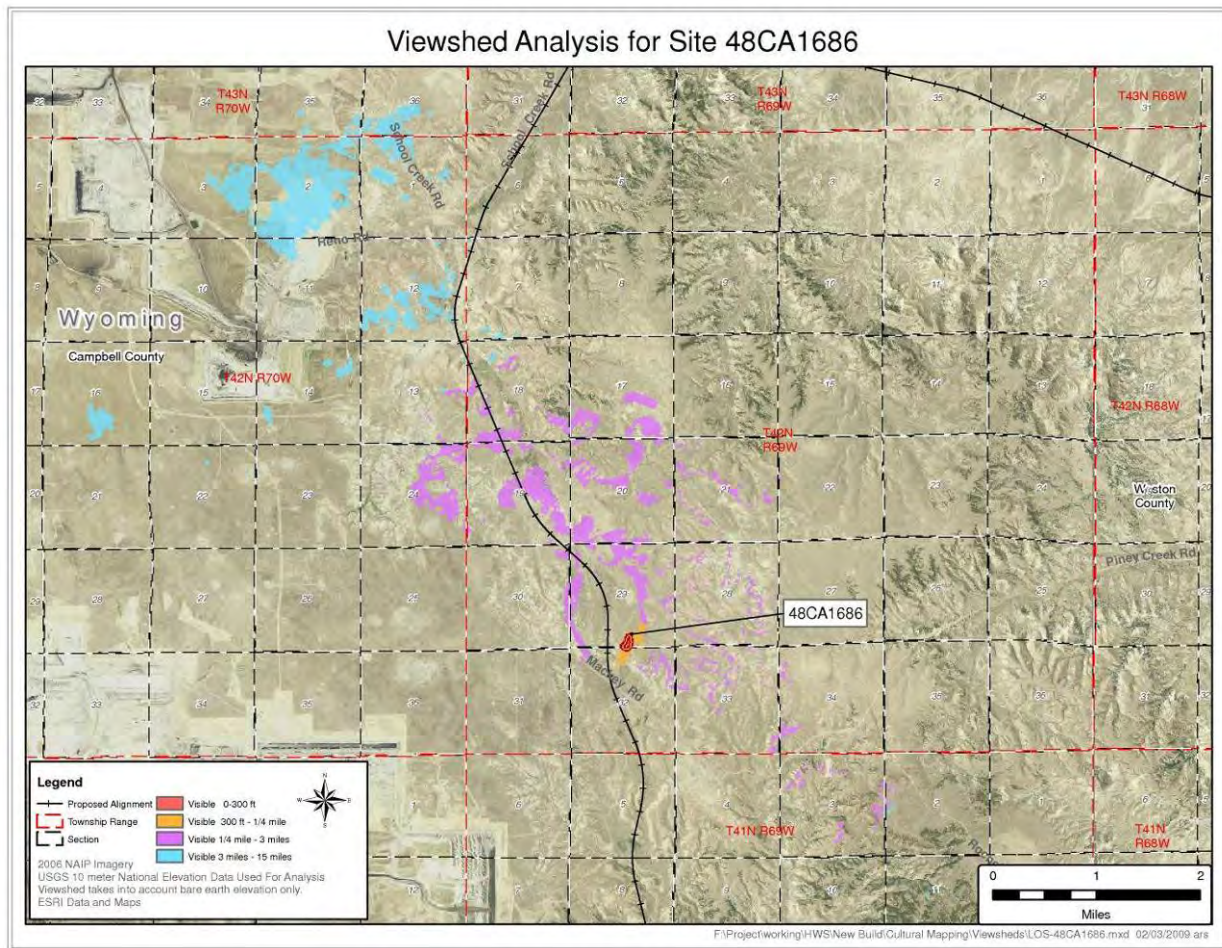


Figure 3-15. Viewshed Analysis of Site 48CA1686.

3.1.16 SITE 48CA1707

SITE DESCRIPTION

Site 48CA1707 was recorded on July 30, 1982 by the Office of the Wyoming State Archaeologist as part of the ETSI Coal Slurry Pipeline Project. The site was recorded as consisting of 37 stone circles, three cairns and associated sparsely scattered lithic artifacts situated on a ridge and connecting spurs on the east side of School Creek. The site is described as being 750m by 750m, but the site map shows it to have a substantially greater N-S than E-W extent. Apparently, no subsurface testing was conducted at the site. A possible Middle Plains Archaic projectile point was collected from the site.

PREVIOUS DISTURBANCE

Site integrity is rated as “Fair”, and the recorders noted “erosion – moderate – slopewash” on the form. Two-track roads are noted as extending into the site from two different directions. The recorders also noted that the ETSI Pipeline Coal Slurry Project would destroy approximately 3,000 square-meters (m²) of the site where it extended along the site’s western boundary.

NATIONAL REGISTER SIGNIFICANCE

The site is recommended as eligible for the National Register on the regional level, presumably under Criterion D. The 1982 site summary includes a data recovery research design intended to address the adverse effects of the ETSI Pipeline Coal Slurry Project.

INTEGRITY OF SETTING

The proposed PRB Expansion Project rail corridor is visible from the site within the middle ground of its viewshed (**Figure 3-16**). The PRB Expansion Project rail corridor approaches the site to within approximately a 1/2-mile distance. If the site possesses integrity of setting as a qualifying characteristic, the presence of the ETSI Pipeline Coal Slurry Project on its western boundary has compromised this quality and may have destroyed it entirely. In any case, the PRB Expansion Project will not adversely affect the site’s integrity of setting.

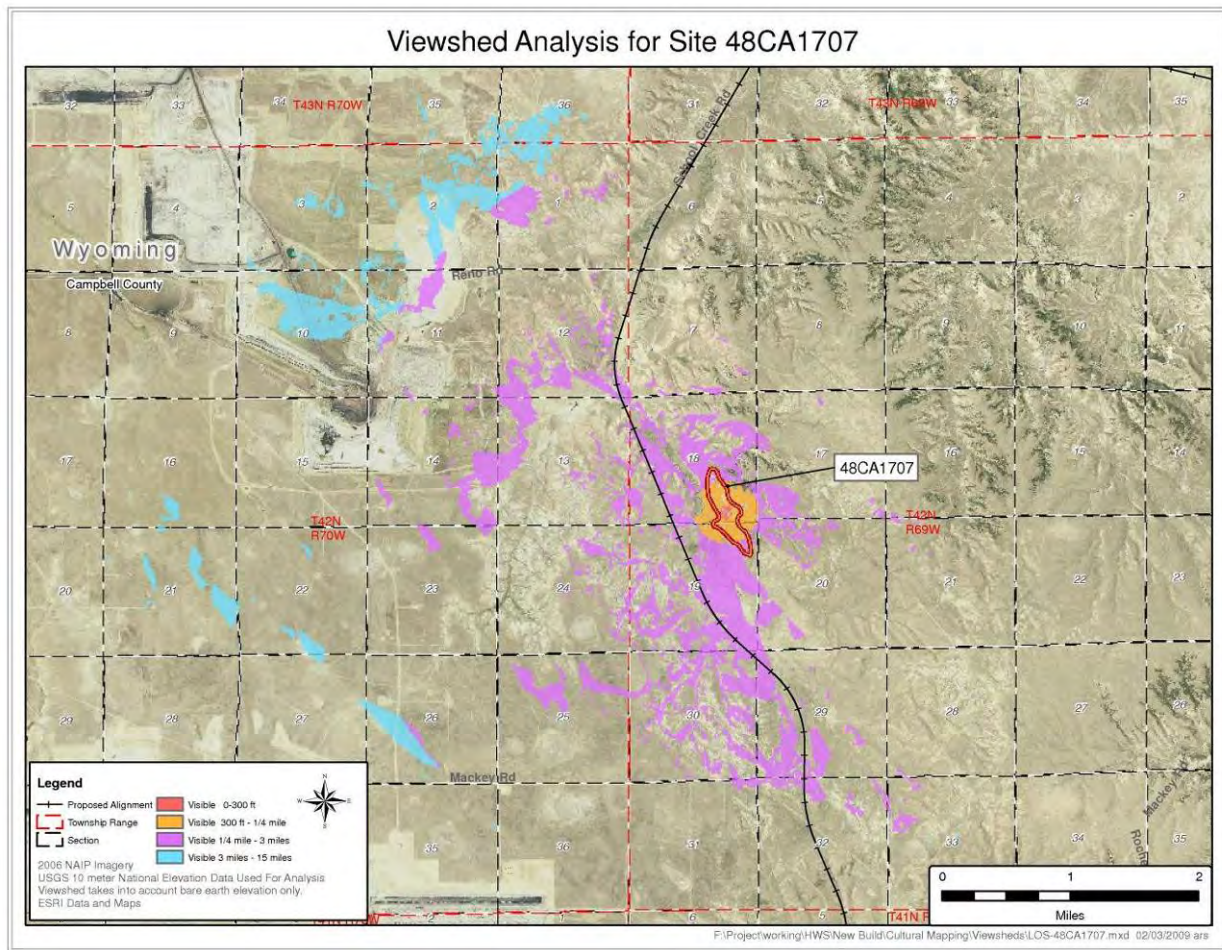


Figure 3-16. Viewshed Analysis of Site 48CA1707.

3.1.17 SITE 48CA1711

SITE DESCRIPTION

Site 48CA1711 was recorded on Forest Service administered land by the Office of the Wyoming State Archaeologist on August 5, 1982 as part of the ETSI Pipeline Coal Slurry Project. The site is a prehistoric occupation at the confluence of North Prong Creek and Burning Coal Draw on a low northwest by southeast trending ridge. The site is estimated to be about 470m by 160m in extent and is comprised of 14 stone circles and 12 observed lithic artifacts. Subsurface tests at six of the stone circles produced one stone flake. Depth of test units did not extend beyond 10cm.

PREVIOUS DISTURBANCE

Site integrity is rated as “Good.” Some aeolian erosion is noted, and the recorder notes that the site exhibits good potential to yield subsurface materials.

NATIONAL REGISTER SIGNIFICANCE

The site is recommended as eligible on the regional level, presumably under Criterion D.

INTEGRITY OF SETTING

The sketch map of the site shows Highway 450 extending northwest and southeast along the southern most portion of the site (**Figure 3-17**). In addition, visual intrusions from coal mining are evident in the middle ground of the site's viewshed. The PRB Expansion Project rail corridor is to be situated within a few hundred meters of the site on the opposite side of the highway. This visual intrusion is within the foreground of the site. However, the site has lost any integrity of setting it may once have possessed due to the presence of these previous sources of disturbance. Consequently, the PRB Expansion Project will have no effect on the qualities that may make the property eligible.

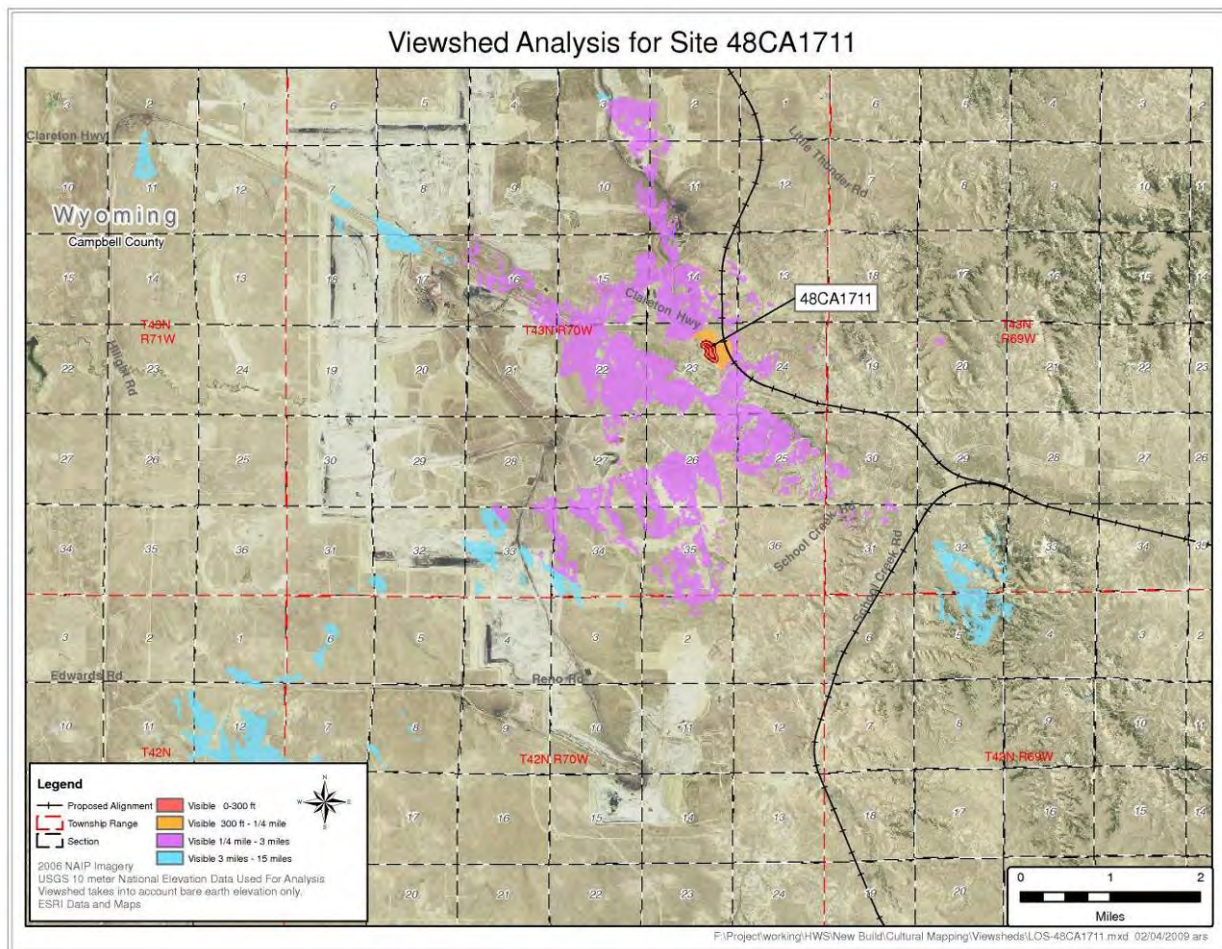


Figure 3-17. Viewshed Analysis of Site 48CA1711.

3.1.18 SITE 48CA1728

SITE DESCRIPTION

Site 48CA1728 was recorded by George Zeimens in 1974, then by Metcalf-Zier in 1980, and High Plains Consultants in 1982. Descriptions of the site vary among these recorders, but the 1982 survey form appears most reliable. According to the recorders, this is a prehistoric stone feature site on Forest Service administered lands, and extends 747m by 473m on the first and second terraces of Little Thunder Creek. Numerous types of artifacts were associated with the 30 stone circles recorded within the site, and the recorders assessed its functions as “large habitation, butchering & processing, chipping/knapping station, possible vegetable processing.” Vertical testing was conducted at 12 circles, with no cultural deposition observed, however, additional testing was considered warranted. Observed artifacts indicate a late prehistoric/early historic occupation, possibly mixed with earlier components.

PREVIOUS DISTURBANCE

The site’s integrity was recorded as “Fair”, and erosion, vehicular traffic, and possible amateur collection were listed as prior disturbances. A two-track road extends along the southern edge of the site, and a pipeline is noted 600 feet to the southwest. Mining disturbance is evident in the viewshed to the west and southwest within a half mile of the site.

NATIONAL REGISTER SIGNIFANCE

The site was recommended as eligible for the National Register on the regional level presumably for its significance under Criterion D.

INTEGRITY OF SETTING

If the integrity of setting is a contributing characteristic of the site, the nearest visible vantage point to the PRB Expansion Project rail corridor is in the middle ground, approximately a ½ mile or more away from the site to the northeast (**Figure 3-18**). If the setting contributes to the site’s eligibility, the effect of the PRB Expansion Project will not be adverse.

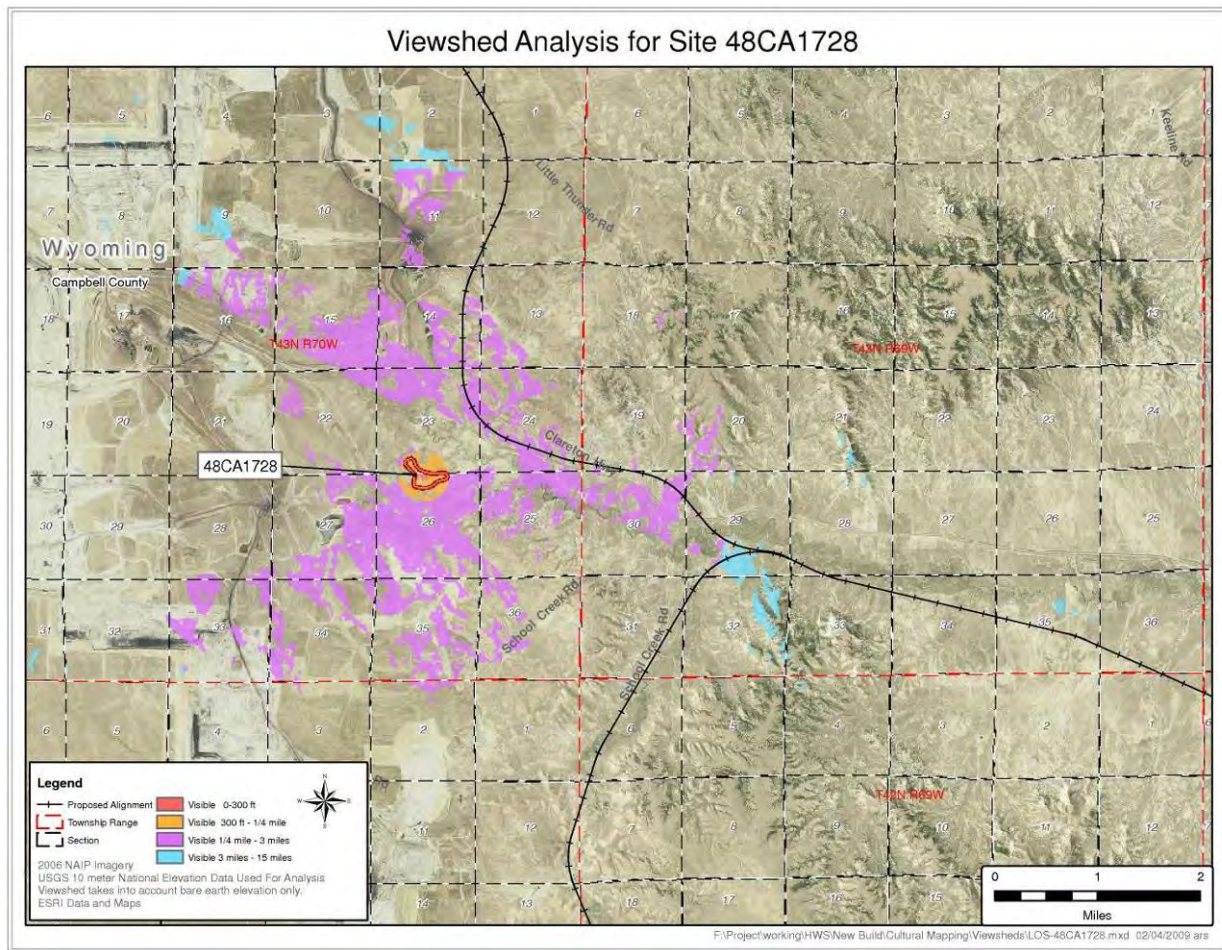


Figure 3-18. Viewshed Analysis of Site 48CA1728.

3.1.19 SITE 48CA1781

SITE DESCRIPTION

Site 48CA1781 was recorded on Forest Service administered land by High Plains Consultants in October 1982, as part of the Black Thunder Mine Class III Block Area Survey. The site is described as a “chipping/knapping station/butchering-processing site” comprised of two stone circles and four lithic artifact concentration areas on three benches extending 450m by 150m northwest and southeast overlooking an unnamed intermittent drainage. Observed projectile points indicate a late prehistoric occupation. No subsurface testing was conducted and the site may retain buried cultural remains.

PREVIOUS DISTURBANCE

Site integrity is rated as “Good” on one form, and “Poor” on the more recent IMACS site form (1987). A two-track through the site is noted on the site sketch map, and wind and water erosion are noted on the more recent form.

NATIONAL REGISTER SIGNIFICANCE

The site is recommended as eligible for the National Register on the regional level, presumably under Criterion D. Additional archaeological testing is recommended by the recorders.

INTEGRITY OF SETTING

The nearest vantage point to the PRB Expansion Project rail corridor is approximately 2 miles away (**Figure 3-19**). Considerable disturbances from coal mining and facilities are visible within one mile of the site and have severely compromised the setting. Any effect to the site’s integrity of setting attributable to the PRB Expansion Project will not be adverse.

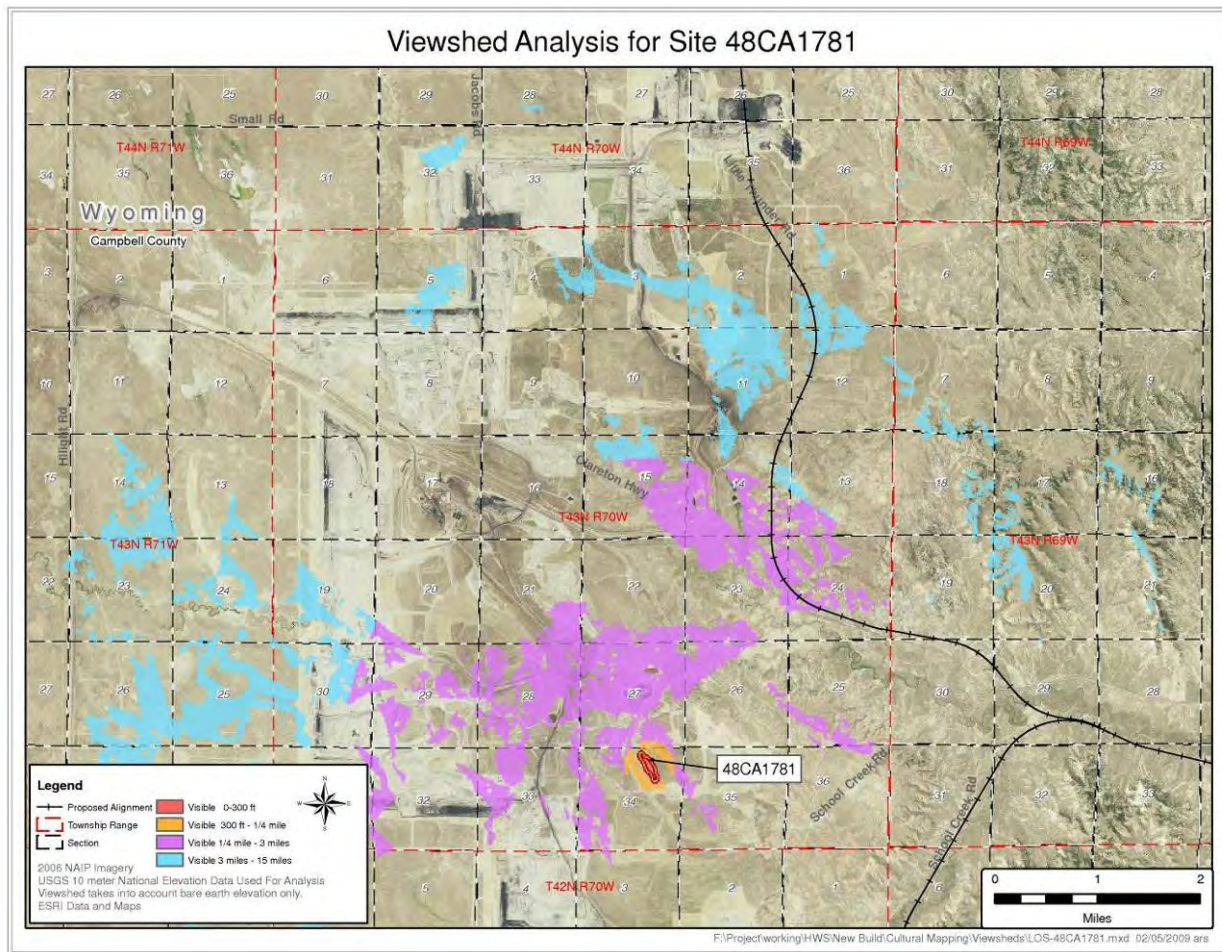


Figure 3-19. Viewshed Analysis of Site 48CA1781.

3.1.20 SITE 48CA1812/48CA0353

SITE DESCRIPTION

Site 48CA353 is the same as site 48CA1812. Maps show the two sites to be at exactly the same locations. The site was recorded on July 13, 1982 by “Eckerle” of OWSA during the ETSI Coal Slurry Pipeline Project construction project on privately-owned land. Eckerle reported 17 stone circles, six stone cairns, a cairn alignment of 12 rock piles and associated lithic artifacts within an area measuring 650m by 320m. The recorder did not indicate any attempt to conduct subsurface testing of the site.

PREVIOUS DISTURBANCE

Moderate sheetwash erosion is noted by the recorder. Evidently, the recorders collected all observed lithic artifacts.

NATIONAL REGISTER SIGNIFICANCE

The site was recommended as eligible on the regional level, presumably under Criterion D.

INTEGRITY OF SETTING

Integrity of setting is not discussed on the site form. The proposed PRB Expansion Project rail corridor is visible to the west of the site at a distance of approximately 1 mile (**Figure 3-20**). If integrity of setting is a contributing quality of the site's significance, the effect of the PRB Expansion Project rail corridor in the middle ground of the site's viewshed is not adverse.

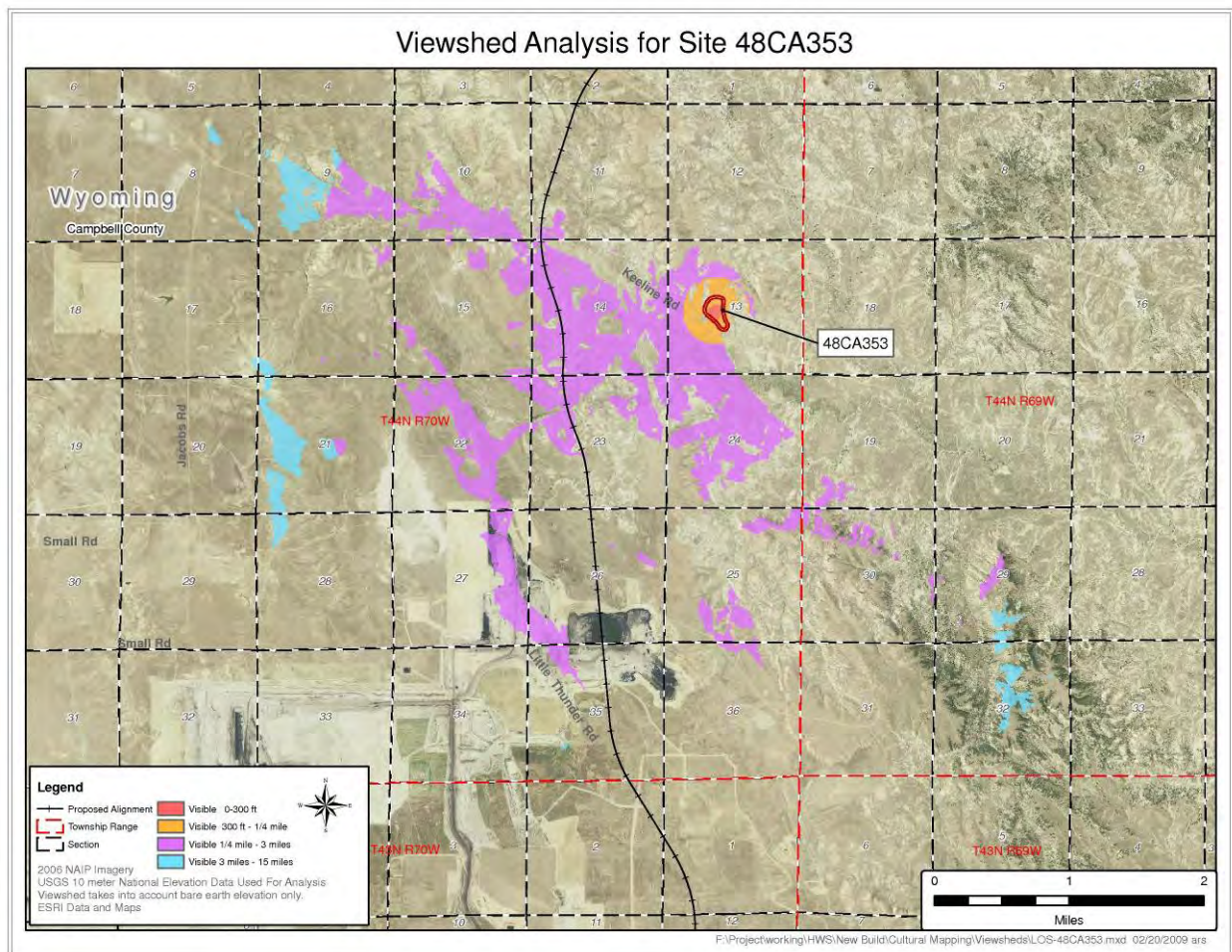


Figure 3-20. Viewshed Analysis of Site 48CA1812/48CA0353.

3.1.21 SITE 48CA2020

SITE DESCRIPTION

Site 48CA2020 was recorded on September 23, 1983 by Metcalf-Zier Archaeologists, Inc. as part of the Caballo Rojo Mine Survey project. The site consists of nine stone features of which four or five, the site form is unclear on this point, are described as stone circles, and the remainder are described as probably disturbed features. A lithic artifact scatter is associated with the features and encompasses about 300m by 120m area along a low saddle between ridges. No culturally or temporally diagnostic artifacts were recorded, and cultural deposition is likely shallow.

PREVIOUS DISTURBANCE

The recorders provide no direct assessments of previous disturbance other than a “Good” rating and a notation that an existing railroad grade borders the western side of the site and may have disturbed the SW part of the site.

NATIONAL REGISTER SIGNIFICANCE

The site is recommended as eligible for the National Register under Criterion D. The recorders note that artifacts were observed eroding from “shallow in situ deposits,” and charcoal may be eroding from a nearby cutbank.

INTEGRITY OF SETTING

The site’s integrity of setting has been severely compromised. The sketch map for the site identifies two-track roads on the east and west sides, a powerline on the west, and an existing railroad grade immediately beyond the powerline. The proposed PRB Expansion Project railroad grade would be situated about ½ mile to the west between the existing railroad grade and the mine disturbances to the west (**Figure 3-21**). The existing disturbances indicate that the site no longer possesses integrity of setting, and will not be affected by the addition of the PRB Expansion Project rail corridor within the viewshed.

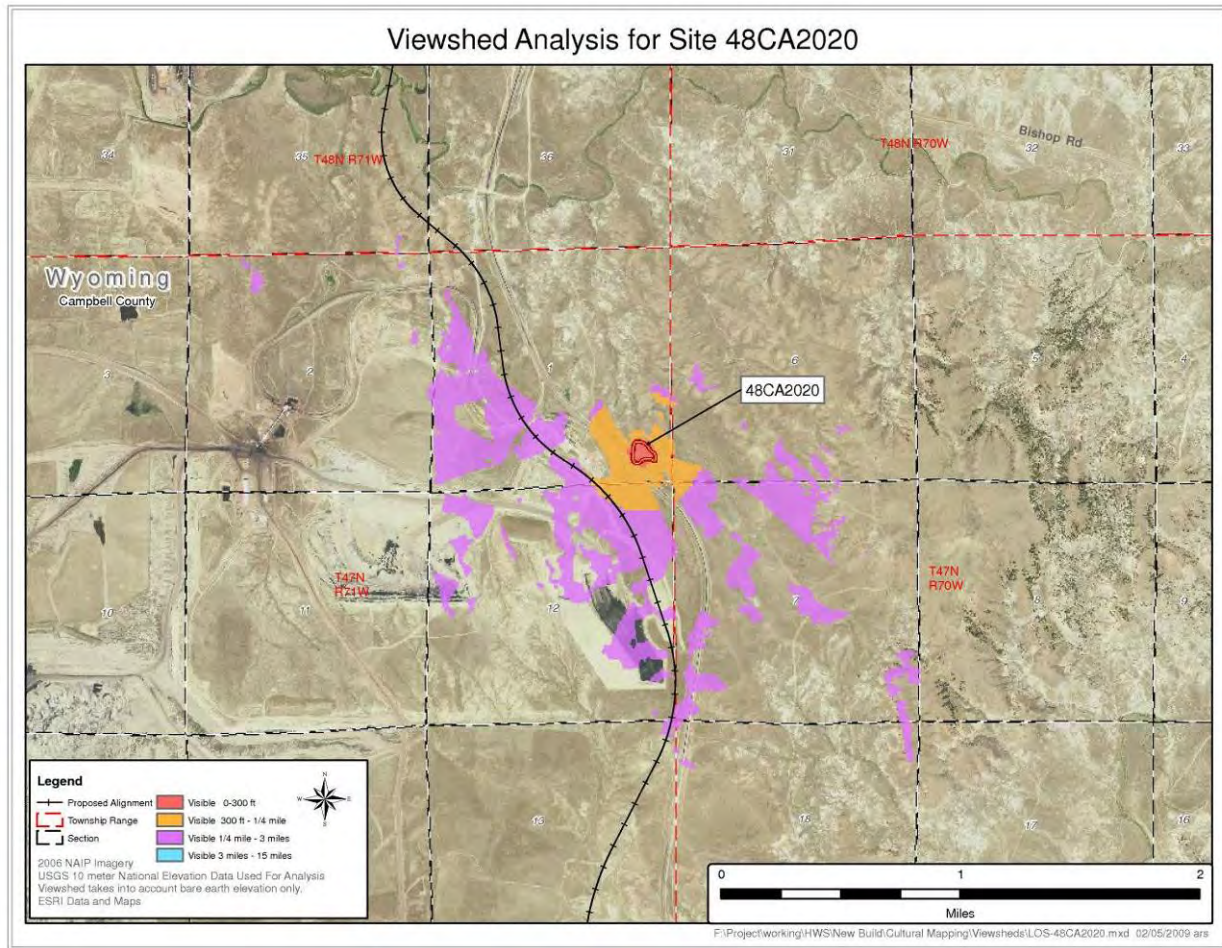


Figure 3-21. Viewshed Analysis of Site 48CA2020.

3.1.22 SITE 48CA2095

SITE DESCRIPTION

Site 48CA2095 was first recorded in August 1984 by John and Mavis Greer. More recently, GCM Services recorded the site on September 9, 2000. The site consists of three stone rings, two clusters of fire altered rock, and associated lithic debris, including a Later Archaic knife. Four shovel tests were conducted by GCM, resulting in the recovery of artifacts to a depth of 20cm in one test unit, and negative results in the others.

PREVIOUS DISTURBANCE

Erosion and grazing were noted as sources of disturbance to the site.

NATIONAL REGISTER SIGNIFICANCE

The site is recommended as eligible for the National Register under Criterion D for its scientific information potential.

INTEGRITY OF SETTING

Regardless of the relevance of the site's integrity of setting, the PRB Expansion Project rail corridor is situated 1 mile south of the site's location and is not visible within the site's viewshed (**Figure 3-22**). Consequently, the proposed PRB Expansion Project rail corridor will not affect the site.

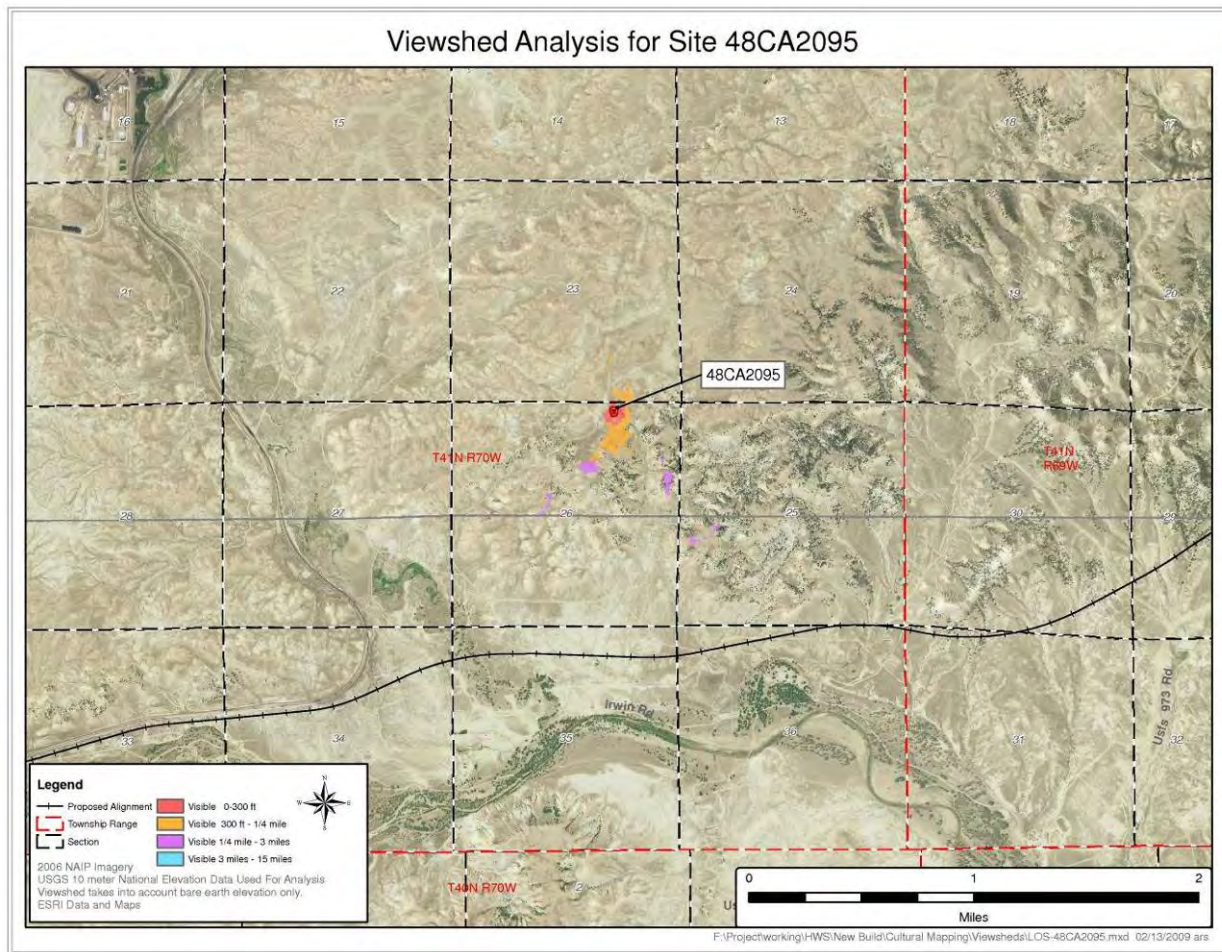


Figure 3-22. Viewshed Analysis of Site 48CA2095.

3.1.23 SITE 48CA2428

SITE DESCRIPTION

Site 48CA2428 was recorded on BLM administered land on April 26, 1987, by Mavis and John Greer. The site is described as consisting of two tipi rings with no associated artifacts in a 994m² area. The recorders estimated soil depth to extend to 20cm below the surface (cmbs), but no test units were excavated to confirm this.

PREVIOUS DISTURBANCE

The recorders rated site condition as “Fair,” and noted that erosion, deposition, ring dismantling and vehicle traffic had affected its condition.

NATIONAL REGISTER SIGNIFICANCE

The recorders recommended the site as eligible for the National Register under Criterion D based on its information potential.

INTEGRITY OF SETTING

Regardless of the relevance of integrity of setting, the proposed PRB Expansion Project rail corridor is situated approximately 1½ miles from the site at its nearest approach and not within the site's viewshed (**Figure 3-23**). Consequently, the proposed PRB Expansion Project rail corridor will not affect the site.

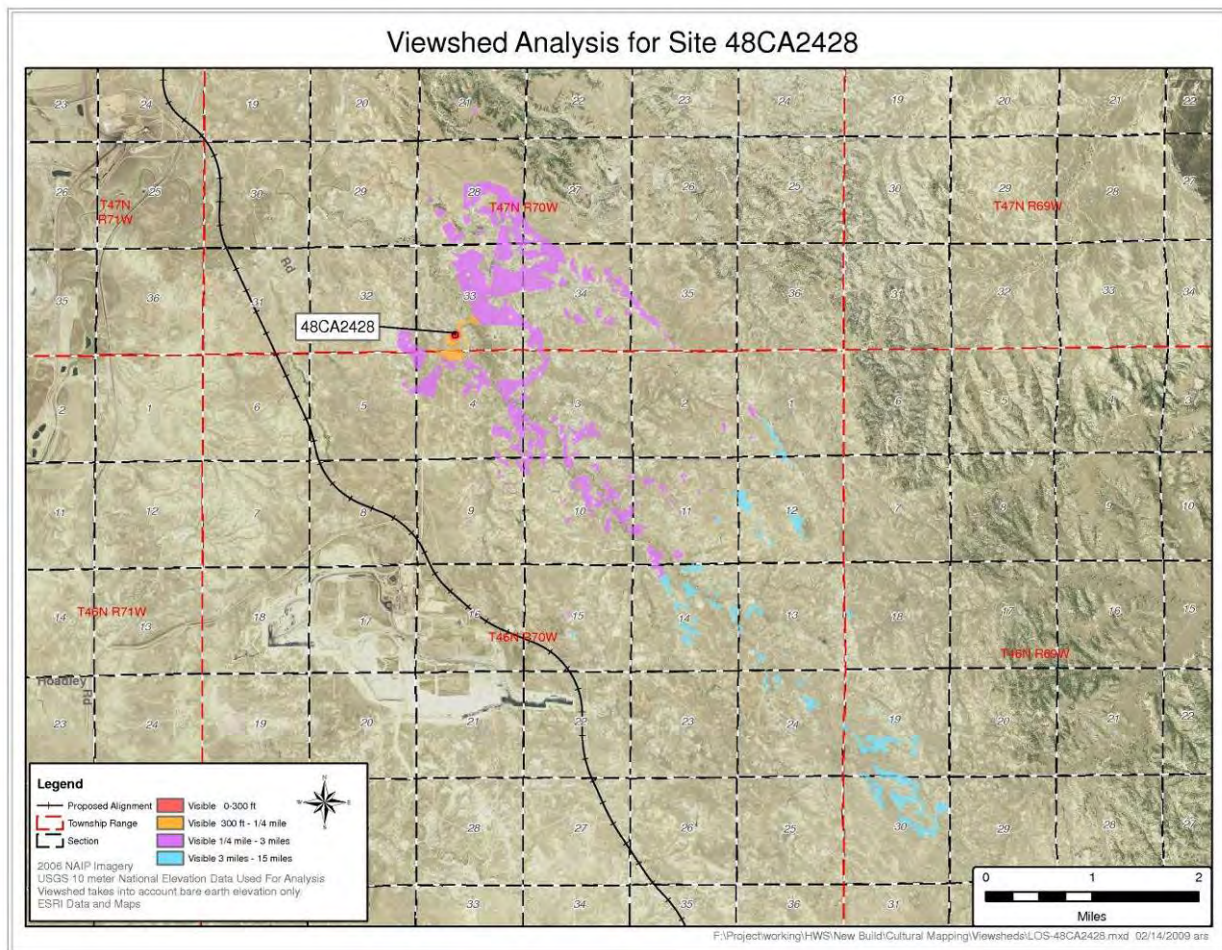


Figure 3-23. Viewshed Analysis of Site 48CA2428.

3.1.24 SITE 48CA2657

SITE DESCRIPTION

Site 48CA2657 was recorded by John and Mavis Greer on November 20, 1990 for the Tri-County Electric Powerline Tap to Shell Mining Company Dewatering Wells. The site is situated on USFS administered land, and consists of 17 tipi rings and one arrow point on a terrace. Site dimensions are 70m by 70m. No subsurface testing was conducted at the site.

PREVIOUS DISTURBANCE

Site condition is rated as “Fair” and erosion and blading are noted as having affected the integrity of the site. The site sketch map shows that the site has been extensively impacted by blading activities and a powerline is marked extending northeast by southwest across the site. Additionally, the proposed powerline centerline extends north/south along the western edge of the site.

NATIONAL REGISTER SIGNIFICANCE

The site was recommended as eligible for the National Register under Criterion D based on a perceived potential for buried cultural deposits at the site, but no testing was conducted to confirm the presence of such deposits.

INTEGRITY OF SETTING

The proposed PRB Expansion Project rail corridor is situated approximately 1/2 mile from the site within the middle ground of its viewshed. Approximately 1/4-mile stretch of the PRB Expansion Project rail corridor will be visible from the site (**Figure 3-24**). Given the presence of so many immediate visual intrusions at the site from powerlines, and the disturbance accrued from blading activities, the integrity of setting seems an unlikely contributing quality of significance and the PRB Expansion Project will have no effect on the site.

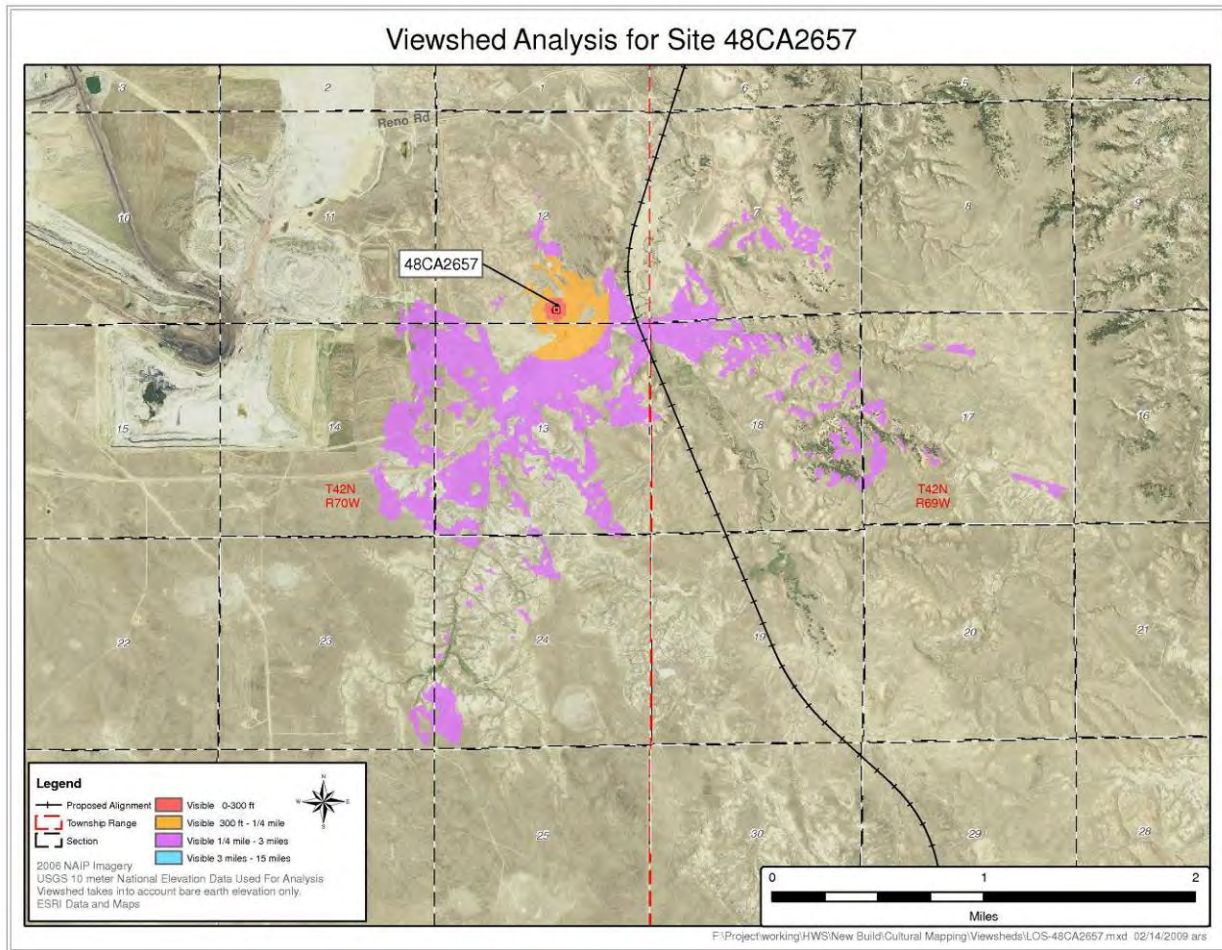


Figure 3-24. Viewshed Analysis of Site 48CA2657.

3.1.25 SITE 48CA2810

SITE DESCRIPTION

Site 48CA2810 was recorded by GCM Services on May 10, 1993. The site consists of an alignment of small cairns and singular large stones oriented northwest to southeast extending 480m over rolling grassland. One cairn was dismantled and the subsurface exposed for testing purposes. No artifactual material or sediments were observed. No associated temporally or culturally diagnostic artifacts were observed. No other features of any kind were observed.

PREVIOUS DISTURBANCE

Site condition is rated as “Good,” and only “erosion” is listed as a having affected the site in the past.

NATIONAL REGISTER SIGNIFICANCE

The site is considered to be a possible drive line associated with similar features at sites 48CA2824 and 48CA211, which may represent a game drive complex. The recorders recommended the site as eligible under Criterion D as a contributing element to this larger complex, although they did not specify what additional information further study of the site would provide.

INTEGRITY OF SETTING

The proposed PRB Extension Project rail corridor is situated within the foreground of the site and will be visible within approximately 1/8 mile of the site for a distance of about 1/2 mile (**Figure 3-25**). If integrity of setting is a contributing quality of this site, the visual effect of the proposed rail corridor will probably be adverse. If integrity of setting is not a contributing quality to its significance, the PRB Extension Project rail corridor will have no effect on the site.

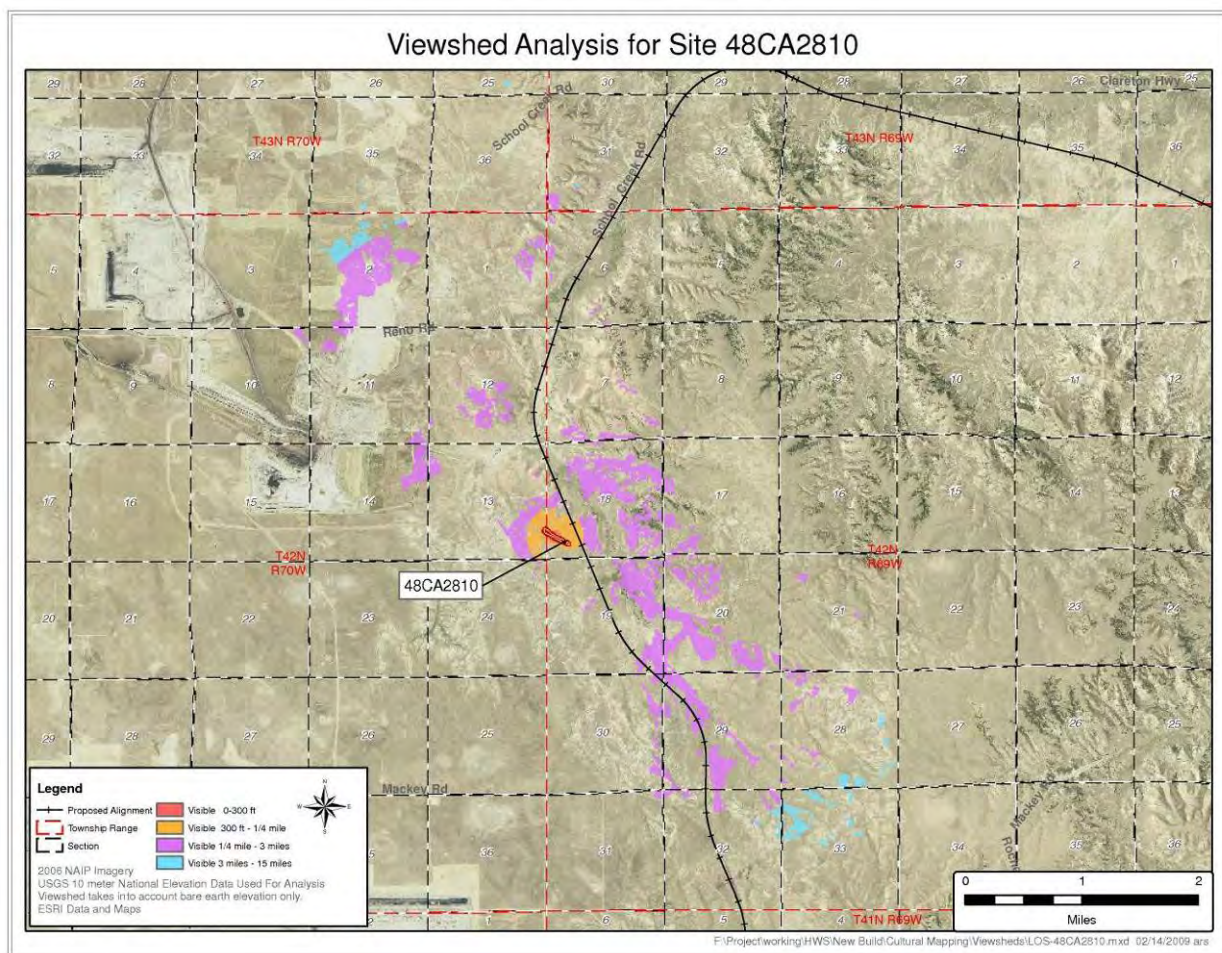


Figure 3-25. Viewshed Analysis of Site 48CA2810.

3.1.26 SITE 48CA2824

SITE DESCRIPTION

Site 48CA2824 was recorded by GCM Services on July 10, 1993. The site consists of an alignment of 101 small cairns and single stones oriented northwest to southeast extending 460m over rolling grassland. One partial stone circle was observed in association. One cairn was dismantled and the subsurface exposed for testing purposes. No artifacts were observed.

PREVIOUS DISTURBANCE

Site condition is rated as “Fair” and only “erosion” is listed as having affected site integrity.

NATIONAL REGISTER SIGNIFICANCE

The site is considered to be a possible drive line associated with similar features at sites 48CA2810 and 48CA211, which may represent a game drive complex. The recorders recommended the site as eligible under Criterion D as a contributing element to this larger complex, although they did not specify what additional information further study of the site would provide.

INTEGRITY OF SETTING

The proposed PRB Expansion Project rail corridor is visible approximately ¼ mile from the site at its nearest approach (**Figure 3-26**). If integrity of setting is a contributing quality of this site, the visual intrusion of the proposed PRB Expansion Project rail corridor will not adversely affect the site.

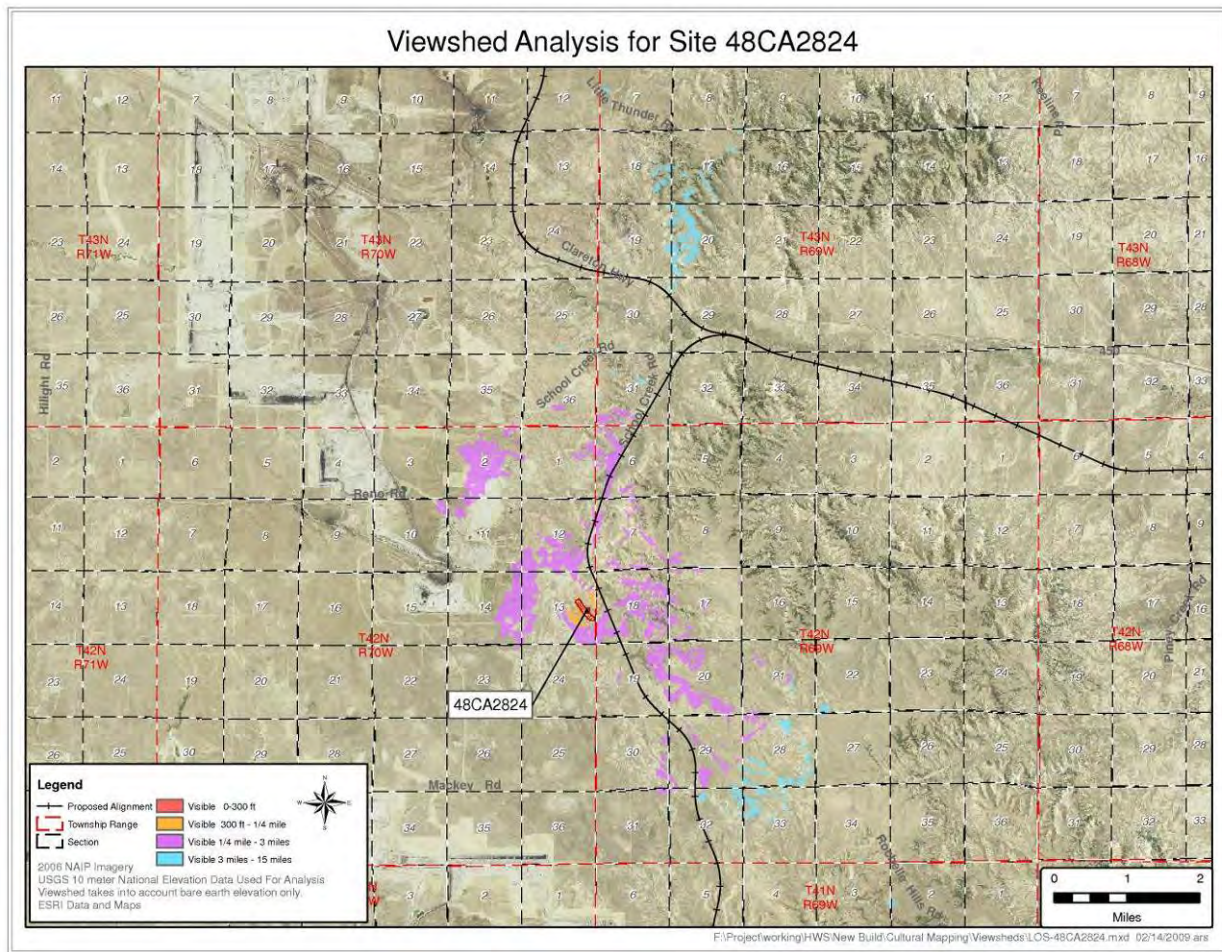


Figure 3-26. Viewshed Analysis of Site 48CA2824.

3.1.27 SITE 48CA3076

SITE DESCRIPTION

Site 48CA3076 was recorded by GCM Services on May 11, 1997. It consists of three stone rings, a cairn and two modified flakes within an area measuring 120m by 10m on a bench overlooking a tributary of Piney Creek. Four shovel tests produced no evidence of subsurface cultural deposits.

PREVIOUS DISTURBANCE

Site condition is rated as “Good,” and has been affected by erosion and grazing.

NATIONAL REGISTER SIGNIFICANCE

The site is recommended as eligible under Criterion D.

INTEGRITY OF SETTING

The integrity of setting is not identified as a contributing quality of the site. Regardless, the proposed PRB Expansion Project rail corridor is situated more than 2 miles to the west of the site and is not within the viewshed (**Figure 3-27**). The site will not be affected by the proposed PRB Expansion Project.

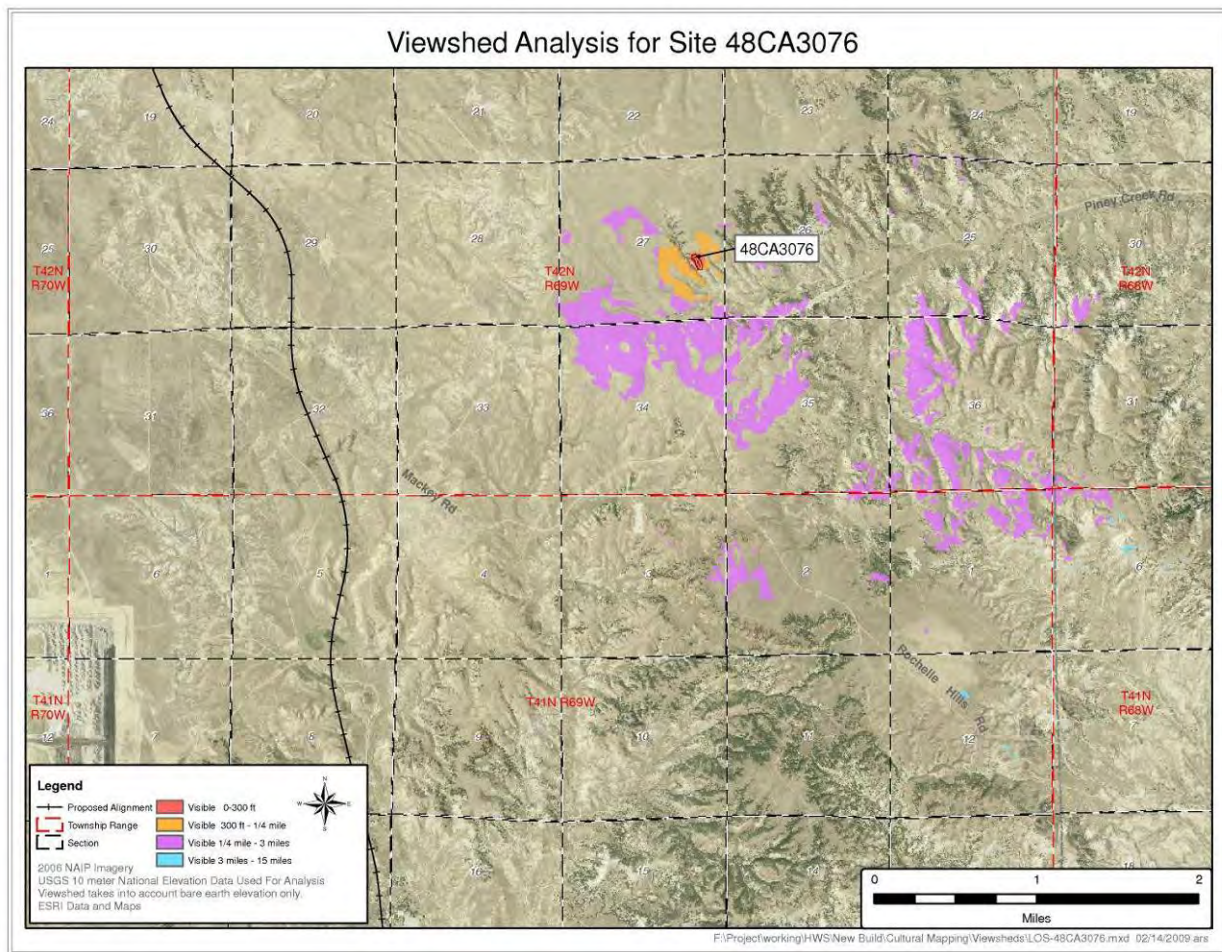


Figure 3-27. Viewshed Analysis of Site 48CA3076.

3.1.28 SITE 48CA3589

SITE DESCRIPTION

Site 48CA3589 was recorded by GCM Services on April 28, 1999. The site consists of 14 stone hearth features, five stone rings and a scatter of lithic artifacts. Test units were excavated at each of the stone rings with negative results. Wire probes were used to assess depth of sedimentation at each of the hearth features.

PREVIOUS DISTURBANCE

The recorders note erosion and grazing as sources of disturbance at the site.

NATIONAL REGISTER ELIGIBILITY

The site is recommended as eligible under Criterion D for its information potential.

INTEGRITY OF SETTING

The site is not recommended as eligible under Criterion A and integrity of setting is not addressed. LOS Analysis indicates the proposed PRB Expansion Project rail corridor would be visible approximately 1½ miles to the southwest with considerable mining activities visible in the intervening distance (**Figure 3-28**). If integrity of setting is considered to be a contributing quality of the site's significance, the intrusion of the proposed PRB Expansion Project rail corridor within the middle ground of its viewshed would not adversely affect the site.

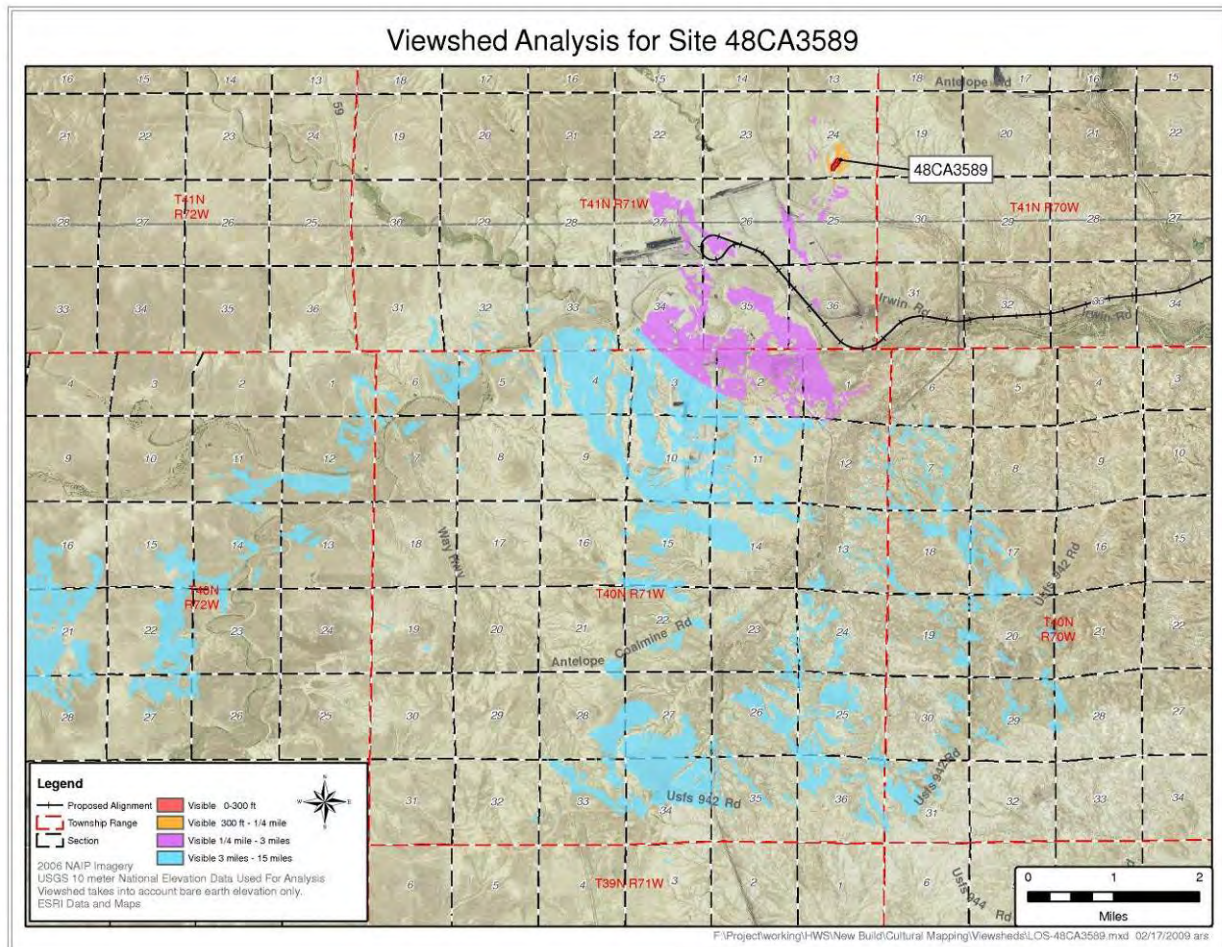


Figure 3-28. Viewshed Analysis of Site 48CA3589.

3.1.29 SITE 48CA3768

SITE DESCRIPTION

Site 48CA3768 was recorded by GCM Services on September 9, 2000. The site consists of a stone lined pit with an associated biface fragment on USFS administered land. The pit feature is described as pear-shaped, roughly 5m in diameter, 50cm deep, and with stones stacked up to 40cm above the ground surface. The recorders suggest the site may represent a vision quest or eagle trapping pit.

PREVIOUS DISTURBANCE

Previous disturbance is attributed to erosion and grazing.

NATIONAL REGISTER ELIGIBILITY

The site is recommended as eligible for the National Register under Criterion D for its information potential, and may be eligible under criterion A as a property of traditional religious and cultural importance.

INTEGRITY OF SETTING

If the property qualifies for the National Register under Criterion A, its integrity of setting would likely be an important contributing characteristic. The proposed PRB Expansion Project rail corridor is within the viewshed approximately ¼ mile to the northeast of the site, and near enough to its foreground that the rail corridor will likely intrude on the site's setting (**Figure 3-29**). If integrity of setting is a contributing characteristic, the effect could be adverse.

The site should be revisited with knowledgeable tribal representatives to determine whether it retains important traditional cultural values sufficient to qualify for the National Register under Criterion A. If so, negotiations should proceed to develop appropriate mitigation measures.

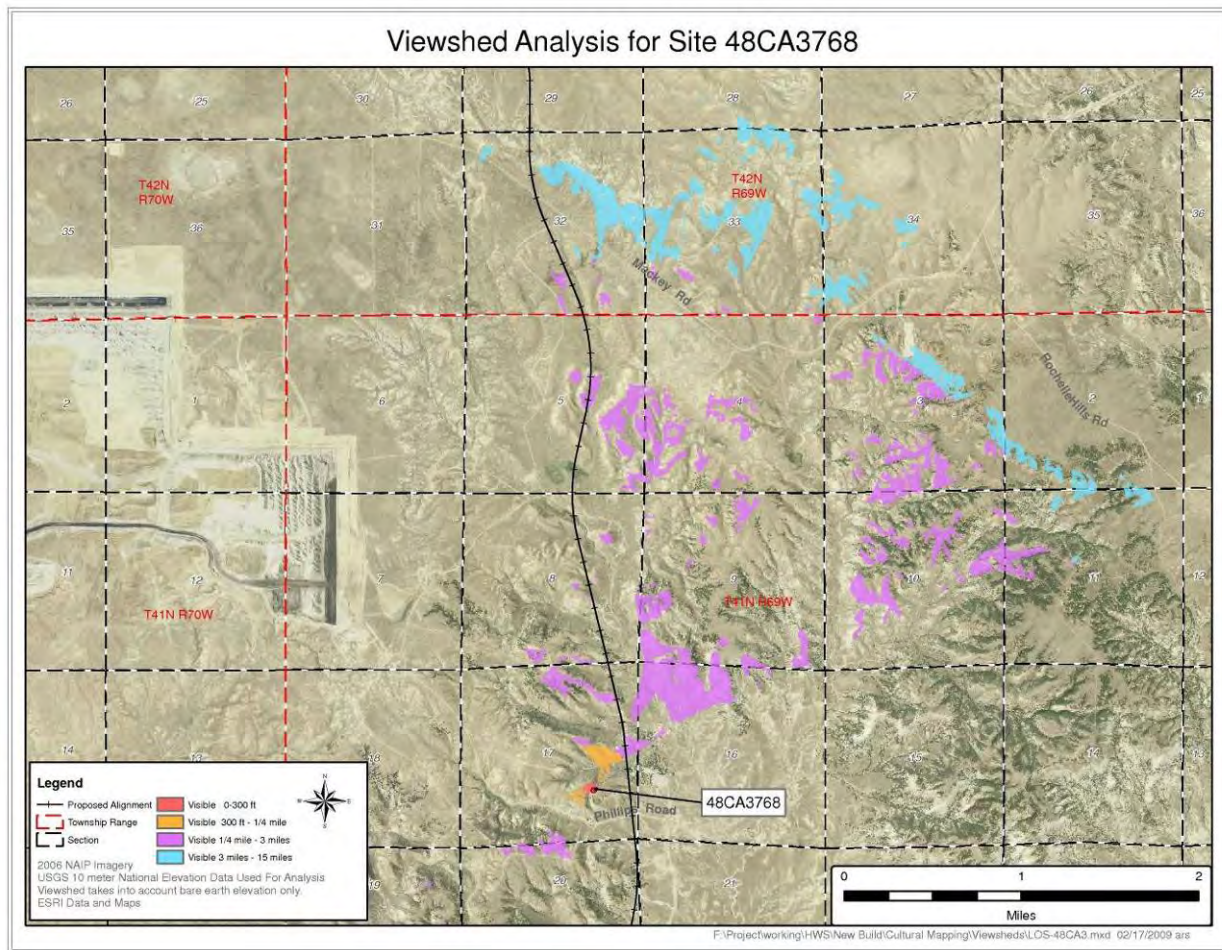


Figure 3-29. Viewshed Analysis of Site 48CA3768.

3.1.30 SITE 48CA6115

SITE DESCRIPTION

Site 48CA6115 was recorded by GCM Services on June 5, 2006. The site consists of 21 stone rings and nine widely scattered flakes in an area measuring 220m by 80m on the east side of School Creek. A gradiometer sweep of the site was unproductive due to the high magnetic readings of underlying scoria outcrops. Four, 1m by 1m archaeological test units exposed the remains of a single hearth and small fragments of burned bone in one of the tests, and a possible hearth remnant in a second unit.

PREVIOUS DISTURBANCE

The recorders noted that erosion, grazing, and mechanical excavations have disturbed the site. The latter are likely attributable to the proximity of a stock dam and reservoir on the north side of the site, and a two track through the western portion of the site.

NATIONAL REGISTER ELIGIBILITY

The site is recommended as eligible for the National Register under Criterion D for its information potential.

INTEGRITY OF SETTING

The site is not recommended as eligible under Criterion A, and integrity of setting is not addressed. Viewshed analysis indicated that the proposed PRB Expansion Project rail corridor is situated approximately 3/8 mile west of the site (**Figure 3-30**). The proposed PRB Expansion Project rail corridor may be visible within the middle ground of the site's viewshed. If integrity of setting is considered to be a contributing quality of the site's significance, the PRB Expansion Project rail corridor will not adversely affect the site.

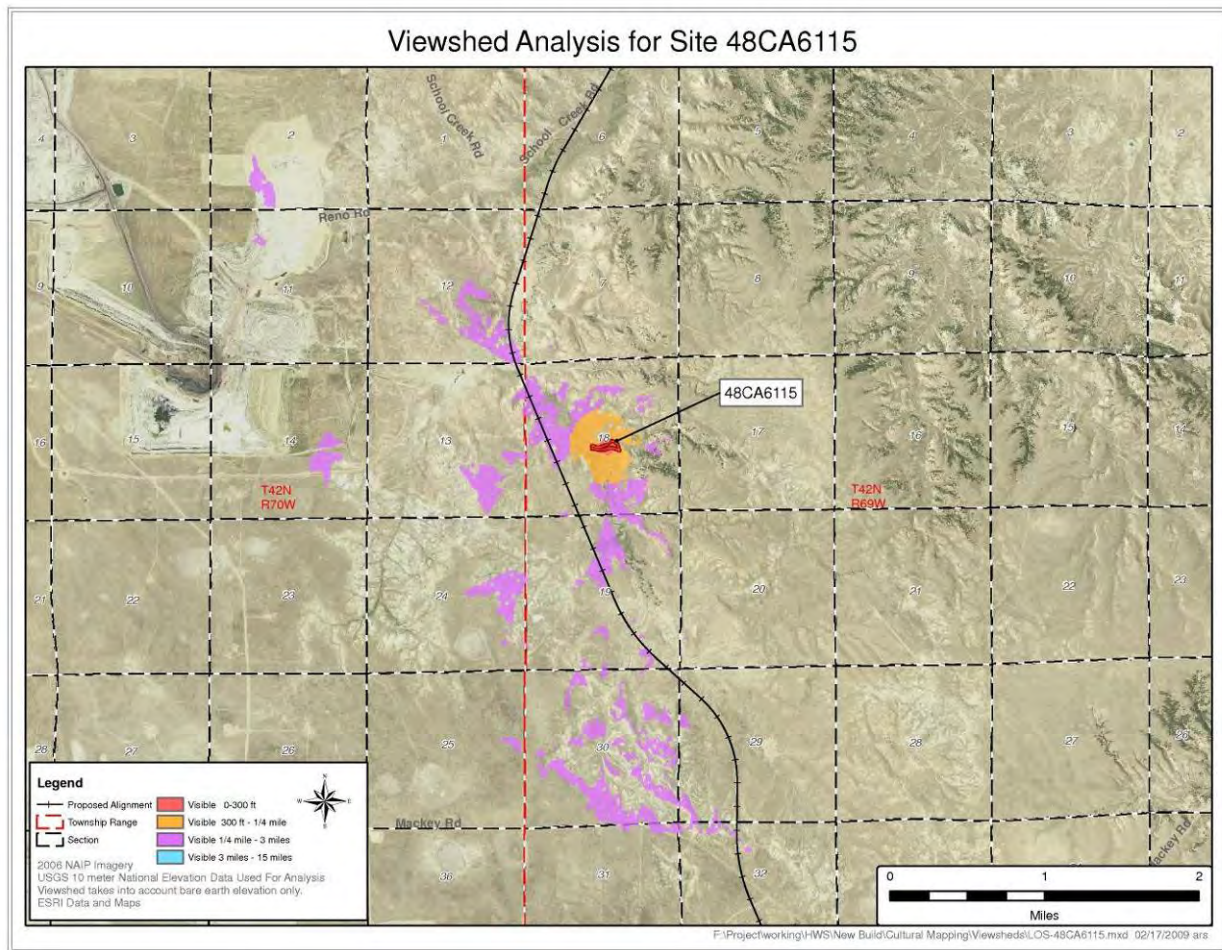


Figure 3-30. Viewshed Analysis of Site 48CA6115

3.1.31 SITE 48CA6116

SITE DESCRIPTION

SITE 48CA6116 was recorded by GCM Services on June 6, 2006. The site consists of five stone circles and a cairn with an associated sparse lithic scatter within a 5,500m² area on private land. Five test units and a gradiometer sweep produced charcoal flecks in one unit and a small piece of bone.

PREVIOUS DISTURBANCE

No previous disturbance was noted on the site form.

NATIONAL REGISTER SIGNIFICANCE

The site was recommended as eligible under Criterion D only, for the important scientific information it may retain.

INTEGRITY OF SETTING

The recorders noted the site retains “Good” integrity of setting. However, this quality would not contribute to the significance of the property under Criterion D as an important source of scientific information. The proposed PRB Expansion Project rail corridor is visible approximately ½ mile from the site to the west, and may be obscured by stands of Ponderosa pine (**Figure 3-31**). The visual intrusion will not affect the qualities that make the property eligible.

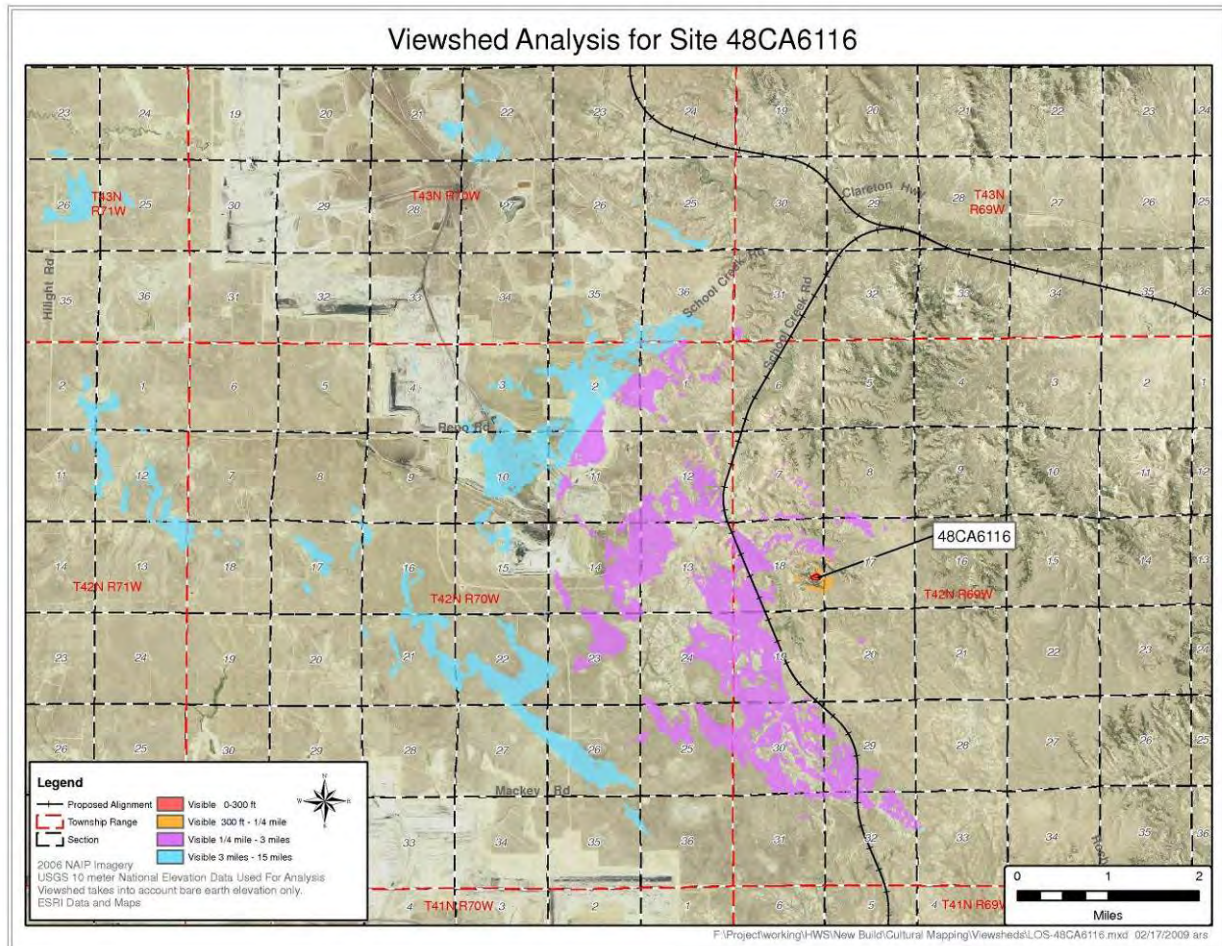


Figure 3-31. Viewshed Analysis of Site 48CA6116.

3.1.32 SITE 48CA6117

SITE DESCRIPTION

Site 48CA6117 was recorded by GCM Services on June 6, 2006. The site is approximately 1,600m² in size, and consists of two components. The first component is a prehistoric component consisting of two stone circles and a sparse lithic scatter. The second is a historic component consisting of

discarded cans and a few pieces of sawn lumber. A test unit excavated at one stone circle produced a few shallow lithic artifacts and a charcoal-stained soil lens.

PREVIOUS DISTURBANCE

No previous disturbance was noted at the site.

NATIONAL REGISTER SIGNIFICANCE

The site was recommended as eligible under Criterion D only, for the important scientific information it may retain.

INTEGRITY OF SETTING

The recorders noted the site retains “Good” integrity of setting. However, this quality would not contribute to the significance of the property under Criterion D as an important source of scientific information. The proposed PRB Expansion Project rail corridor is visible $\frac{3}{4}$ to 1 mile west of the property (**Figure 3-32**). The visual intrusion of the PRB Expansion Project rail corridor will not affect the qualities that make the property eligible.

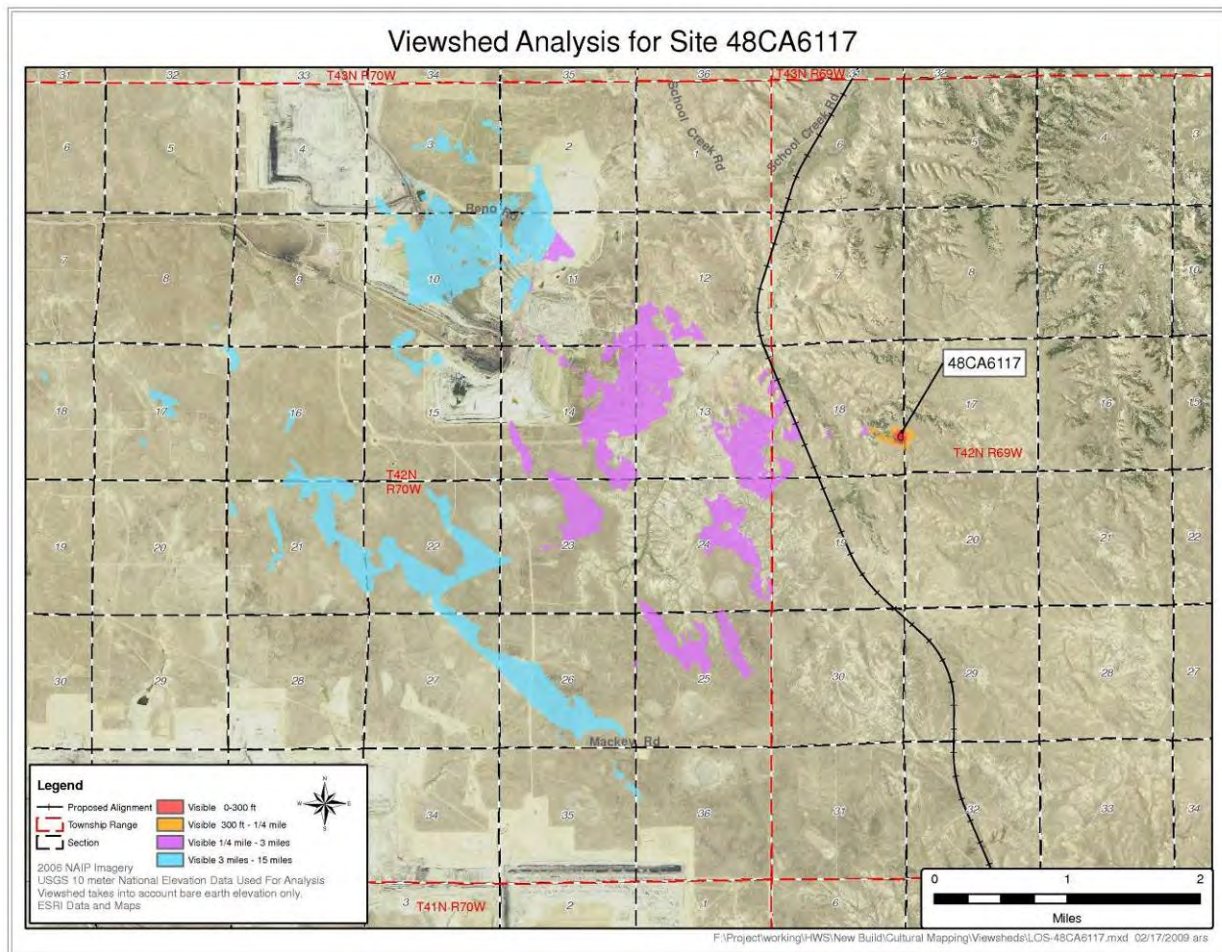


Figure 3-32. Viewshed Analysis of Site 48CA6117.

3.1.33 SITE 48CO0646

SITE DESCRIPTION

Site 48CO0646 was recorded by J. Schoen on June 22, 1981. The site consists of two stone circles and a scatter of sandstone rocks within a 4,500 square-foot (ft²) area on a small eroded hillock. No artifacts were observed and no shovel tests were warranted due to the eroded nature of the land form's surface.

PREVIOUS DISTURBANCE

The site location is described as badly eroded with no potential for subsurface cultural deposits.

NATIONAL REGISTER ELIGIBILITY

Despite the noted absence of artifacts or sediments which could contain buried cultural remains, the recorder recommended the site as eligible under Criterion D for its scientific information potential.

INTEGRITY OF SETTING

Regardless of the relevance of the site's integrity of setting, the proposed PRB Expansion Project rail corridor is situated 2 miles north of the site's location and not visible from the site (**Figure 3-33**). Consequently, the PRB Expansion Project rail corridor will not affect the site.

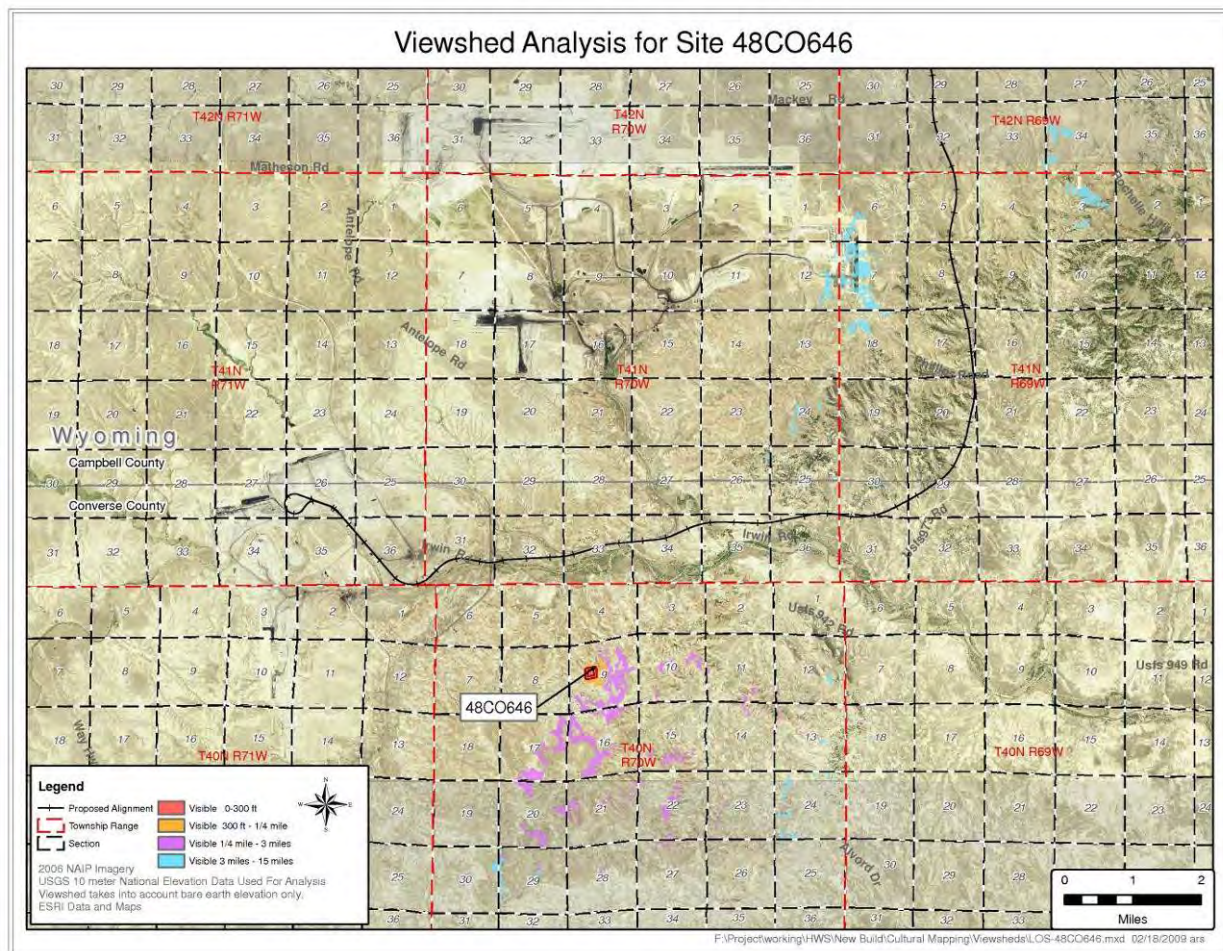


Figure 3-33. Viewshed Analysis of Site 48CO0646.

3.1.34 SITE 48NO0293

SITE DESCRIPTION

Site 48NO0293 is a single-span, rigid connected steel Pennsylvania through truss bridge. The bridge was recorded by Fraser Design for the Wyoming Truss Bridge Survey in 1981. The bridge measures 130ft 8in in length and 16ft 6in in width and has a timber deck.

PREVIOUS DISTURBANCE

The bridge was originally a railroad truss that was moved to this location to serve as a road crossing over the Cheyenne River.

NATIONAL REGISTER SIGNIFICANCE

The recorders note that the bridge is the only example of its truss type still in use on the county road system in Wyoming, and is among the most important truss bridges in the state.

INTEGRITY OF SETTING

The bridge has been moved to its present location and its function has changed from use as a railroad truss to a county road bridge for vehicular use. Consequently, the integrity of setting is no longer a contributing quality. The proposed PRB Expansion Project rail corridor is visible from the bridge approximately 1 mile to the north (**Figure 3-34**). Given the loss of integrity of setting, the PRB Expansion Project will have no effect on the bridge.

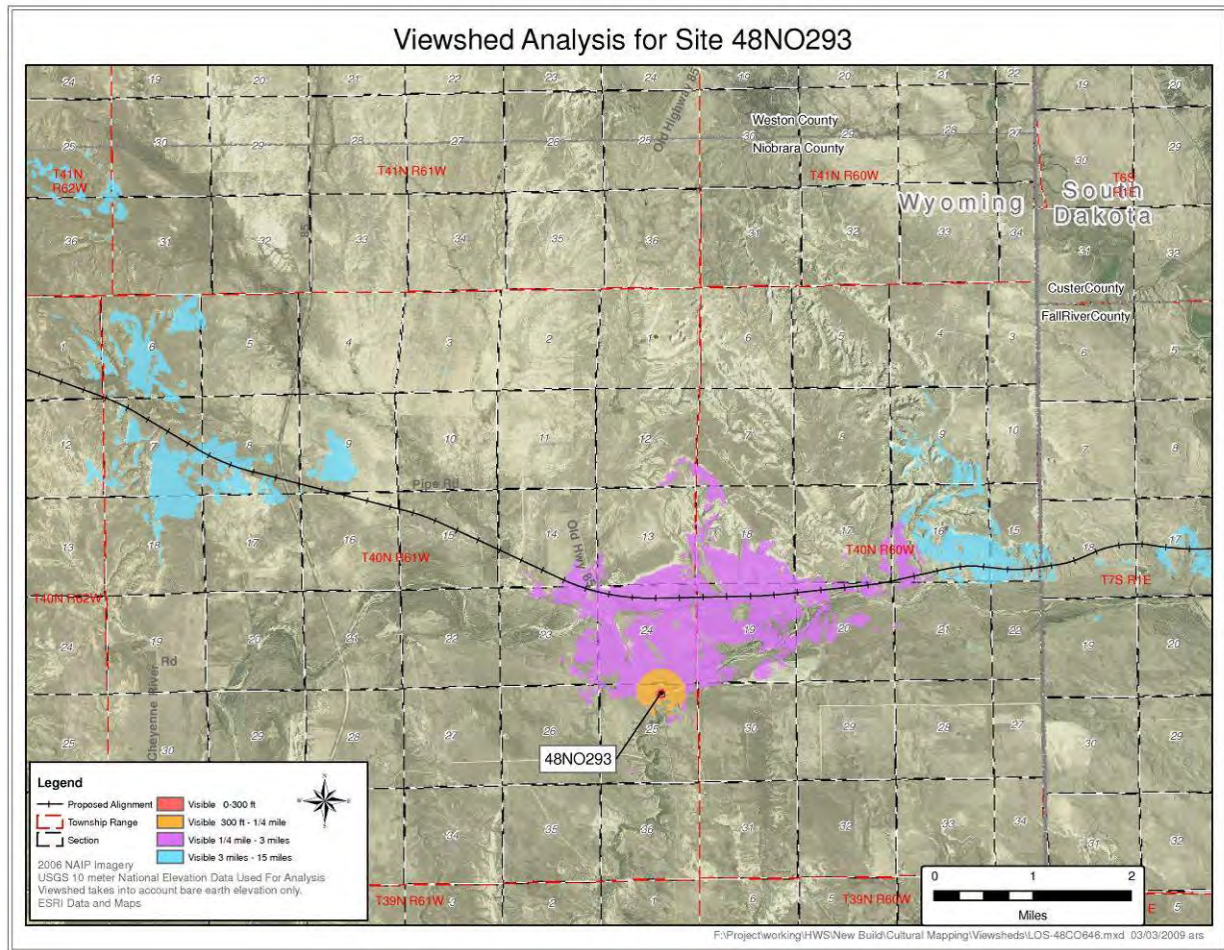


Figure 3-34. Viewshed Analysis of Site 48NO0293.

3.1.35 SITE 48WE0259

SITE DESCRIPTION

Site 48WE0259 was recorded by Powers Elevation on March 30, 1982, on privately owned land. The site form indicates varying counts of stone circles and two stone cairns with associated lithic artifacts and historic debris. At various places in the documentation, stone circle counts vary from 10 to 99 in four designated areas, to 109 in the cover letter to the client. Four or five test units, the site form is unclear on this point, were excavated at the site, indicating that cultural materials may be buried under wind-blown sediments in the upper 5cm of the site.

PREVIOUS DISTURBANCE

The recorders rated the site's integrity as "Good," but noted substantial disturbance at the site attributable to two two-track roads and two pipelines extending through it, a tank battery located on its western portion, and vandalism.

NATIONAL REGISTER SIGNIFICANCE

The recorders recommended the site as eligible for the National Register on the regional level, and recommended avoiding impacts from proposed oil production activities.

INTEGRITY OF SETTING

Integrity of setting was not considered by the recorders. Nevertheless, the proposed PRB Expansion Project rail corridor is situated more than 1¾ miles to the south of the site in the middle ground of its viewshed (**Figure 3-35**). If integrity of setting is a contributing quality of the site's significance, the effect of the PRB Expansion Project should be considered not adverse.

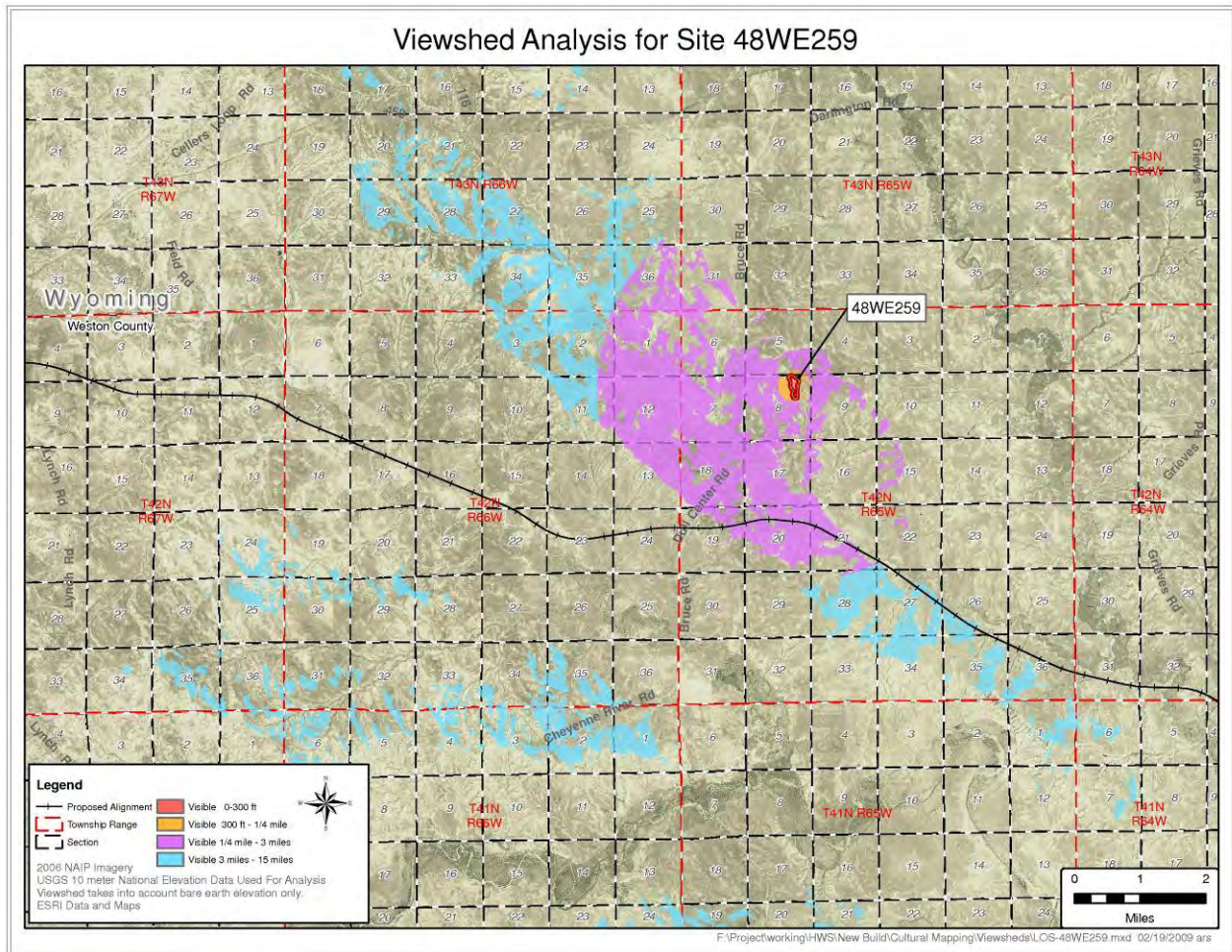


Figure 3-35. Viewshed Analysis of Site 48WE0259.

3.1.36 SITE 48WE0308

SITE DESCRIPTION

Site 48WE0308 was recorded by OWSA on June 6, 1982. The site consists of four stone cairns, five possible stone circles, and associated flaking debris on USFS-administered land. The recorders noted severe deflation and erosion evident at the site and did not conduct subsurface testing.

PREVIOUS DISTURBANCE

The recorders noted the site is in “Poor” condition due to erosion, and noted that 7 percent of the site would be disturbed by the ETSI Coal Slurry Pipeline Project.

NATIONAL REGISTER SIGNIFICANCE

The site was recommended as not eligible by the original recorders. However, the site was re-evaluated by the USFS on August 20, 2006, and on October 3, 2007, SHPO and USFS reached consensus that the site be considered “unevaluated” based on inconsistencies in the Wyoming database with the recommendation of the original recorder, and the perceived need to consult with tribes, given the number of stone features at the site.

INTEGRITY OF SETTING

Given that the site is considered unevaluated, the relevance of integrity of setting is unknown at this time. Nevertheless, the proposed PRB Expansion Project rail corridor is visible to the north of the site at a distance of approximately $\frac{3}{4}$ mile (**Figure 3-36**). If the site is eligible and integrity of setting is a contributing quality of the site’s significance, the effect of the PRB Expansion Project rail corridor in the middle ground of its viewshed should be considered not adverse.

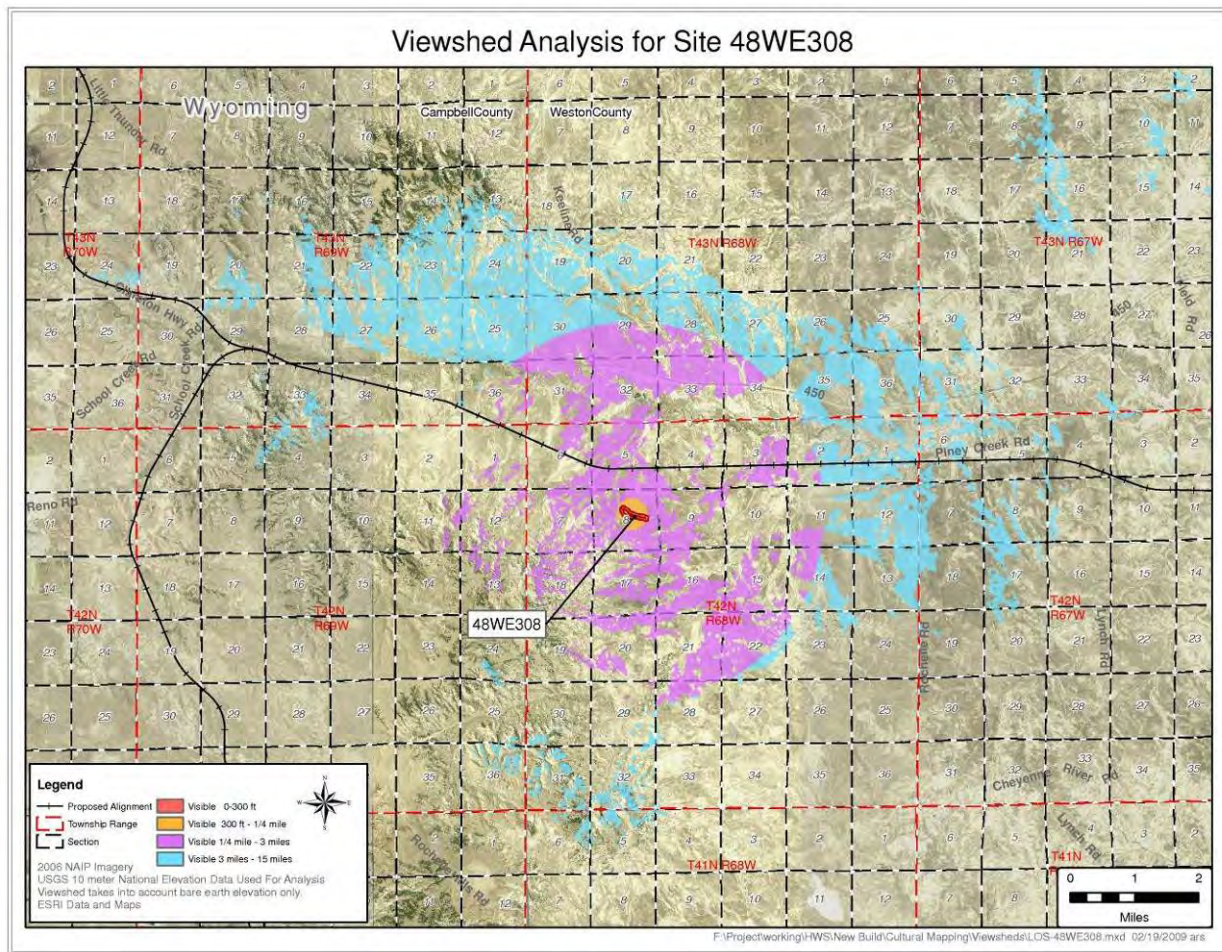


Figure 3-36. Viewshed Analysis of Site 48WE0308.

3.1.37 SITE 48WE0316

SITE DESCRIPTION

Site 48WE0316 was recorded by OWSA on August 5, 1982, on USFS- administered land. The site consists of 12 stone circles, a cairn and a stone alignment with an associated scatter of lithic artifacts. Four rings were tested, of which two produced subsurface cultural materials.

PREVIOUS DISTURBANCE

The recorders noted slight erosion and overgrazing evident at the site. The anticipated disturbance discussion suggested that the ETSI Coal Slurry Pipeline Project would impact 7 percent of the site.

NATIONAL REGISTER SIGNIFICANCE

The recorders recommended the site as eligible for the National Register on the regional level, and that excavation was the appropriate treatment for the site.

INTEGRITY OF SETTING

Integrity of setting was not considered by the recorders. Nevertheless, two very small segments of the proposed PRB Expansion Project rail corridor may be visible from the site; one segment is situated north-northeast approximately 1 mile distant, and the other is situated northeast of the site at a distance of more than 1½ miles (**Figure 3-37**). If integrity of setting is a contributing quality of the site's significance, the effect of the PRB Expansion Project should be considered not adverse.

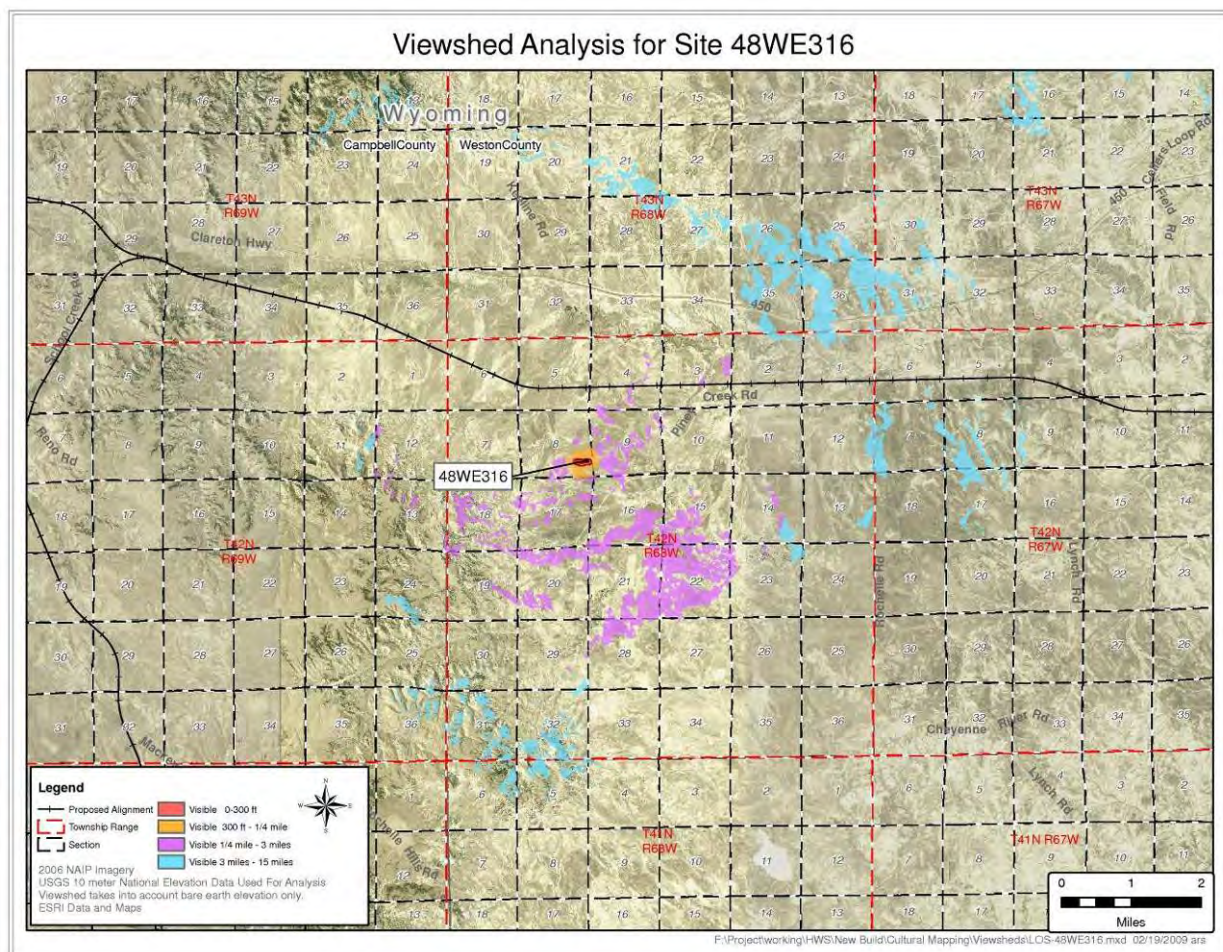


Figure 3-37. Viewshed Analysis of Site 48CWE0316.

3.1.38 SITE 48WE0366

SITE DESCRIPTION

Site 48WE0366 was recorded by J. Greer on April 25, 1983. The site consists of about six stone circles, several stone clusters, and numerous and varied historic artifacts.

PREVIOUS DISTURBANCE

None noted.

NATIONAL REGISTER SIGNIFICANCE

The site was recommended as not eligible for the National Register under any of the criteria by the recorders, but was included on the list of eligible sites provided by the SHPO.

INTEGRITY OF SETTING

The proposed PRB Expansion Project rail corridor is situated about 3 miles to the southwest of the site and is not within its viewshed (**Figure 3-38**). No effect will occur, and no further work is warranted.

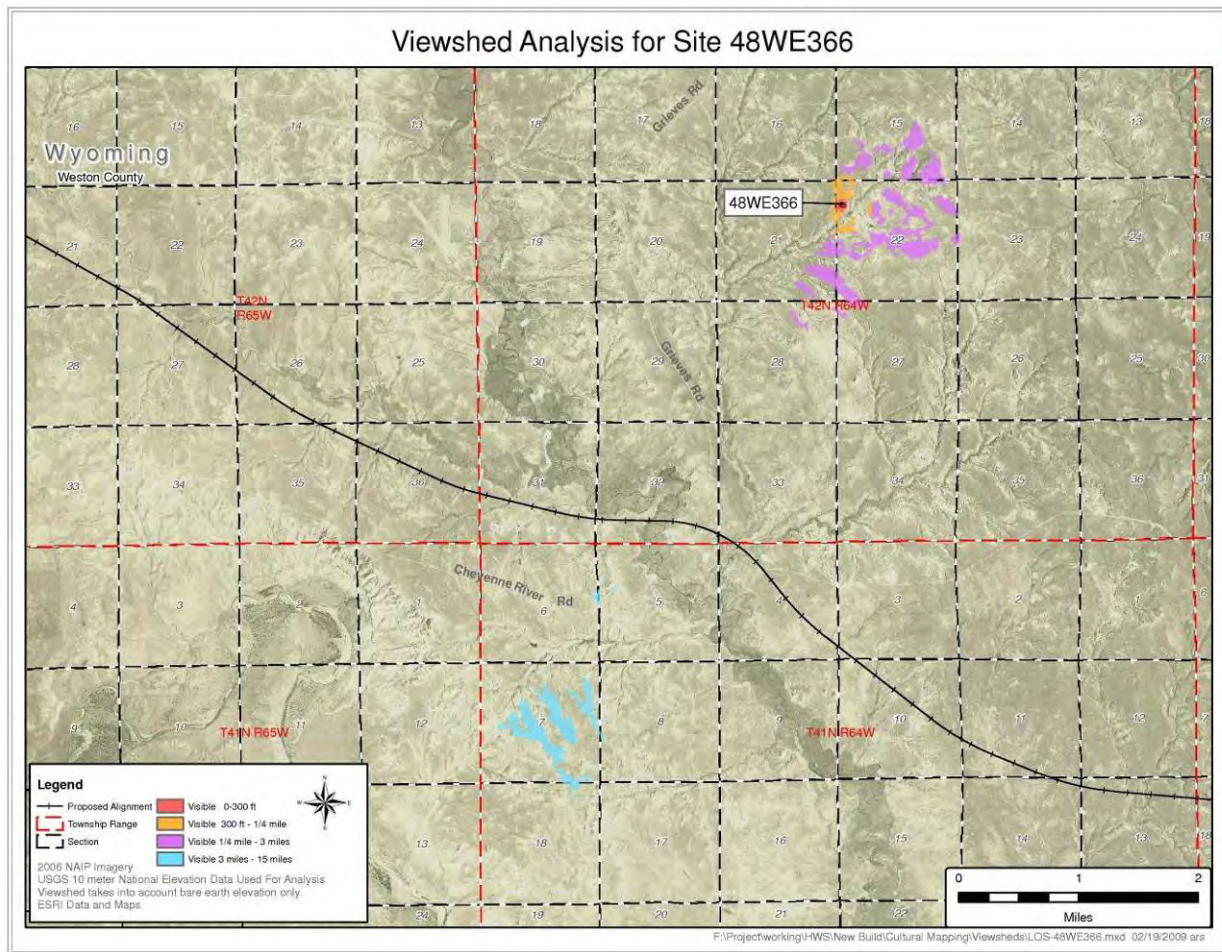


Figure 3-38. Viewshed Analysis of Site 48WE0366.

3.1.39 SITE 48CA6216

SITE DESCRIPTION

Site 48CA6216 was reported to WYCRO by Jeff Adams of Greystone Environmental Consultants in a letter format dated 2006. The letter indicates that the site consists of stone circles, was recommended eligible, and included its location on a 7.5 minute quadrangular map. However, no further descriptive information was included.

PREVIOUS DISTURBANCE

None noted.

NATIONAL REGISTER SIGNIFICANCE

The site was recommended as eligible, but no justification or explanation was provided.

INTEGRITY OF SETTING

Integrity of setting was not addressed in the letter report. However, the line of sight analysis shows the site to be three miles from the PRB Expansion Project rail corridor at its nearest approach, and no portion of the corridor is visible from the site (**Figure 3-39**). Consequently, the PRB Expansion Project will have no effect on the site.

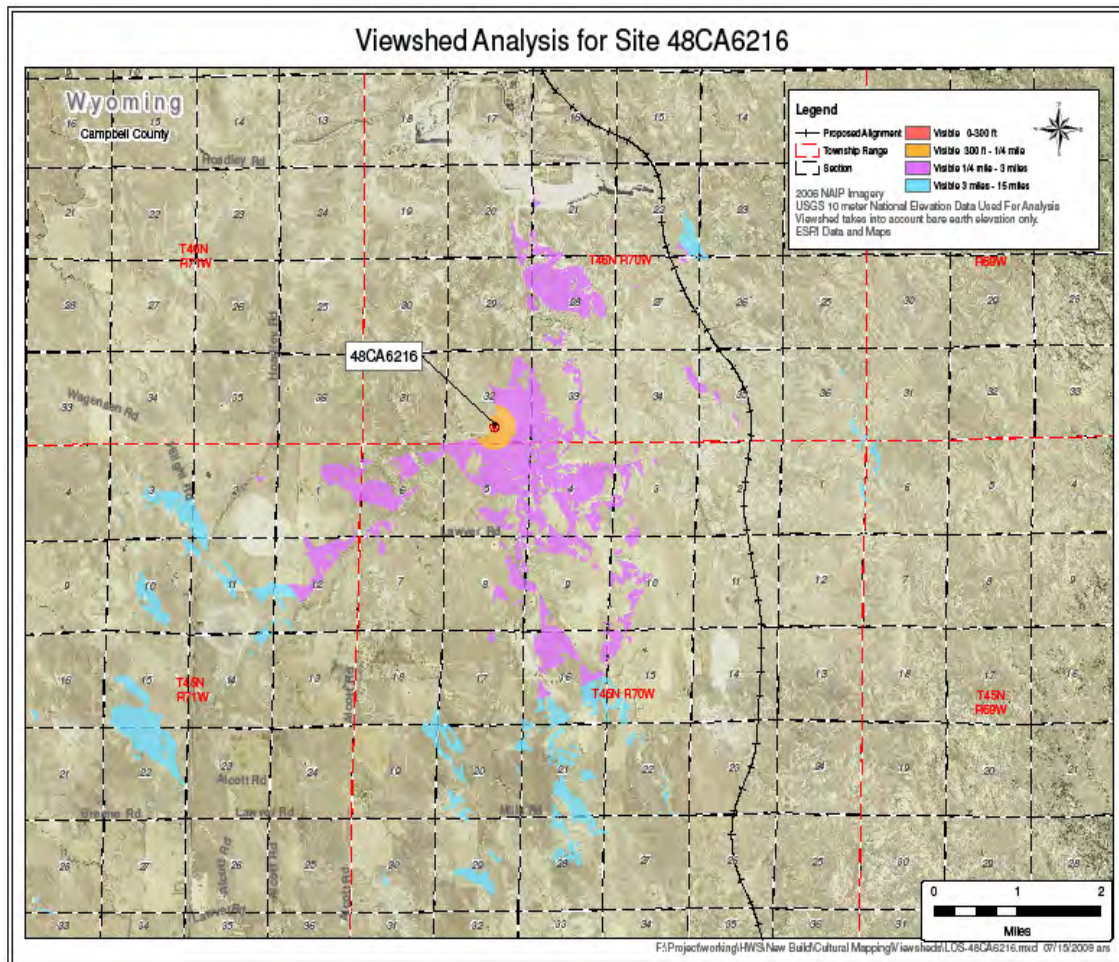


Figure 3-39. Viewshed Analysis of 48CA6216

4.0 SUMMARY OF LINE OF SITE ANALYSIS

The line of sight analysis was conducted to assess the potential visual effects of the proposed PRB Expansion Project on eligible and listed historic properties within three miles of the ROW centerline in the New Build Segment of the PRB Expansion Project. In South Dakota, the SHPO provided 33 site forms in response to the DM&E's request for information regarding previously identified historic properties within this six mile wide corridor. The Wyoming SHPO provided 39 site forms for that portion which extends into Wyoming.

The Line of Sight Analysis incorporated several variables, including site type, applicable eligibility criteria, site condition, integrity of setting, distance to rail corridor, and graded visual impact to formulate recommendations for findings of effect, and to identify any additional efforts that may be needed to address the effects of the undertaking on these properties (**Tables 4-1** and **4-2**).

4.1 SOUTH DAKOTA SITES

Of the 33 historic properties located within three miles of the New Build centerline in South Dakota, several are assigned both Smithsonian trinomials and state numbers. Seven historic properties are situated within the proposed ROW. Six of the seven are railroad-related properties where the proposed ROW parallels existing rail corridors. The seventh, 39FA1369, is described as a few pieces of a historic millstone. Since these seven historic properties are within the ROW, the direct physical effects of the project on them will be addressed under separate cover in project survey reports.

The remaining 26 historic properties are situated from ½ to more than four miles from the ROW centerline. Of these properties, the visibility of the proposed rail corridor would fall within the middleground or background of their viewsheds. Of these, DM&E calculates that 10 will be subject to no adverse effects, in that the corridor may be visible from the site, but the qualities that contribute to their significance will not be diminished. Of the remaining 16, the DM&E calculates that the qualities that contribute to their significance will not be affected because the PRB Expansion Project rail corridor is positioned in the background of their viewsheds, or because intervening topography obstructs visibility of the PRB Expansion Project rail corridor altogether.

Table 4-1 provides a summary of the sites analyzed in South Dakota.

4.2 WYOMING SITES

Of the 39 historic properties identified by the Wyoming SHPO as situated within three miles of the New Build centerline in Wyoming, four are situated within the proposed ROW, and project effects to these are addressed through review of appropriate cultural resource survey reports for the PRB Expansion Project. Site 48CA0272 has not been observed or recorded, and is only suspected based on historic documents.

The remaining 34 historic properties are situated within a few hundred yards of the ROW to approximately three miles distant. The DM&E calculates that 19 will undergo no adverse effects, in that the PRB Expansion Project corridor may be visible from the site, but the qualities that

contribute to their significance will not be diminished. The DM&E calculates that 13 will not be affected because the PRB Expansion Project rail corridor is positioned in the background of their viewsheds, or because intervening topography obstructs visibility of the PRB Expansion Project rail corridor altogether. Finally, the DM&E calculates that two sites, 48CA2810 and 48CA3768, may be adversely affected by the visual intrusion of the PRB Expansion Project rail corridor. Site 48CA2810 is a series of small cairns and large stones in an alignment that may represent a prehistoric game drive line. The site was recorded on USFS-administered land in 1993, and the recorders speculate that it may be associated with 48CA2824 and 48CA211, forming a game drive complex. No subsequent documentation was provided that indicates the current condition of the site or the extent to which energy development in the area may have compromised the site's integrity of setting. If integrity of setting is a contributing characteristic of the property, the construction of the PRB Expansion Project rail corridor within ¼ mile of the site will diminish this characteristic. Additional consultation may be needed to resolve whether integrity of setting is a contributing quality and to consider treatment options.

Similarly, site 48CA3768 is a stone lined pit which may represent a prehistoric vision quest structure or eagle trap situated about ¼ mile from the PRB Expansion Project rail corridor on USFS-administered land. If integrity of setting is a contributing characteristic of the property, the PRB Expansion Project rail corridor would likely pose a visual intrusion that could diminish this characteristic. Consequently, the site should be revisited to ascertain whether the site's integrity of setting is a contributing characteristic and to assess whether any adverse effects may be minimized through treatment measures such as vegetative screening.

Table 4-2 provides a summary of the sites analyzed in Wyoming.

Table 4-1: South Dakota Cultural Resource Sites Analyzed for Visual Effects

Site Number	Eligibility (Criteria)	Ownership	Years Recorded	Description (Site Type)	Subsurface Testing (Positive/Negative/Not Applicable)	Site Condition & Prior Impacts	Integrity of Setting/ Relevance	Distance to Rail Corridor	Visibility (Not Visible/Fore-/ Middle/Background/ Unknown/In ROW)	Effect Recommendation (No Effect/No Adverse Effect/Adverse Effect)	Recommendation
39CU2938	Eligible	USFS	2001	Freeman Farmstead	Not Applicable	No disturbance noted	Does not apply	about 1 ¼ mile	Middle ground	No Adverse Effect	No further work
39CU2944	Eligible	USFS	2001	Dam	Not Applicable	None noted	Unknown	1/2 to 3/4 mile	Middle ground	No Adverse Effect	No further work
39CU2986	Eligible (D)	USFS	2001	Artifact Scatter	Not Applicable	None noted	Does not apply	~ 3 miles	not vis ble	No effect	No further work
39CU2987	Eligible (D)	USFS	2001	Artifact Scatter	Not Applicable	None noted	Does not apply	~ 3 miles	background	No effect	No further work
39CU3322	Eligible	USFS	2004	Clark Homestead	Not Applicable	Unknown	Does not apply	> 1 mile	not vis ble	No effect	No further work
39CU3619/ CU02500002, CU02500003, CU02500004	Eligible	Private	2007	Farm Structure	Not Applicable	None noted	Unl kely contribution	~ 3 miles	Background	No effect	No further work
39FA0065	Eligible (D)	BOR	1948	Ray Long Site	Not Applicable	Disturbed	Unknown	3 miles	not vis ble	No effect	No further work
39FA0277/ FA00200003	On Register (A)	Unknown	1980	Rock Art	Not Applicable	Unknown	Unknown	> 2 miles	not vis ble	No effect	No further work
39FA0395/ FA02000008	Eligible (C)	Private	Unknown	Structure	Not Applicable	sediment displacement; cracking of cliff face; severe weathering	Likely a contributing factor	> 4 miles	Background	No effect	No further work
39FA0446/ FA00200009	On Register	USFS		Rock Art	Not Applicable	Heavily weathered	Unknown	> 4 miles	Background	No effect	No further work
39FA0539	Eligible	Unknown	1989	Artifact Scatter	Not Applicable	None noted	Unl kely contribution	~ 2 miles	not vis ble	No effect	No further work
39FA0554/ FA00200014	On Register (A)	Unknown	1980	Rock Art	Not Applicable	Unknown	Unknown	~ 2 miles	not vis ble	No effect	No further work
39FA1032/ FA00200042	Eligible (C and D)	Private	Unknown	Rock Art	Not Applicable	Undisturbed	Erosion has compromised integrity	2 1/2 miles	Middle ground	No effect	No further work
39FA1303/ FA00200063	Eligible (D)	SD DOT	1994, 2003	Rock Art	Not Applicable	None noted	Unknown	~ 1 mile	not vis ble	No effect	No further work
39FA1336/ FA00200067	Eligible (D)	Private	2004	Rock Art	Not Applicable	None noted	Unknown	~ 2 miles	Middle ground	No Adverse Effect	No further work
39FA1337/ FA00200068	Eligible (D)	Private	1998	Rock Art/ Rock shelter	Not Applicable	semi-professionally excavated	possible contribution	> 1 mile	Middle ground	No effect	No further work
39FA1360/ FA01800002	Eligible (C)	Private	1999	Cistern/ artifact scatter	Positive	Railroad, service road, irrigation ditch	Unknown	In ROW	Crossed by rail corridor	Adverse	Effects addressed under separate cover
39FA1369/ FA00200064	Eligible (D)	Private	1999	Millstone	Not Applicable	Unknown	Non-contr buting	In ROW	Crossed by rail corridor	Adverse	Effects addressed under separate cover

Site Number	Eligibility (Criteria)	Ownership	Years Recorded	Description (Site Type)	Subsurface Testing (Positive/Negative/Not Applicable)	Site Condition & Prior Impacts	Integrity of Setting/ Relevance	Distance to Rail Corridor	Visibility (Not Visible/Fore-/ Middle/Background/ Unknown/In ROW)	Effect Recommendation (No Effect/No Adverse Effect/Adverse Effect)	Recommendation
39FA1413/ FA01900001/ FA0100002	Eligible (B) & (C)	Private	1999	Cistern	Not Applicable	deterioration and removal of structures	Unknown	In ROW	Crossed by rail corridor	Adverse	Effects addressed under separate cover
39FA1425/ FA02000002	Eligible	Private	1999	Historic dump	Not Applicable	Not Applicable	Not Applicable	In ROW	Foreground	Adverse	Effects addressed under separate cover
39FA1546	Eligible (A)	USFS	2001	Rock Art	Not Applicable	None noted	Unknown	1 1/2 miles	not vis ble	No effect	No further work
39FA1637/ FA00200066	Eligible (D)	Private	2004	Rock Art	Not Applicable	None noted	Unknown	~1 mile	Middle Ground	No Adverse Effect	No further work
39FA2000	Eligible	Private	1992	Railroad	Not Applicable	Unknown; part of a railroad abandonment project in 1987	Unknown	> 3/4 mile	Middle ground	No Adverse Effect	No further work
39FA2003	Eligible	Private	2000	Railroad	Not Applicable	severe degradation	Unknown	In ROW	Crossed by rail corridor	Adverse	Effects addressed under separate cover
39PN2003	Eligible	Private	Unknown	Railroad	Not Applicable	None noted	Unknown	In ROW	Crossed by rail corridor	Adverse	Effects addressed under separate cover
39PN2007	Eligible	Private	1999	Railroad	Not Applicable	rails and ties removed from the rail bed	Unknown	In ROW	Crossed by rail corridor	Adverse	Effects addressed under separate cover
CU00000050	Eligible	Private	1988	Edna & Ernest Young Ranch Historic District	Not Applicable	None noted	Likely a contributing factor	3 miles	not vis ble	No effect	No further work
FA00000071	Eligible (A and C)	Unknown	Unknown	Structure	Not Applicable	None noted	Unknown	~1 1/2 miles	Background	No Adverse Effect	No further work
FA00000081/ 00000114	Eligible (A)	Unknown	2006	Bridge	Not Applicable	Unknown	Unknown	2 miles	not vis ble	No effect	No further work
FA00000104	Eligible (C)	Private	2006	Structure	Not Applicable	altered storefront	Unknown	~1 1/2 miles	Middle ground	No Adverse Effect	No further work
FA00000111	Eligible (C)	Unknown	2006	Bridge	Not Applicable	Unknown	Not included as a qualifying characteristic	1/2 mile	Middle ground	No Adverse Effect	No further work
PN00000255	Eligible (C)	Unknown	Unknown	Bridge	Not Applicable	None noted	Unknown	~ 1 1/2 miles	Middle ground	No Adverse Effect	No further work
PN00000470	Eligible (C)	Private	Unknown	Structure	Not Applicable	None noted	Unknown	~ 1 mile	Middle ground	No Adverse Effect	No further work

Table 4-2: Wyoming Cultural Resource Sites Analyzed for Visual Effects

Site Number	Eligibility (Criteria)	Ownership	Years Recorded	Description (Site Type)	Subsurface Testing (Positive/Negative/Not Applicable)	Site Condition & Prior Impacts	Integrity of Setting/ Relevance	Distance to Rail Corridor	Visibility (Not Visible/Fore-/ Middle/Background/ Unknown/In ROW)	Effect Recommendation (No Effect/No Adverse Effect/Adverse Effect)	Recommendation
48CA0081	Elig ble	USFS	1976, 1981	Stone circle & open camp	Not Applicable	moderate disturbance	Unknown	~1 mile	Middle Ground	No Adverse Effect	No further work
48CA0200	Elig ble (D)	Private	1978, 1997	7 Stone circles, two rock-bordered hearths, and a 4 meter long alignment.	Negative	fair condition; disturbance from erosion and cattle grazing	Non-contributing	~2 miles	Not visible	No Effect	No further work
48CA0211	Elig ble (D)	USFS	N/A	Stone features	N/A	N/A	N/A	In ROW	In ROW	See Appropriate Report	Effects addressed under separate cover
48CA0272	Elig ble	BLM	1983	Sawyers Wagon Train Site	Not Applicable	unknown	Unknown	Unknown	Unknown	Absent confirmation that the site exists, visual effects to the site cannot be assessed.	Site has not been officially surveyed or recorded. Existence is unknown,
48CA0507	Eligible	BLM	1980	Historic Inscriptions	Negative	oil well center stake is located 350-400 ft SE of the site; friable sandstone matrix; wind erosion	oil drilling in the 1980's; several roads and two tracks within the vicinity	~1 mile	Middle Ground	No adverse effect	No further work
48CA0890	Elig ble	Unknown	1981	Stone circle	Not Applicable	good condition; well pad; access road	Unknown	~1 mile	Middle Ground	No Adverse Effect	No further work
48CA1307	Elig ble (D)	Unknown	1981	Stone Circles	Not Applicable	seismic work	Good	2 mile	Middle Ground	No Adverse Effect	No further work
48CA1414	Eligible	BLM	1981, 1991	Stone circles & alignment	Not Applicable	good condition; 3 roads and 2 two-tracks; well centerstake 528 ft from datum	Compromised	~1 mile	Middle Ground	No Adverse Effect	No further work
48CA1415	Eligible	Unknown	1981	Stone circles & alignment	Not Applicable	displaced ring rocks; rodent burrows; staked well pad 240ft N of site	Compromised	~1 mile	Middle Ground	No Adverse Effect	No further work
48CA1490	Elig ble	USFS	N/A	Stone circles & cairns	Not Applicable	N/A	N/A	In ROW	In ROW	See Appropriate Report	N/A
48CA1497	Elig ble (D)	Unknown	1981	Stone circles	Not Applicable	fair to poor condition overall; fair to good condition for some rings; extreme disturbance from sheep use; well pad access road within 100 ft of some rings	Compromised	~1 mile	Middle Ground	No adverse effect	No further work
48CA1667	NRHP Listed	State (WY)	1982	Stone circles & cairn	Not Applicable	pipeline construction impacts	Good	3 miles	Not visible	No Effect	No further work
48CA1686	Elig ble (D)	USFS	1982, 1997	Crouch Homestead	5 negative test units; 1 positive test unit	Poor condition; demolition and removal of structures	Integrity Compromised	~1 mile	Middle Ground	No Effect	No further work
48CA1707	Elig ble (D)	Unknown	1982	Stone circles	Not Applicable	Fair condition; erosion, moderate slopewash; two-track roads; pipeline construction	Compromised	~1/2 mile	Middle Ground	No Adverse Effect	No further work
48CA1711	Elig ble (D)	USFS	1982	Stone circle	Negative	Good condition; erosion; ETSI Pipeline Coal Slurry	None due to previous disturbances	within a few hundred meters	Foreground	No Effect	No further work

Site Number	Eligibility (Criteria)	Ownership	Years Recorded	Description (Site Type)	Subsurface Testing (Positive/Negative/Not Applicable)	Site Condition & Prior Impacts	Integrity of Setting/ Relevance	Distance to Rail Corridor	Visibility (Not Visible/Fore-/ Middle/Background/ Unknown/In ROW)	Effect Recommendation (No Effect/No Adverse Effect/Adverse Effect)	Recommendation
						Project					
48CA1728	Eligible (D)	USFS	1974, 1980, 1982	Stone circles	Negative	Fair condition; vehicular traffic; two-track road; pipeline; mining	Compromised	~1/2 mile	Middle Ground	No Adverse Effect	No further work
48CA1781	Eligible (D)	USFS	1982, 1997	Stone circles	Not Applicable	Poor condition; two-track road; wind and water erosion	Compromised	~2 miles	Middle Ground	No Adverse Effect	No further work
48CA1812/ 48CA0353	Eligible	Private	1982	Stone Circles & cairns	Not Applicable	Moderate sheetwash erosion	Unknown	~1 mile	Middle Ground	No Adverse Effect	No further work
48CA2020	Eligible (D)	Private	1983	Stone circles	Not Applicable	Good condition; existing railroad grade	Severely compromised	~1/4 mile	Foreground	No Effect	No further work
48CA2095	Eligible (D)	USFS	1984, 2000	Stone circles	Positive	erosion; grazing	Unknown	~1 mile	Not visible	No Effect	No further work
48CA2428	Eligible (D)	BLM	1987	Stone Circles	Not Applicable	Fair; erosion; deposition; ring dismantling; vehicle traffic	Unknown	~1 1/2 miles	Not visible	No Effect	No further work
48CA2657	Eligible (D)	USFS	1990	Stone Circles	Not Applicable	Fair condition; erosion and blading; powerline	Compromised	~1/2 mile	Middle Ground	No Adverse Effect	No further work
48CA2810	Eligible (D)	USFS	1993	Stone alignment/cairns	Negative	Good condition; erosion	Unknown	~1/8 mile	Foreground	Adverse Effect, if integrity of setting is relevant	Further work is needed
48CA2824	Eligible (D)	Private	1993	Cairn alignment & stone circle	Negative	Fair condition; erosion	Unknown	~1/4 mile	Middle Ground	No Adverse Effect	No further work
48CA3076	Eligible (D)	Private	1997	Stone circles & Lithic Scatter	Not Applicable	Good condition; erosion; grazing	Non-contributing	> 2 miles	Not Visible	No Effect	No further work
48CA3589	Eligible (D)	Private	1999	Stone features	Negative	erosion; grazing	Unknown	~ 1 1/2 miles	Middle Ground	No Adverse Effect	No further work
48CA3768	Eligible (D)	USFS	2000	Stone feature	Not Applicable	erosion; grazing	Unknown	~1/4 mile	Middle Ground	Adverse Effect	Further work is needed
48CA6115	Eligible (D)	Private	2006	Stone circles	Positive	erosion; grazing; mechanical excavations; two-track road	Unknown	~3/8 mile	Middle Ground	No Adverse Effect	No further work
48CA6116	Eligible (D)	Private	2006	Stone circles & cairns	Negative	no previous disturbance	Unknown	~1/2 mile	Middle Ground	No Adverse Effect	No further work
48CA6117	Eligible (D)	Private	2006	Stone circles	Positive	no previous disturbance	Non-contributing	3/4 mile to 1 mile	Middle Ground	No Effect	No further work
48CA6123	Eligible (D)	Private & USFS	N/A	Stone circles & hearths	Not Applicable	N/A	N/A	In ROW	In ROW	See Appropriate Report	Effects addressed under separate cover
48CA6216	Eligible	Unknown	2006	Stone Circles	Not Applicable	Unknown	Unknown	3 miles	Background	No Effect	No further work
48CA6704	Unevaluated	Private	N/A	Stone circle & cairn	N/A	N/A	N/A	In ROW	In ROW	See Appropriate Report	Effects addressed under separate cover
48CO0646	Eligible	Unknown	1981	Stone circles	Not Applicable	badly eroded	Unknown	2 mile	Not Visible	No Effect	No further work
48NO0293	NRHP Listed	County	1981	Bridge	Not Applicable	Moved	N/A	1 mile	Middle Ground	No Effect	No further work
48WE0259	Eligible	Private	1982	Stone circles and cairns	Positive	2 two-tracks, 2 pipelines, tank battery, vandalism	Compromised	> 1 3/4 miles	Middle Ground	No Adverse Effect	No further work

Site Number	Eligibility (Criteria)	Ownership	Years Recorded	Description (Site Type)	Subsurface Testing (Positive/Negative/Not Applicable)	Site Condition & Prior Impacts	Integrity of Setting/ Relevance	Distance to Rail Corridor	Visibility (Not Visible/Fore-/ Middle/Background/ Unknown/In ROW)	Effect Recommendation (No Effect/No Adverse Effect/Adverse Effect)	Recommendation
48WE0308	Unevaluated	USFS	1982 (2006, 2007-re-evaluated)	Stone circles and cairns	Not Applicable	Poor; erosion; pipeline	Unknown	~3/4 mile	Middle Ground	No Adverse Effect	No further work
48WE0316	Eligible	USFS	1982	Stone features	Positive (2 of 4 rings)	slight erosion; overgrazing	Unknown	~1 to 1 1/2 mile	Background	No Adverse Effect	No further work
48WE0366	Eligible	Private	19893	Stone Circles	Not Applicable	Good condition; some erosion; livestock activity	Unknown	~3 miles	Not visible	No Effect	No further work

5.0 CONCLUSION

The DM&E conducted a Line of Sight Analysis of 72 historic properties situated within three miles either side of the New Build Segment of the proposed PRB Expansion Project in South Dakota and Wyoming to assess the visual effects of the Project on these properties. Site descriptions and site forms were provided by the SHPOs of each state based on file search requests. Of the 72 historic properties, 11 are situated in the ROW and addressed in separate reports, and one was not adequately recorded to locate on a map. Of the remaining 60 historic properties, the results of this analysis indicate that the proposed PRB Expansion Project rail corridor will not affect the integrity of setting of 29 historic properties either because the distance to the proposed PRB Expansion Project rail corridor exceeds three miles or the intervening topography obstructs the visibility of the rail corridor. This study indicates that the PRB Expansion Project rail corridor will be visible at 29 historic property locations. However, considering distance, existing visual impacts and the qualities of integrity likely to apply to each property, this study concludes that the visual intrusion of the project will not adversely affect these properties through diminished integrity of setting. Consequently, DM&E recommends that 58 of the 60 historic properties will undergo either no adverse effect or no effect from visual intrusions of the PRB Expansion Project rail corridor, and should receive no further consideration for purposes of Section 106 review for the PRB Expansion Project.

DM&E recommends that two sites be further considered to determine whether they may be adversely affected by the PRB Expansion Project rail corridor. One site (48CA2810), which may exhibit integrity of setting as a contributing characteristic, may be adversely affected by the visual intrusion of the PRB Expansion Project. Recorded in 1993 as part of the Powder River Coal Company Class III CRI (Tract A), the site is situated on USFS-administered land. The site was recommended eligible under National Register Criterion D for its information potential. It consists of an alignment of small cairns and stones that may comprise part of a prehistoric game drive complex. The Line of Sight Analysis indicates that the integrity of the site's setting has been compromised by coal mine operations to the north. DM&E has determined the stone alignment will not be physically altered by the proposed rail corridor construction activities. However, the PRB Expansion Project rail corridor may visually intrude on the setting of this property in a manner that could diminish its already compromised setting. If integrity of setting is a contributing quality of the property, this intrusion could cause an adverse effect.

The other site (48CA3768) was recorded in 2000 as a stone lined pit with an associated biface fragment on USFS-administered land. The site was interpreted as a vision quest structure or eagle trap. The proximity of the PRB rail corridor to the site may impose a visual intrusion that could diminish its integrity of setting, and cause an adverse effect, assuming this quality contributes to its significance.

DM&E recommends a field examination of the two properties to confirm their continued existence. If these two sites continue to exist, and if STB in consultation with SHPO determines that integrity of setting is a contributing characteristic of their significance, the DM&E would expect that consultation among STB, SHPO, USFS, DM&E and tribes will proceed under a finding of adverse effect to determine what, if any, treatment options are available and appropriate for mitigating the visual intrusion of the proposed rail corridor on the properties' integrity of setting.

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APPENDIX A

Procedural Clarification for Assessing the Project's Direct and Indirect Impacts to Historic Properties

PROCEDURAL CLARIFICATION FOR ASSESSING THE PROJECT'S DIRECT AND INDIRECT IMPACTS TO HISTORIC PROPERTIES

Issue

The Surface Transportation Board (STB) and the Dakota, Minnesota and Eastern Railroad (DM&E) propose the following plan/clarification for assessing direct (ground disturbance) and indirect effects (noise, visual, vibration) of the project on properties listed on or eligible for listing on the National Register of Historic Places (National Register).

Indirect Effects

The Environmental Impact Statement (EIS) prepared by STB's Section of Environmental Analysis (SEA) for the DM&E Project included information regarding potential noise and vibration impacts to historic properties within the project area. In the Draft EIS, SEA determined that "structures within 100 feet of a new rail line of the type contemplated as part of this project could experience some damage by project-related vibration." In the Final EIS, however, SEA concluded that "...structures would likely need to be within 50 feet of the rail line to potentially be damaged by rail vibration (Final EIS, Volume 1, Chapter 3 at page 3-65)."

SEA also assessed potential audible impacts to the project area in the EIS. SEA concluded that audible impacts would not be adverse. However, STB included Conditions 86-96 in its 2006 Decision to assure that if noise levels increase due to increased haul tonnage levels, mitigation measures would be imposed to address any potential adverse effects including consultations with the appropriate State Historic Preservation Officer (SHPOs) for impacts that could affect historic properties. In Condition 95:¹

...Should noise mitigation be required at locations identified as containing structures that are potentially eligible for listing on the National Register of Historic Places, Applicant shall consult with the appropriate State Historic Preservation Officer to assess effects and implement appropriate mitigation measures...

The Wyoming (WY) and South Dakota (SD) SHPOs have requested that STB assess potential visual or audible adverse effects on historic properties extending three miles on either side of the construction corridor or New Build Segment. The WY SHPO asked that STB conduct a file search to locate all properties within the 6-mile corridor currently listed on the National Register while the SD SHPO requested an inventory of properties that are both listed and considered eligible for listing on the National Register. Preliminary site file searches conducted by DM&E indicate that approximately 35 sites are located within the six-mile corridor encompassing the New Build Segment in WY and SD.

¹ See 2006 Decision at page 39.

Recommendations

1. DM&E will analyze the results of its site file search to determine what qualities of each individual site contribute to its historic significance and what kinds of indirect impacts could potentially affect the integrity of each site. DM&E will also conduct an analysis to determine which of these sites is situated within the viewshed of the rail corridor and which may be visually or audibly adversely affected by the project.
2. DM&E will prepare a report consolidating the site file searches and viewshed analyses and provide it to STB for review and consideration in accordance with the terms of the Section 106 Programmatic Agreement (PA).
3. Depending on the results provided in the above report, DM&E recognizes that further consultation may be necessary under the terms of the PA to assess any adverse effects and discuss the development of treatment measures intended to avoid, minimize or mitigate such effects.

Construction Impacts/New Build - Direct Effects

DM&E has prepared detailed project maps showing the location of planned cut and fill activity within the construction right-of-way. DM&E provided examples of these maps in recent meetings it held with the SD and WY SHPOs. The SD SHPO suggested that information regarding project impacts and determination of effect could be submitted as a separate companion volume. The maps will be provided as part of that volume.

Recommendation

1. DM&E will prepare large-scale maps that show the construction ROW and the proximity of proposed cut & fill activity within the construction ROW to all historic properties. These maps will be provided to SHPOs following comment on STB's determinations of eligibility and as supporting information accompanying STB's determinations of adverse effect.

APPENDIX B

SOUTH DAKOTA – SITE FORMS

(see enclosed disk)

APPENDIX C
WYOMING – SITE FORMS

(see enclosed disk)