

5.7 Cultural Resources Impacts

This section describes the potential impact of implementing the alternatives 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, 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 Area and 200 West Area (Chatters and Cadoret 1990).

The most significant 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,

1 connected Cold Creek Valley with the city of Richland prior to the construction of State Route 240
2 through the Hanford Site. Historic occupations in the Cold Creek Valley seem to have been centered on
3 sheep and cattle grazing and the raising of horses. Farmsteads have been identified west of Area C where
4 irrigation water from Rattlesnake Springs allowed for the cultivation of alfalfa and grain.
5

6 For activities associated with this HSW EIS, cultural resources surveys have been conducted of
7 Area C (borrow pit site); the T Plant Complex; the CWC and 218-W-5 LLBG expansion areas; the
8 proposed ILAW disposal facility in the 200 East Area near the PUREX Plant; melter trench in the
9 200 East and 200 West Areas; groundwater well installations in the 200 West Area; and lined modular
10 facility locations in the 200 Area East, near the PUREX Plant, and at ERDF. Details are provided in
11 Appendix K, as are copies of consultation letters with the State of Washington Office of Archaeology and
12 Historic Preservation.
13

14 Because Area C is within the viewshed from Rattlesnake Mountain, the project might have an indirect
15 effect on the characteristics that contribute to the cultural and religious significance of Rattlesnake
16 Mountain to local tribes. Additional information on aesthetic and scenic impacts of these activities is
17 presented in Section 5.12.
18

19 Section 5.18 provides information regarding the protection of cultural resources discovered during
20 construction or operations.
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22 **5.7.1 Alternative Group A**

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24 The principal potential for impacts on cultural resources in Alternative Group A (Hanford Only
25 through the Upper Bound waste volume) is associated with obtaining materials for the modified RCRA
26 Subtitle C barrier to be placed over the disposal sites. This material, which includes basalt, sand, gravel,
27 and silt/loam, would be obtained from a borrow pit in Area C, the location of which is shown in
28 Appendix D, Figure D.9. The borrow pit is within an area of about 926 ha (2287 ac), of which about
29 73 ha (180 ac) would be the maximum area excavated.
30

31 There is a reasonable likelihood that archaeological sites are located within Area C. However, any
32 sites are likely to be buried, as the field reconnaissance failed to locate any on the surface. Little is known
33 about the pre-contact use of the Cold Creek Valley; thus, any sites located there would provide an
34 opportunity to gain new knowledge about prehistoric life. Further, if campsites or village sites were
35 found, human remains and possibly cemeteries might also be located there.
36

37 Prior to construction activities associated with waste management operations, additional research as
38 well as a 100-percent pedestrian archaeological survey would be needed to address potential cultural
39 impacts. Given the possibility for buried deposits, some methodology would likely be needed to observe
40 the subsurface. Depending upon conditions or circumstances, ground-penetrating radar, shovel testing, or
41 backhoe testing might be appropriate, as would monitoring for cultural resources during construction.
42 Frequency of monitoring may range from continuous to intermittent to periodic.
43

1 Modifications to T Plant are not expected to impact significant cultural resources. Due to the historic
2 significance of T Plant, additional cultural resources reviews and surveys may be required. Any effects to
3 T Plant have been mitigated through Historic American Engineering Record documentation and through
4 historical narratives and individual building documentation compiled in *History of Plutonium Production*
5 *Facilities at the Hanford Site Historic District, 1943-1990* (DOE-RL 2002b).
6

7 Cultural resources surveys of the proposed locations of the ILAW disposal facility, melter trench, and
8 groundwater well installations in the 200 East and West Areas were conducted. The surveys concluded
9 that the proposed locations in Alternative Group A would have no effect on historic properties in the
10 200 East and West Areas.
11

12 **5.7.2 Alternative Group B**

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14 In Alternative Group B, the potential for impacts on cultural resources at the Area C borrow pit would
15 be slightly greater than for Alternative Group A, based on the area disturbed to obtain the materials
16 required for the modified RCRA Subtitle C barrier for the LLBGs.
17

18 In this alternative, a new waste processing facility would be located directly west of WRAP in the
19 200 West Area. Previous cultural resources surveys conducted in the CWC expansion area concluded
20 that no known historic properties or archaeological resources are located within the footprint of the new
21 facility.
22

23 As in Alternative Group A, cultural resources surveys of the proposed locations of the ILAW disposal
24 facility (and multiple lined trenches in the 200 West Area), melter trench, and groundwater well
25 installations were conducted. The surveys concluded that the proposed locations in Alternative Group B
26 would have no effect on historic properties in the 200 East and West Areas.
27

28 **5.7.3 Alternative Group C**

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30 In Alternative Group C, the potential for impacts on cultural resources at the Area C borrow pit would
31 be slightly less than for Alternative Groups A and B, based on the area disturbed to obtain the materials
32 required for the modified RCRA Subtitle C barrier for the LLBGs.
33

34 In this alternative, LLW located in the 200 West Area. MLLW would be located in the 200 East Area.
35 ILAW and the melter trench would be located near the PUREX Plant. Previous cultural resources
36 surveys conducted in the CWC expansion area concluded that no known historic properties or
37 archaeological resources are located within these areas.
38

39 As in Alternative Groups A and B, cultural resources surveys of the proposed locations of the ILAW
40 disposal facility (and multiple lined trenches in the 200 West Area), melter trench, and groundwater well
41 installations were conducted. The surveys concluded that the proposed locations in Alternative Group C
42 would have no effect on historic properties in the 200 East and West Areas.
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1 **5.7.4 Alternative Group D**

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3 This alternative contains three sub-alternative groupings that depend on the location of disposal in a
4 lined modular facility. D₁ would locate the disposal facility near the PUREX Plant, D₂ would locate the
5 disposal facility in the 200 East LLBGs, and D₃ would locate the disposal facility at ERDF between the
6 200 East and 200 West areas.
7

8 In Alternative Group D, the potential for impacts on cultural resources at the Area C borrow pit
9 would be slightly less than for Alternative Groups A, B, and C based on the area disturbed to obtain the
10 materials required for the modified RCRA Subtitle C barrier for the LLBGs.
11

12 As in Alternative Groups A, B, and C, cultural resources surveys of the proposed locations of the
13 ILAW disposal facility (and multiple lined trenches in the 200 West Area), melter trench, and
14 groundwater well installations were conducted. The surveys concluded that the proposed locations in this
15 alternative group would have no effect on historic properties in the 200 East and West Areas, as well as
16 ERDF, as called out in Alternative Group D₃.
17

18 **5.7.5 Alternative Group E**

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20 This alternative contains three sub-alternative groupings that depend on the location of disposal in
21 lined modular facilities. E₁ would locate the LLW and MLLW disposal facilities in the 200 East LLBGs
22 and the melters and ILAW at ERDF, E₂ would locate the LLW and MLLW disposal facilities near the
23 PUREX Plant and the melters and ILAW at ERDF, and E₃ would locate the LLW and MLLW disposal
24 facilities at ERDF and the melters and ILAW near the PUREX Plant.
25

26 In Alternative Group E, the potential for impacts on cultural resources at the Area C borrow pit would
27 be the same as Alternative Group D and slightly less than the potential for impacts for Alternative Groups
28 A, B, and C based on the area disturbed to obtain the materials required for the modified RCRA Subtitle
29 C barrier for the LLBGs.
30

31 As in Alternative Groups A, B, C, and D, cultural resources surveys of the proposed locations of the
32 ILAW disposal facility (and multiple lined trenches in the 200 West Area), melter trench, and
33 groundwater well installations were conducted. The surveys concluded that the proposed locations in this
34 alternative would have no effect to historic properties in 200 East and West Areas, as well as ERDF as
35 called out for in D₃ and all the sub-alternatives in this grouping.
36

37 **5.7.6 No Action Alternative**

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39 This No Action Alternative consists essentially of the continuation of current solid waste management
40 practices.
41

42 In this No Action Alternative, materials would only be needed for a modified RCRA Subtitle C
43 barrier over the two existing MLLW trenches in the 200 West Area and the Hanford barrier over ILAW
44 near the PUREX Plant at closure. Thus the amount of material required from the borrow pit would be

1 substantially smaller than for all the above proposed alternatives. Regardless, the same approach would
2 be necessary to protect presently undisclosed cultural resources in the Area C borrow pit.
3

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