

5.7 Cultural Resources Impacts

This section describes the potential impact of implementing the alternative groups as previously stated in this HSW EIS on Hanford Site cultural resources, namely archaeological sites, archaeological features, artifacts, and historic buildings. In addition, several places in the vicinity of the 200 Areas have had, and continue to have, traditional roles in Native American creation beliefs and the cultural heritage of the Wanapum, the Confederated Tribes of the Umatilla Indian Reservation, the Nez Perce Tribe, and the Yakama Nation. These places include, but are not limited to, the Columbia River, Gable Mountain, Gable Butte, and Rattlesnake Mountain.

Archaeological surveys of all undeveloped portions of the 200 East Area and a random sample of 50 percent of undeveloped portions of the 200 West Area indicate no findings of archaeological sites. However, some small sites exist within the boundaries of the 200 East and 200 West Areas (Chatters and Cadoret 1990).

A prominent archaeological resource located in the 200 Areas is an extensive linear feature known as the White Bluffs Road, a portion of which passes diagonally southwest to northeast through the 200 West Area. The road in its entirety was determined eligible for listing in the National Register of Historic Places (National Register). Segments of the White Bluffs Road that are located in the 200 West Area, however, have been determined to be non-contributing. Such non-contributing segments of the White Bluffs Road are those that do not add to the historic significance of the road, but retain evidence of its contiguous bearing.

Originally used as a Native American trail, the White Bluffs Road played a role in Euro-American immigration, development, agricultural, and Hanford Site operations. The White Bluffs Road survey of 2000 recorded an additional 54 historic isolated artifacts and 2 prehistoric isolated finds, as well as 6 cans. In addition, 58 buildings and structures in the 200 East and 200 West Areas have been determined eligible for the National Register as contributing properties within the Historic District recommended for individual documentation (Neitzel 2001). Mitigation has been completed for these buildings and structures.

Previous archaeological investigations and historical research indicate that Native Americans used sites throughout the Cold Creek Valley, primarily near water sources, for campgrounds, ceremonial uses, plant gathering, hunting, and possibly the grazing of cattle and horses from the prehistoric period to 1943. Ethno-historic research suggests that Native American use of Area C was limited to travel through the vicinity to destinations along the Columbia and Yakima rivers. There is a possibility that Native American use of the area prior to Euro-American contact, even extending as far back as 10,000 years, occurred. If so, the archaeological remains associated with that area and time period likely have been buried by sand dune activity and wind blown deposition.

Both Native Americans and Euro-Americans used trails and roads, such as the White Bluffs Road, to the west and north of Area C. Research also indicates a well-used trail connected the Benson Ranch (on the western boundary of Area C) to Rattlesnake Springs. Historic maps show the Ellensburg to Yakima River Road passed through Rattlesnake Springs and traversed the central and southern sections of Area C

as early as 1881. A four-wheel drive dirt road in the northern section of Area C, parallel to Dry Creek, connected Cold Creek Valley with the city of Richland prior to the construction of State Route 240 through the Hanford Site. Historic occupations in the Cold Creek Valley seem to have been centered on sheep and cattle grazing and the raising of horses. Farmsteads have been identified west of Area C where irrigation water from Rattlesnake Springs allowed for the cultivation of alfalfa and grain.

For activities associated with this HSW EIS, cultural resources surveys have been conducted of Area C (borrow pit site); the T Plant Complex; the CWC and 218-W-5 LLBG expansion areas; the proposed ILAW disposal facility in the 200 East Area near the PUREX Plant; the melter trench in the 200 East and 200 West Areas; groundwater well installations in the 200 West Area; and lined modular facility locations in the 200 Area East, near the PUREX Plant, and at ERDF. Details are provided in Volume II, Appendix K, as are copies of consultation letters with the State of Washington Office of Archaeology and Historic Preservation.

Installation and operation of mobile accelerated process lines would be within the CWC buildings or near the TRU waste trenches and, based on surveys of those areas, there would appear to be no potential for impacts on cultural resources.

Because Area C is within the viewshed from Rattlesnake Mountain, the project might have an indirect effect on the characteristics that contribute to the cultural and religious significance of Rattlesnake Mountain to local tribes. Additional information on aesthetic and scenic impacts of these activities is presented in Section 5.12.

Section 5.18 provides information regarding the protection of cultural resources discovered during construction or operations.

5.7.1 Alternative Group A

The principal potential for impacts on cultural resources in Alternative Group A (Hanford Only, Lower Bound, and Upper Bound waste volumes) is associated with obtaining materials for the Modified RCRA Subtitle C Barrier to be placed over the disposal sites. This material, which includes basalt, sand, gravel, and silt/loam, would be obtained from a borrow pit in Area C, the location of which is shown in Volume II, Appendix D, Figure D.9. The borrow pit is within an area of about 926 ha (2287 ac), of which about 73 ha (180 ac) would be the maximum area excavated.

There is a reasonable likelihood that archaeological sites are located within Area C. However, any sites are likely to be buried, as the field reconnaissance failed to locate any on the surface. Little is known about the pre-contact use of the Cold Creek Valley; thus, any sites located there would provide an opportunity to gain new knowledge about prehistoric life. Further, if campsites or village sites were found, human remains and possibly cemeteries might also be located there.

Prior to construction activities associated with waste management operations, additional research as well as a 100-percent pedestrian archaeological survey would be needed to identify and address potential cultural impacts. Given the possibility for buried deposits, some methodology would likely be needed to

observe the subsurface. Depending upon conditions or circumstances, ground-penetrating radar, shovel testing, or backhoe testing might be appropriate, as would monitoring for cultural resources during construction. Frequency of monitoring may range from continuous to intermittent to periodic.

Modifications to the T Plant Complex are not expected to impact significant cultural resources. Any effects to T Plant have been mitigated through Historic American Engineering Record documentation and through historical narratives and individual building documentation compiled in *History of Plutonium Production Facilities at the Hanford Site Historic District, 1943-1990* (DOE-RL 2002a).

Cultural resources surveys of the proposed locations of the ILAW disposal facility, melter trench, and groundwater well installations in the 200 East and West Areas were conducted. The surveys concluded that the proposed locations in Alternative Group A would have no effect on historic properties in the 200 East and West Areas.

5.7.2 Alternative Group B

In Alternative Group B, the potential for impacts on cultural resources at the Area C borrow pit would be slightly greater than those for Alternative Group A, based on the area being disturbed in order to obtain the materials required for the Modified RCRA Subtitle C Barrier for the LLBGs.

In this alternative group, a new waste processing facility would be located directly west of WRAP in the 200 West Area. Previous cultural resources surveys conducted in the CWC expansion area concluded that no known historic properties or archaeological resources are located within the footprint of the new facility.

As in Alternative Group A, cultural resources surveys of the proposed locations of the ILAW disposal facility (and multiple lined trenches in the 200 West Area), melter trench, and groundwater well installations were conducted. The surveys concluded that the proposed locations in Alternative Group B would have no effect on historic properties in the 200 East and West Areas.

5.7.3 Alternative Group C

In Alternative Group C, the potential for impacts on cultural resources at the Area C borrow pit would be slightly less than those for Alternative Groups A and B, based on the area being disturbed in order to obtain the materials required for the Modified RCRA Subtitle C Barrier for the LLBGs.

In this alternative group, LLW would be located in the 200 West Area, MLLW would be located in the 200 East Area, and ILAW and the melter trench would be located near the PUREX Plant. Previous cultural resources surveys conducted in the CWC expansion area concluded that no known historic properties or archaeological resources are located within these areas.

As in Alternative Groups A and B, cultural resources surveys of the proposed locations of the ILAW disposal facility (and multiple lined trenches in the 200 West Area), melter trench, and groundwater well

installations were conducted. The surveys concluded that the proposed locations in Alternative Group C would have no effect on historic properties in the 200 East and West Areas.

5.7.4 Alternative Group D

This alternative group contains three subalternative groupings that depend on the location of disposal in a lined modular facility. D₁ would locate the disposal facility near the PUREX Plant, D₂ would locate the disposal facility in the 200 East LLBGs, and D₃ would locate the disposal facility at ERDF between the 200 East and 200 West areas.

In Alternative Group D, the potential for impacts on cultural resources at the Area C borrow pit would be slightly less than those for Alternative Groups A, B, and C, based on the area being disturbed in order to obtain the materials required for the Modified RCRA Subtitle C Barrier for the LLBGs.

As in Alternative Groups A, B, and C, cultural resources surveys of the proposed locations of the ILAW disposal facility (and multiple lined trenches in the 200 West Area), melter trench, and ground-water well installations were conducted. The surveys concluded that the proposed locations in this alternative group would have no effect on historic properties in the 200 East and West Areas, as well as at ERDF, as called out in Alternative Group D₃.

5.7.5 Alternative Group E

This alternative group contains three subalternative groupings that depend on the location of disposal in lined modular facilities. E₁ would locate the LLW and MLLW disposal facilities in the 200 East LLBGs and the melters and ILAW at ERDF, E₂ would locate the LLW and MLLW disposal facilities near the PUREX Plant and the melters and ILAW at ERDF, and E₃ would locate the LLW and MLLW disposal facilities at ERDF and the melters and ILAW near the PUREX Plant.

In Alternative Group E, the potential for impacts on cultural resources at the Area C borrow pit would be the same as those for Alternative Group D and slightly less than the potential for impacts for Alternative Groups A, B, and C, based on the area being disturbed in order to obtain the materials required for the Modified RCRA Subtitle C Barrier for the LLBGs.

As in Alternative Groups A, B, C, and D, cultural resources surveys of the proposed locations of the ILAW disposal facility (and multiple lined trenches in the 200 West Area), melter trench, and ground-water well installations were conducted. The surveys concluded that the proposed locations in this alternative would have no effect to historic properties in the 200 East and West Areas, as well as at ERDF, as called out for in Alternative Group D₃, and the other subalternatives in this grouping.

5.7.6 No Action Alternative

The No Action Alternative consists essentially of the continuation of current solid waste management practices.

In the No Action Alternative, materials would only be needed for a Modified RCRA Subtitle C Barrier over the two existing MLLW trenches in the 200 West Area and the Hanford Barrier over ILAW near the PUREX Plant at closure. Thus the amount of material required from the borrow pit would be substantially smaller than that for action alternative groups. Regardless, the same approach would be necessary to protect presently undisclosed cultural resources in the Area C borrow pit.

In addition, the CWC would be expanded to store MLLW and TRU waste that could not be treated or disposed of elsewhere. About 36 ha (89 ac) directly south of the existing CWC buildings would be needed, as would about 30 ha (74 ac) in the 218-W-5 Expansion Area just to the west of the CWC. Staff of the Hanford Cultural Resources Laboratory conducted a records and literature search that revealed the CWC expansion area has been previously surveyed for cultural resources. The cultural resources surveys concluded that no known historic properties or archaeological resources are located within the CWC expansion area.