

CULTURAL RESOURCES REPORT FOR THE 100-HR-3 RESOURCE PROCESS OPTIMIZATION WELLS PROJECT, BENTON COUNTY, WASHINGTON

HCRC #2010-100-007

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788



CH2MHILL
Plateau Remediation Company

P.O. Box 1600
Richland, Washington 99352

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Release Approval

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CULTURAL RESOURCES REPORT COVER SHEET

Author: James J. Sharpe, M.S.

Title of Report: CULTURAL RESOURCES REPORT FOR THE 100-HR-3 RESOURCE PROCESS OPTIMIZATION WELLS PROJECT, BENTON COUNTY, WASHINGTON (HCRC#2010-100-007).

Date of Report: January 2010

County: Benton Section: 12, 13 and 14 Township: 14N Range: 26E
Section: 18 Township: 14N Range: 27E

Quads: Coyote Rapids and Locke Island Acres: 15

PDF of report submitted (REQUIRED) Yes

Historic Property Export Files submitted? Yes No

Archaeological Site(s)/Isolate(s) Found or Amended? Yes No

TCP(s) found? Yes No

Replace a draft? Yes No

Satisfy a DAHP Archaeological Excavation Permit requirement? Yes # No

DAHP Archaeological Site #:
45BN1555

- Submission of paper copy is required.
- Please submit paper copies of reports ***unbound***.
- Submission of PDFs is required.
- Please be sure that any PDF submitted to DAHP has its cover sheet, figures, graphics, appendices, attachments, correspondence, etc., compiled into one

Executive Summary

This cultural resources investigation report was prepared for the 100-HR-3 Resource Process Optimization Wells Project (HCRC#2010-100-007). A literature review and archaeological field investigation were conducted for the proposed project. The literature review identified no cultural resources within the project area. The archaeological survey resulted in recording one historic motor oil can site (45BN1555) within the project Area of Potential Effect. The site was recommended not eligible for listing to the National Register of Historic Places. Overall, the project area has a potential for historic cultural resources from the historic pre-Hanford agricultural activities that occurred near the project area. Based on the findings from the literature review and archaeological survey, the U.S. Department of Energy, Richland Operations Office determined that no historic properties would be affected by this project, and recommends a project determination of No Effect under Section 106 of the National Historic Preservation Act (NHPA). This report details the research, methodology, fieldwork, and findings of the cultural resource component of the project. This report fulfills the requirements of the National Historic Preservation Act of 1966, Section 106¹.

¹ *National Historic Preservation Act of 1966*, 16 USC 470, et seq. Available at: <http://www.achp.gov/NHPA.pdf>.

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Terms

APE	Area of Potential Effect
CRF	Code of Federal Regulations
NHPA	National Historic Preservation Area

1 Introduction

This cultural resources report was prepared for the 100-HR-3 Resource Process Optimization Wells Project (HCRC#2010-100-007). This cultural resources report includes the project background, location, environmental and cultural settings, and information from the literature review, field investigation, findings, and recommendations. This report contains information for the cultural resources component of the project to fulfill the requirements of Section 106 of the *National Historic Preservation Act (NHPA)* of 1996, as amended, and its implementing regulations, 36 *Code of Federal Regulations (CFR)* 800.

1.1 Project Background

This report was prepared for the 100-HR-3 Resource Process Optimization Wells Project located between the D and H Reactor areas that will include 15 wells and well pads and access roads (Figures 1-1 and 1-2). Each well pad will be approximately 30 m by 30 m (100 by 100 feet). Ground disturbance associated with the construction of the well pads will be limited to shallow blading to remove uneven surfaces; however, to the extent possible, all well pads will be constructed on the existing surfaces. Access roads will be graveled and approximately 4.6 m (15 feet) wide. Gravel will be placed on the existing surfaces. Some shallow blading may occur to remove uneven surfaces. Piping will be installed on the ground surface and extend from the wells to the nearest associated pump-and-treat building. The location of the pump-and-treat building is currently in the design stage and may be located at an existing building at the H-Area or a new building or both. Some pipe supports may be used to anchor the pipes. The components of this project will support the expansion of the 100-HR-3 pump-and-treat system.

1.2 Project Location

The project area is in Benton County, Washington, in Sections 12, 13, and 14, Township 14 North, Range 26 East, and Section 18, Township 14 North, Range 27 East. The Area of Potential Effect (APE) is confined to 15 well pads (C7595, C7596, C7586, C7588, C7609, C7610, C7604, C7606, C7581, C7584, C7585, C7605, C7587, C7597, and C7598) and access roads (Figure 1-2).

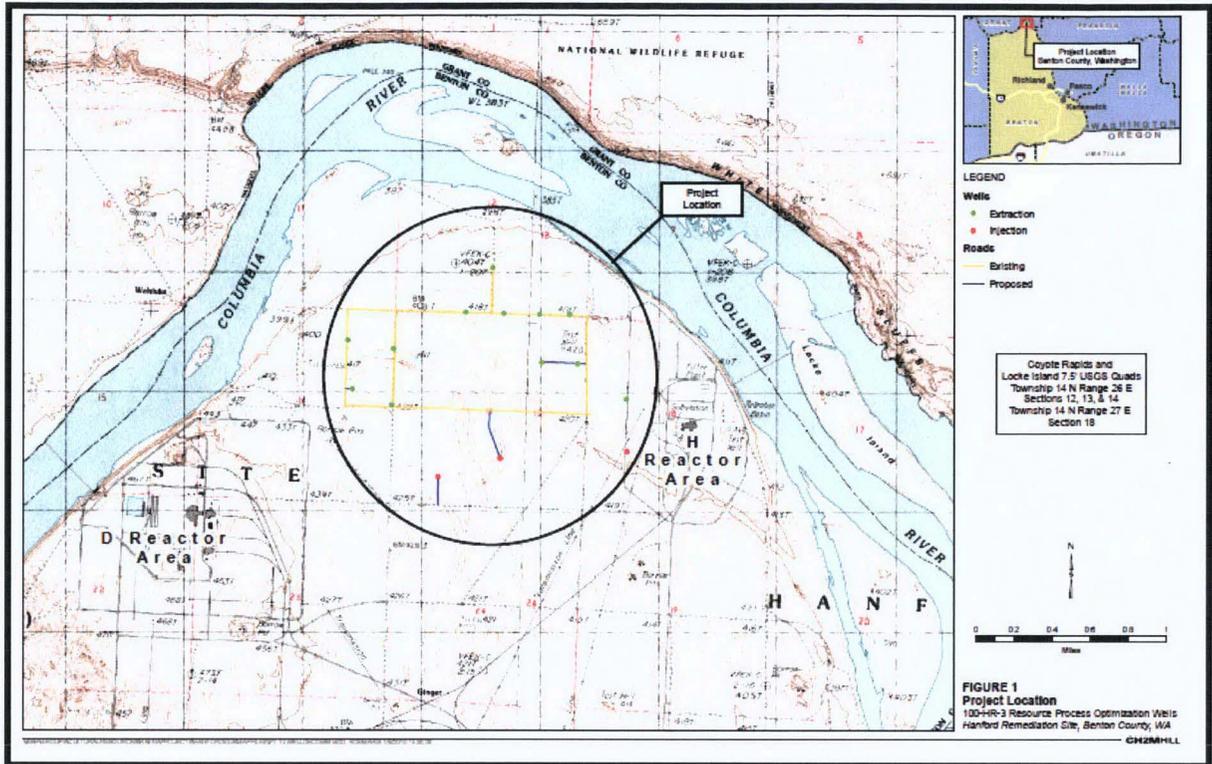


Figure 1-1. Project Location



Figure 1-2. Area of Potential Effect

2 Environmental Setting

The project area is located in the Columbia Plateau region. The Columbia Plateau covers approximately 259,000 square miles and is bordered on the east by the Northern Rocky Mountains and west by the Sierra Nevada–Cascade region (*Encyclopaedia Britannica*, 2010). The Columbia Plateau is an arid sagebrush steppe and grassland surrounded on the north, west, and east by moister, predominantly forested, mountainous ecological regions. The Plateau consists of arid tablelands, intermountain basins, dissected lava plains, and widely scattered low mountains. The central portion of the Plateau is often referred to as the Columbia Basin, as it forms a broad, saucer-shaped lowland. The Columbia Basin is divided into several sub-basins. One of these sub-basins, the Pasco Basin, is the location of the Hanford Site.

The geology of the Hanford Site is the result of flood basalts, fluvial/lacustrine, and glacial flood activities. The area contains a mixture of Miocene flood basalts contained within the mountain ranges of the Cascades, Blues, and Rockies. Individual flows within the flood basalts include the Imnaha, Picture Gorge, Grand Ronde, Wanapum, and Saddle Mountain. These basalts originated in north-central and northeastern Oregon, eastern Washington, and western Idaho. Interbedded in some of these basalt flows are sedimentary deposits of the Ellensburg Formation. The basalt and sedimentary rocks are exposed on the structural ridges bounding the sub-basins and, to a limited extent, outcrops in the central portion of some sub-basins. Over time, the basalt uplifted, causing rivers to down-cut, confining them to relatively narrow channels (Wakeley et al., 1998).

These rocks are overlain by younger sedimentary rocks of the Ringold Formation and Hanford (informal) formation. The Ringold Formation is a Mio-Pliocene sequence of river and lake deposits with local extensive paleosols deposited by the ancestral Columbia River and its tributaries in response to the development of the Yakima Fold Belt. During this period, sediments from the surrounding uplands were deposited in the lowland areas. One of the best examples of this formation is White Bluffs. The Hanford formation was deposited on the Ringold Formation during the Pleistocene by cataclysmic flood deposits from periodic inundation of south-central Washington by proglacial floodwaters. This formation includes a variety of materials that range from pebble- to boulder-size gravels, coarse-grained sand, and silt (WHC-EP-0554, *Vascular Plants of the Hanford Site*).

During the Pleistocene, continental glaciers advanced and retreated from British Columbia into northern Washington State. The advances and retreats created ice dams and glacial lakes that caused extensive flooding. The most noted flooding for the project area was caused by the release of glacial meltwater from Lake Missoula (RHO-BW-SA-318 P, *Paleodrainage of the Columbia River on the Columbia Plateau of Washington State: A Summary*). It is believed that the last major Pleistocene flood occurred about 13,000 years ago.

The climate of the area is one of the driest in the region with hot, dry summers and cool, moderately damp winters. The post-glacial climate, determined from pollen records, indicates that from 13,000 to 9,000 years before present (B.P.), climatic conditions were cooler and moister than today. This climatic pattern began to change after 9,000 B.P. to warmer and drier conditions that reached its apex about 4,400 B.P. From about 4,400 B.P. to around 2,500 B.P., the climate was cool and wet. Climatic conditions from 2,500 B. P. to the present appear to be somewhat warmer and drier than the previous phase and generally reflect current conditions (Bruce et al., 2001).

At the present time, vegetation on the Hanford Site is consistent with the low-rainfall, semi-arid landscape. Vegetation includes a variety of shrub-steppe species such as bluegrass (*Poa* sp.), bitterbrush (*Purshia tridentata*), buckwheat (*Eriogonum* sp.), cheatgrass (*Bromus tectorum*), rabbitbrush (*Chrysothamnus* sp.), sagebrush (*Artemisia* sp.), Sandberg's bluegrass (*Poa sandbergii*), spiny hopsage (*Grayia spinosa*), and wheatgrass (*Agropyron* sp.) (WHC-EP-0554).

A relatively flat topography dominates the project area. Soils consisting of windblown sand dominate the landscape. The soils are composed of sand-dominated faces of the Hanford formation that consist of medium- to fine-grained sediments interbedded with coarse-grained, poorly sorted sand (PNNL-14948, *Plume Delineation in the BC Cribs and Trenches Area*).

2.1 Cultural Setting

2.1.1 Columbia Plateau/Mid-Columbia Basin Pre-Contact Cultural Sequence

Archaeological investigations conducted in the Columbia Plateau have enabled the creation of a cultural chronology dating back to the end of the Pleistocene. The following chronologies provide a summary of cultural sequences for the area.

2.1.2 Windust Phase (11,000-8,000 B. P.)

The Windust Phase represents the oldest known Paleo-Indian culture in the Columbia Plateau region. Although archaeological evidence is limited, it is believed the people of this period were highly mobile hunters and foragers. The food source was primarily large mammals, supplemented with small mammals and fish. Population numbers were low. Living areas are believed to have been in rock shelters and caves. No evidence of constructed dwellings or storage features exists to further support the theory of a highly mobile culture.

Projectile point styles include Windust, Clovis, Folsom, and Scottsbluff, which were generally contracting stemmed points and/or lanceolate points (Bruce et al., 2001). Other tools include the use of cobble tools, scrapers, graters and burins, hammerstones, grooved stones, utilized flakes, bone awls, ocher beads, and antler wedges.

Windust sites are relatively rare; several have been located in the Columbia Plateau region that include the Marmes Rockshelter, Bernard Creek, Lind Coulee, Kirkwood Bar, Deep Gully, Granite Point, Fivemile Rapids, and Bobs Point (Walker, 1998).

Supporting evidence of a Paleo-Indian culture on the Hanford Reach was discovered in 2001 when a Windust-style projectile point was discovered near the K-Reactor Area (BHI-01556, *Archaeological Excavation Report for Extraction Well C3662 in Support of the 100 KR 4 Pump and Treat Project*). This projectile point is the oldest known Paleo-Indian point discovered to date at the Hanford Site.

2.1.3 Mid-Columbia Area Sequence

Upriver cultural chronologies most often referenced for the Hanford Reach originated from archaeological work initially conducted by Earl Swanson (1962) and later expanded by Charles Nelson (1969) from the work conducted at the Sunset Creek Site in the late 1950s and early 1960s. From collected data, Nelson established five cultural phases for the Vantage area. Over the years, other researchers have continued to develop the cultural chronologies. These phases are summarized as follows.

2.1.3.1 Cascade/Vantage Phase (8,000 to 4,500 B.P.)

Characteristics of this phase include leaf-shaped Cascade projectile points, stemmed projectile points, ovate knives, edge ground cobble tools, microblades, hammerstones, core tools, and scrapers. Many of these sites are found in association with Mazama ash that has been dated to 6,700 B.P. It is believed that people of this period were mobile, opportunistic foragers that relied in part on fish, mussel shell, seeds, and animals. Generally, Vantage Phase sites are located at the confluence of major rivers and their tributaries, near intersections of larger side canyons, and along rapids (Galm et al., 1981).

2.1.3.2 Frenchman Springs Phase (4,500 to 2,500 B.P.)

The archaeological record suggests people of the Frenchman Springs Phase were more dependent than their predecessors on the use of natural resources from upland areas. The people from this period also shifted from tools manufactured from fine-grained basalt to cryptocrystalline silicas and petrified wood, probably the result of increased upland exploitation. It was during this period that a shift from chipped stone to ground stone and cobble implements occurred.

Mortars and pestles were first used during this period, suggesting increased reliance on seeds and roots. The artifact assemblage includes several projectile point styles, contracting stemmed, corner notched, and stemmed, and hopper mortar bases and pestles, knives, scrapers, and graters. Semi-subterranean house pits were in use during this period, however, not at every location. Research suggests there were both mobile and sedentary foragers with an increased reliance on upland resources (Benson et al., 1989; Thoms et al., 1983).

2.1.3.3 Cayuse Phase (2,500 to 250 B.P.)

The Cayuse Phase dates from about 2,500 B.P. to around 250 B.P. and contains three subphases with different, yet similar, characteristics. Not all researchers agree on the three subphases, but instead prefer to consider the Cayuse Phase as a single phase.

2.1.3.4 Cayuse I Phase (2,500 to 1,200 B.P.)

The Cayuse I Phase represents the dominant cultural sequence of site types along the Columbia River. Pithouses characterize this phase. The pithouses had level floors and vertical walls with step-like benches and basal-notched and corner-notched projectile points were used. The majority of the projectile points are corner notched.

2.1.3.5 Cayuse II Phase (1,200 to 900 B.P.)

The Cayuse II Phase differs only slightly from the earlier phase in that it contains a different pithouse design. These pithouses lack the wall benches that characterize the previous phase. Projectile points remain very similar.

2.1.3.6 Cayuse III Phase (900 to 250 B.P.)

Typology characteristics of this phase include long projectile points that are narrow overall, with straight sides, acute tips, thin lenticular cross sections, wide side notches near the base, and well-controlled pressure flaking (Green, 1975). During this period, there is a decrease in the number of corner-notched projectile points and an increase in stemmed and side-notched points. An increase in the number of trade goods is also present during this period.

In general, the Cayuse Phase contained well-developed ground stone technologies, small corner-notched and side-notched projectile points, scrapers, lanceolate and pentagonal knives, net weights, pestles, grinding stones, hopper mortars, and cobble implements (Galm et al., 1981). It was during the Cayuse period that populations increased their reliance on fish and root collecting and reduced their reliance on

hunting (Thoms et al., 1983). Horses were introduced about 1730, increasing the hunting and transportation capabilities. The Cayuse III Phase was also the period with the largest pre-contact populations.

2.1.4 Overview of the Pre-Contact Settlement of the Hanford Reach

In general, archaeological sites on the Hanford Reach tend to be on the alluvial flats and lower terraces near the shorelines and islands of the Columbia River. Shoreline sites are generally long and narrow parallel to the river (Rice, 1980). Inland sites have been discovered on Gable Butte, Rattlesnake Mountain, and near the few isolated springs. As a result of the unique geomorphology of the area, rock shelters or mesa sites are not often found in both upriver and downriver regions of the Columbia River.

Prehistoric settlement patterns and seasonal rounds in this section of the Columbia Basin were associated with non-agricultural practices that included fishing, upland root gathering, and hunting. Archaeological evidence suggests that pre-contact settlement patterns consisted of consolidated winter villages and dispersed summer camps. Winter villages consisted of long tule mat lodges placed in shallow, bermed pits. Summer camps were associated with seasonal procurement strategies (Benson et al., 1989).

Long-term prehistoric settlement sites (winter) tend to have pithouses and tool assemblages used for stone tool manufacture and plant and animal preparation. In contrast, short-term seasonal use sites have no pithouses; however they contain artifacts similar to long-term use sites (Green, 1975). Rice reported in 1980 that 53 percent of the recorded archaeological sites along the Hanford Reach were open camps, 26 percent were fishing stations, and 14 percent were open camps with housepits. Rice's findings revealed that seasonal use of the area centered on the fall fish migrations and winter villages (Rice, 1980).

Seasonal rounds began in the spring with the maturing of plants in the lowland areas and gradually moved to the higher elevations as plant maturation continued into the early fall. Fishing continued from April until September. Hunting was undertaken in the winter months. Collected food reserves were stored for later winter consumption when plant and fish supplies were the lowest of the year.

Archaeological evidence indicates the west bank (facing downriver right) of the Columbia River contains greater concentrations of sites than the east bank (left), probably due to several factors. Overall, the west bank contains greater numbers of ephemeral drainage channels with more desirable areas for food sources, storage, shelter, water, and travel. The west bank is logistically closer to a more diverse supply of upland resources. Water may have also been a consideration of upland sites. Upland sites on the west side of the Columbia River contain more inland springs and ephemeral streams than do the upland areas east of the river.

Archaeologists have established generalizations for prehistoric sites that include village camps (winter residence), open camps (seasonal residence), upland sites (seasonal residence), burials, and lithics (flaking location).

2.1.5 Ethno-Historic Period

Historical information indicates that the Sahaptin-speaking Wanapum people occupied the region of the Columbia River between the Wenatchee and Snake Rivers. Pre-contact population numbers were estimated to be as high as 10,000 prior to the beginning of the 1800s. By the early to middle 1800s, several epidemics reduced the population to a fraction of their original size.

The Hanford Reach was the seasonal home to a large group of Native Americans prior to the arrival of the Euro-Americans. These groups include the Columbia, Nespelem, Sanpoil, Southern Okanogan, Umatilla, Walula, Wanapum, Wauykma, and Yakama. Nearby groups also occasionally used the area that included the Cayuse, Chelan, Colville, Kittitas, Lower, Middle, and Upper Spokane, Methow, Nez Perce, Palus,

Wayampum, Wenatchi, and Wishram (Andrefsky et al., 1996). Vern Ray referred to the Kittitas, Yakamas, Wayampama, and Wanapum as Northwestern Sahaptins and the Cayuse, Palus, Walula, Umatillas, and the Northeastern Sahaptins (Ray, 1936). These groups continued to use the area until the non-Native Americans created treaties that relocated most of the indigenous people to reservations.

In the mid-1800s, a large group of indigenous people lived at Priest Rapids, referred to by early traders as Priest's Rapids People. This group was later referred to as Wanapum, believed to mean "distant" or "people at the end" or "extremity" (Teit, 1928). Below Priest Rapids, the Wanapum resided at 15 different village locations. Randomly scattered between these village sites along this portion of the Columbia River were areas where small family groups also resided and places where food was cached (Relander, 1956).

The Wanapum year was divided into six seasons, beginning in the winter months and based on the maturation of plants, the arrival of animals utilized in the seasonal rounds, and the end of winter (Relander, 1956). Generally, the Wanapums wintered along the shoreline of the Columbia River, relying on stored foods collected during the yearly seasonal rounds. Seasonal rounds consisted of collecting roots as they matured to desirable stages of growth, advancing to higher elevations throughout the growing season. Plant collecting began in the low elevations in the spring and culminated each year in the upland areas near the end of the summer and early fall months. Midsummer was a time of hunting large and small game with seasonal camps near the foothills. By fall, they would return to the river to pursue the fall fish migrations and prepare for the upcoming winter (Rice, 1980).

2.1.6 Euro-American Period

The Lewis and Clark expedition of 1805 was the initial group of explorers/traders into the lower portion of the Hanford Reach. Their travels began the exploration and subsequent settlement of the region. The explorers sought trade items from the Native Americans and trade routes for traded goods. They were later followed by gold miners, livestock producers, and homesteaders.

By the 1860s, the discovery of gold to the north and east of the mid-Columbia region and, to a lesser extent, along the Hanford Reach resulted in a large influx of miners traveling through the region on their way to the gold fields. Several locations along the Hanford Reach such as Ringold, White Bluffs, and Wahluke were part of the transportation routes used by miners and support industry. Numerous locations believed to be gold mining features created by Euro-American and Chinese remain along the shoreline of the Hanford Reach (BHI-01326, *Pre-Hanford Agricultural History: 1900-1943*; BHI-0421, *Chinese Gold Miners of the Mid-Columbia Region, Phase I and Phase II*). The mining industry created a demand for beef, and the Columbia Basin was quickly discovered to be the ideal location for livestock production.

A noticeable increase in Euro-American settlement began in eastern Washington in the late 1800s. The initial permanent settlement of non-Indians into the area began slowly with livestock producers who discovered the area was extremely suitable for the production of cattle to support gold miners in Alaska and Idaho. Pasture was free for the taking and very abundant. Ranchers relied on the bountiful supply of bunch grass and open rangeland to graze thousands of cattle and later sheep and horses. The open range was also an ideal winter pasture. It lasted from the 1880s to about 1910, as homesteaders settled into the area and began to plow up the rangeland to plant crops. Even though the open rangeland was no longer available, livestock remained an important economic commodity to agricultural producers. As farmland replaced large portions of open rangeland, cattle were confined by fences and sheep continued to pasture the Rattlesnake and Horse Heaven Hills on remaining open range (Fridlund, 1985). Agricultural producers gradually replaced the open-range livestock operations that had dominated the area during the latter part of the 1800s and early 1900s.

Homesteaders developed the agricultural landscape in the Columbia Basin by removing unwanted sagebrush and bunchgrass and plowing the land. The opportunity was brought about by the passage of the Homestead Act by Congress in 1862 (DOE/RL-97-02, *National Register of Historic Places Multiple Property Documentation Form-Historic, Archaeological and Traditional Cultural Properties of the Hanford Site, Washington*). Under the Act, anyone 21 years of age or older who was willing to live on and develop 65 hectares (160 acres) of public land for 5 years, was declared the legal owner. Near the turn of the century, many would-be homesteaders moved west to begin a new life. Many of the homesteaders traveled by one of the three transcontinental railroads (Northern Pacific, Great Northern, or the Chicago Milwaukee) to the Columbia Basin area. Local transportation systems in the Columbia Valley were very limited at that time so many of the new settlers arrived by river transportation.

Steamboat and ferry service were the primary transportation systems on the Columbia River in the early non-Indian settlement of the area. New agricultural towns of Hanford and White Bluffs, as well as small communities of Allard-Vernita, Wahluke, and Fruitvale and local rural residents, relied almost exclusively on river transportation during the early development of the area.

River transportation played a significant role in the development of the Hanford Reach. Initially, when population numbers were low, canoes and ferry operations met the demand; however, as the population increased, an opportunity to earn large profits was realized by steamboat owners. Many steamboats operated on the Hanford Reach carrying the larger cargoes, while canoes and ferries carried small cargoes of people, animals, and equipment primarily from one shore to the other. At least 10 ferry services operated on the Hanford Reach. The earliest known ferry service began at White Bluffs in 1859 (BHI-01561).

As increasing numbers of farmers moved into the region, it became apparent that more water, other than small amounts of rain, was needed to produce higher yields. Irrigation projects were under construction throughout eastern Washington shortly after the turn of the 20th century. Many irrigation projects began as small-scale, privately funded projects usually with insufficient funding; the Hanford area was no exception. The Hanford area was sought after by developers and producers for its unique geographical ability to produce agricultural crops, especially fruit, from 2 to 3 weeks ahead of surrounding areas, which generally resulted in better profits. In the early 1900s, dryland wheat and livestock were the primary agricultural commodities produced in Benton County.

By the early 1900s, land speculators began constructing large-scale, privately funded irrigation canals to supply water to thousands of acres in the White Bluffs, Hanford, Fruitvale, Vernita, and Richland areas. A variety of irrigation techniques were initiated to produce the most affordable irrigation system, which included pumping from wells, canals, and directly from the Columbia River (BHI-01326). Poor economic conditions brought about by depressed commodity prices and the depression of the 1930s created economic hardships on most local residents that continued until the area was taken over by the government under the War Relocation Authority for the Manhattan Project.

In 1942, the Hanford site was selected by the federal government for the location of the Manhattan Project. Local residents numbering some 1,500 individuals were removed from their lands for the war effort (DOE/RL/97-1047, *History of the Plutonium Production Facilities at the Hanford Site Historical District, 1943-1990*). The following year, the Hanford Site was created to support the United States' plutonium-production effort during World War II. Plutonium production continued until 1965, when President Johnson declared the national need for special nuclear materials was being decreased. Following the shutdown of plutonium production, environmental cleanup operations began and continue at the present time.

3 Literature Review

A literature review was conducted at DOE/RL PNNL Cultural Resources Laboratory located in the Sigma V Building in Richland, Washington, and the Washington Information System for Architectural and Archaeological Records Data (WISAARD) to determine whether any cultural resource surveys had been conducted or archaeological sites recorded in or near the project area. A 1.6 km (1-mi) radius study area (.8 km [0.5- mile] on each side of the project centerline) was searched for cultural resource information. The literature review identified four cultural resource survey reports (SGW-42630, *Cultural Resources Review and Investigation for the 100-HR-3 OU and DR-5 System Enhancement Project on the Hanford Site, Benton County, Washington [HCRC#2009-100-013 and HCRC#2009-100-013a]*; Marceau 2008a, *Archaeological Activity Report: Excavation of Four Well Pads for the 100-HR-3 Groundwater Characterization Project*; PNNL-16837, *Cultural Resources Review of Nine New Monitoring Wells between 100H and 100D Areas, 600 Area Hanford Sites, Benton County, Washington [HCRC#2006-600-021]*; and Andresfsky et al., 1996), one monitoring report (Marceau, 2008b, *Archaeological Monitoring Report: Aquifer Sampling Tube, Well Pad, and Access Road Construction for the 100-HR-3 Groundwater Characterization Project*), and 36 archaeological sites within the study area.

3.1 SGW-42630

Sharpe and Ballantyne DeMaris conducted a cultural resource investigation that included survey of 26 hectares (63 acres), subsurface testing of 31 well locations, four 1 m by 1 m (3.2 feet by 3.2 feet) units. The investigation identified one pre-contact lithic scatter, enlarged the site boundary for Military Base Camp 130 (45BN1052), confirmed the site boundary for 45BN439. In addition, determinations of eligibility for listing of sites to the NRHP were conducted for the updated recorded sites. Only two pre-contact sites (45BN439 and 45BN483) and one historic Military Base Camp (45BN1052) were determined eligible for the NRPH. Archaeological sites 45BN488, 45BN900, 45BN910, 45BN913, and 45BN1053 were determined not eligible.

3.2 Marceau, 2008a

In 2008, archaeological excavation was conducted for four well pads for the 100-HR-3 Groundwater Characterization Project. The excavation resulted in a small quantity of prehistoric items that included freshwater mussel shell, a piece of chert shatter, and a portion of the temporal bone from a rodent. Not enough prehistoric material was identified to date. A small quantity of historic-related artifacts were identified immediately below the root zone that included nails, window glass, light bulb fragments, red brick fragments, and one metal can lid believed to date from the early 1900s and probably associated with pre-Hanford activities.

3.3 Marceau, 2008b

In 2008, archaeological monitoring was conducted for the installation of an aquifer sampling tube, well pad, and construction of an access road for the 100-HR-3 Groundwater Characterization project. No cultural resources were identified during the monitoring.

3.4 PNNL-16837

In 2007, Pacific Northwest National Laboratory (PNNL) conducted a cultural resource review of nine new monitoring wells located between the H and D Reactor areas (HCRC#2006-600-021). The survey recorded historic site 45BN1471 and two prehistoric isolates.

3.5 Andresfsky et al., 1996

In 1996, Andresfsky and Associates conducted a large-scale archaeological survey for most of the 100 Area that also included the project area. Overall, the project recorded more historic sites by far than prehistoric sites. The report indicates that prehistoric sites tend to be near the Columbia River and often associated with known ethnographic sites. The report goes on to state that historic sites tend to be located from 0.97 km to 3.0 km (0.6 to 1.86 miles) from the Columbia River.

3.6 Recorded Archaeological Sites

The literature review also identified 36 recorded archaeological sites within the study area. Table 3-1 summarizes the sites by site number and type.

Table 3-1. Site Number and Site Types within the Study Area

SITE NUMBER	SITE TYPE	
	Prehistoric	Historic
45BN483	Lithics	
45BN894		Historic Debris
45BN486	Projectile Point	Historic Debris
45BN488		Historic Debris Farmstead
45BN890		Historic Debris and Building Foundation
45BN895		Historic Debris
45BN896		Military Camp
45BN897		Historic Debris
45BN898		Historic Debris and Building Foundation
45BN899		Historic Debris
45BN902		Historic Debris
45BN903		Historic Debris
45BN904		Historic Debris
45BN909		Historic Debris
45BN910		Farmstead
45BN911		Historic Debris
45BN915		Historic Debris
45BN916		Historic Debris and Building Foundation
45BN917		Historic Debris and Building Foundation
45BN920		Historic Debris
45BN921		Historic Debris and Building Foundation

Table 3-1. Site Number and Site Types within the Study Area

SITE NUMBER	SITE TYPE	
	Prehistoric	Historic
45BN934		Historic Debris
45BN938		Historic Debris
45BN943		Historic Debris
45BN944		Historic Debris
45BN947		Historic Debris
45BN962		Historic Debris
45BN968		Historic Debris/Farmstead
45BN969		Historic Debris/Farmstead
45BN1052		Military Camp
45BN1053		Farmstead
45BN1057		Historic Debris/Farmstead
45BN1058		Military Debris Scatter
45BN1083		Historic Debris
45BN1337		Historic Debris
45BN1471		Historic Debris

The records search indicates that the project area contains an abundance of historic debris probably associated with pre-Hanford farmsteads and military operations. Pre-historically, very little has been identified archaeologically within the study area and what is recorded consists of a lithic scatter and projectile point. Overall, the literature review indicates that the project area has the potential to contain historic cultural resources and a low potential for prehistoric materials.

3.6.1 General Land Office 1882

The 1882 General Land Office (GLO) map indicates that there were three trails that crossed the northeast corner of the project area. Two of the trails crossed in a northwest/southeast direction and the third exited east from the northern most trails (Figure 3-1). No other features were documented.

3.6.2 Objectives

The objective of the literature review and survey was to determine whether the project area contains cultural resources. The APE was established to coincide with the activities associated with the project. No pre-contact or historic sites are known or documented within the project footprints of the well pads or access roads.

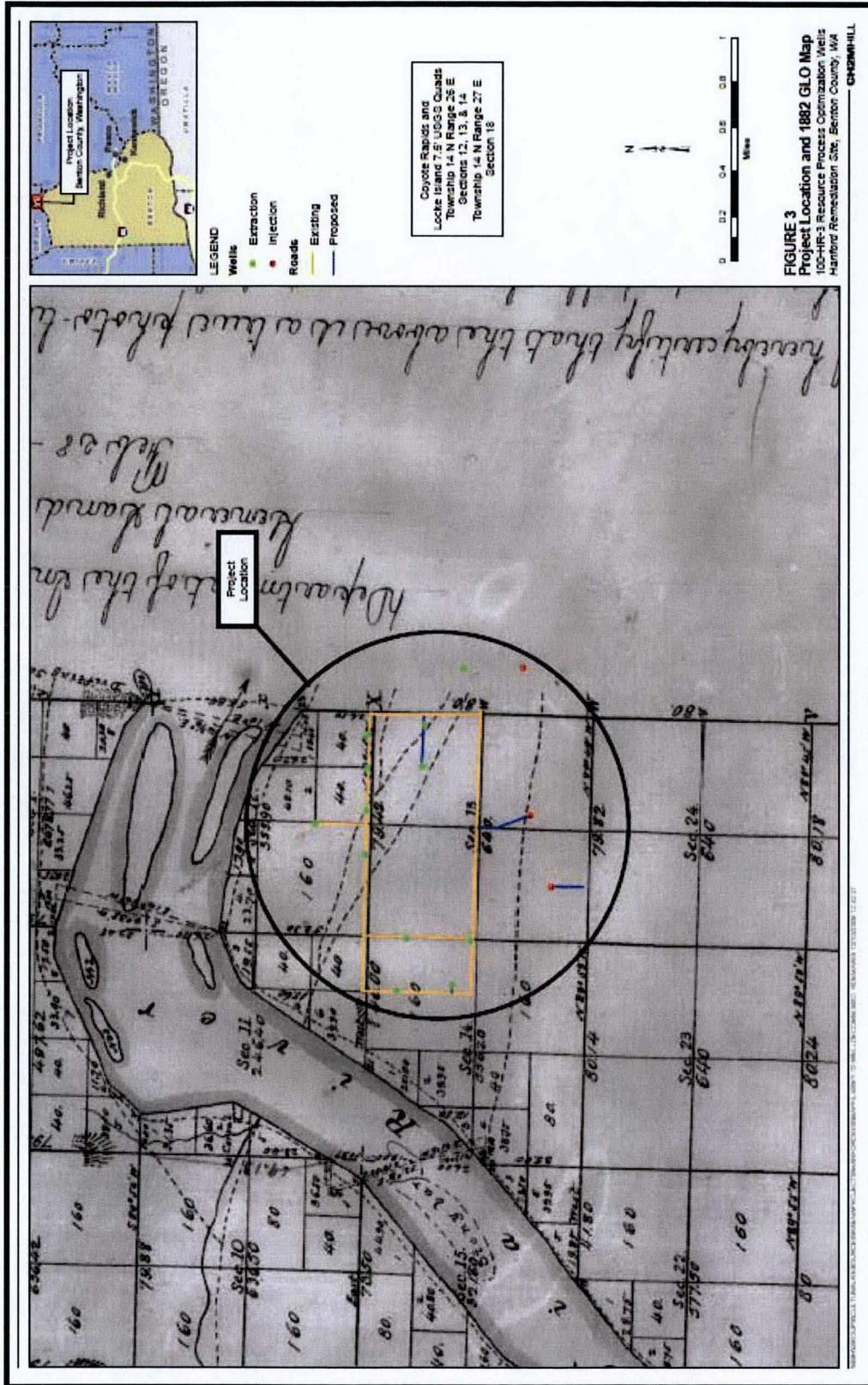


Figure 3-1. Project Location and 1882 GLO Map

3.6.3 Expectations

The literature review indicates a low potential for pre-contact resources and an increased potential for historic cultural resources in the project area. The project area was previously surveyed and no cultural resources are recorded within the immediate project footprint. Historically, the project area was used during the pre-Hanford period for agricultural production and later by military operations associated with Hanford operations. Based on background research, the presence of pre-historic cultural resource presence in the APE is doubtful. There is an increased potential for historic cultural resources. Previous cultural resource investigations indicate that prehistoric materials are not likely within the APE. Historic cultural deposits are generally identified immediately below the ground surface, and the project APE has received extensive ground disturbance so the potential for subsurface deposits is doubtful. No intact subsurface cultural deposits are anticipated within the APE, therefore no shovel testing is planned.

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4 Field Methods and Survey Results

A pedestrian archaeological survey for the 15 wells and access roads was conducted by James J. Sharpe (CH2M HILL), Dana Miller and Leah Aleck (Yakama Nation), and Julie Longnecker (Confederated Tribe of the Umatilla Nation), on December 4, 2009. Weather conditions were fair with mostly clear skies and a temperature of about 0°C (30°F).

4.1 Survey

The pedestrian survey was conducted for each of the 15 proposed well locations that included well pads and several of the new access roads that will be constructed. Existing access roads were windshield surveyed (Figure 4-1). The footprints for each of the well pads will be about 30 m² (100 feet²). Access roads to support each well pad will be up to 4.6 m (15 feet) in width with no ground-disturbing activities occurring except in rare instances where berms from previous ground disturbance may be slightly bladed to create a smooth surface. Each well pad and new access roads were walked by all four members of the survey crew for a very thorough visual inspection of each area. A description of each well pad is provided in Table 4-1.

Table 4-1. Well Numbers and Findings

Well Number	Findings
C7160	The well pad and well are located along the dirt access road in a previously disturbed area. Negative for cultural resources.
C7581	The well pad and well are located parallel to the north edge of the existing graveled access road. The proposed well pad has received extensive ground disturbance from blading activities. One piece of crushed metal was observed.
C7584	The well pad and well are located parallel to the north edge of the existing graveled access road. The proposed well pad has received extensive ground disturbance from blading activities. Three small fragments of purple glass were noted but not formally recorded.
C7585	The well pad and well are located parallel to the north edge of the existing graveled access road. The proposed well pad has received extensive ground disturbance from blading activities. Nineteen crushed metal Triton oil cans were present along the edge of the existing road and spread out onto the well pad. The oil cans were green on white and red on white in color. The oil cans appear to have been dumped along the edge of the road and dispersed along the edge of the road over time. The cans cover an area of 15 m (50 feet) east-west by 3 m (10 feet) north-south. The site was recorded as 45BN1555, a determination of eligibility completed, and a not eligible for listing to the NRHP recommended (Appendices A and B).
C7586	The well pad and access road have a bladed area about 5.5 m (18 feet) wide cut through it. The rest of the project area is undisturbed cheatgrass. The access road extends south toward the powerline road. No cultural resources were recorded.
C7587	This well will have an access road constructed to it. The access road will also be used to support well C7605. The well pad and access road will be constructed in previously disturbed soils. No cultural resources were recorded.
C7588	This well and well pad will be located in previously disturbed soils at the end of the access road (Photo 2). Negative for cultural resources.
C7595	This site is located near the four corners of two gravel access roads. The well pad and well will be located in previously disturbed soils. One piece of crushed tin was observed. A historic dump previously recorded as 45BN903 is located outside the well pad boundary about 4.6 m (15 feet) from the northern edge. Historic debris was also observed to the north of the well pad about 9.1 m (30 feet) from the well pad. Placing railroad ties around this well pad to keep vehicles from potentially damaging the historic site is recommended. No cultural resources

Table 4-1. Well Numbers and Findings

Well Number	Findings
	were recorded within the footprint of the well pad.
C7596	The well pad and well will be located along the west side of the existing gravel road in a previously disturbed area. No cultural resources were recorded.
C7597	The well pad and well will be located along the west side of the paved H-Reactor perimeter road. The area has received extensive ground disturbance with about 0.3 m (1 foot) of topsoil previously removed; leaving exposed rounded cobbles in the thin soils. No cultural resources were recorded.
C7598	The well pad and well will be located along the west side of the paved H-Reactor perimeter road. The area has received extensive ground disturbance. Most of the original topsoil has been removed, leaving exposed river cobbles in the thin soils. No cultural resources were recorded.
C7604	This area is located on the north edge of the existing graveled access road. The proposed well pad has received extensive ground disturbance from blading activities. No cultural resources were recorded.
C7605	An access road will be constructed to access this well. The access road will also be used to support well C7587. The well pad and access road will be constructed in previously disturbed soils (Photo 1). No cultural resources were recorded.
C7606	This area is located on the western edge of the existing graveled access road. Portions of the proposed well pad will be constructed within the gravel access road. The remaining portion of the well pad has received extensive ground disturbance from blading activities. No cultural resources were recorded.
C7609	The well pad and access road will be located east of the existing dirt access road in the cheatgrass (Photo 3). No cultural resources were recorded for the well pad or access road.
C7610	The well pad and access road will be located within an existing unimproved access road. The outer edges of the well pad will be constructed in an area that has received previous ground disturbance (Photo 3). No cultural resources were recorded.

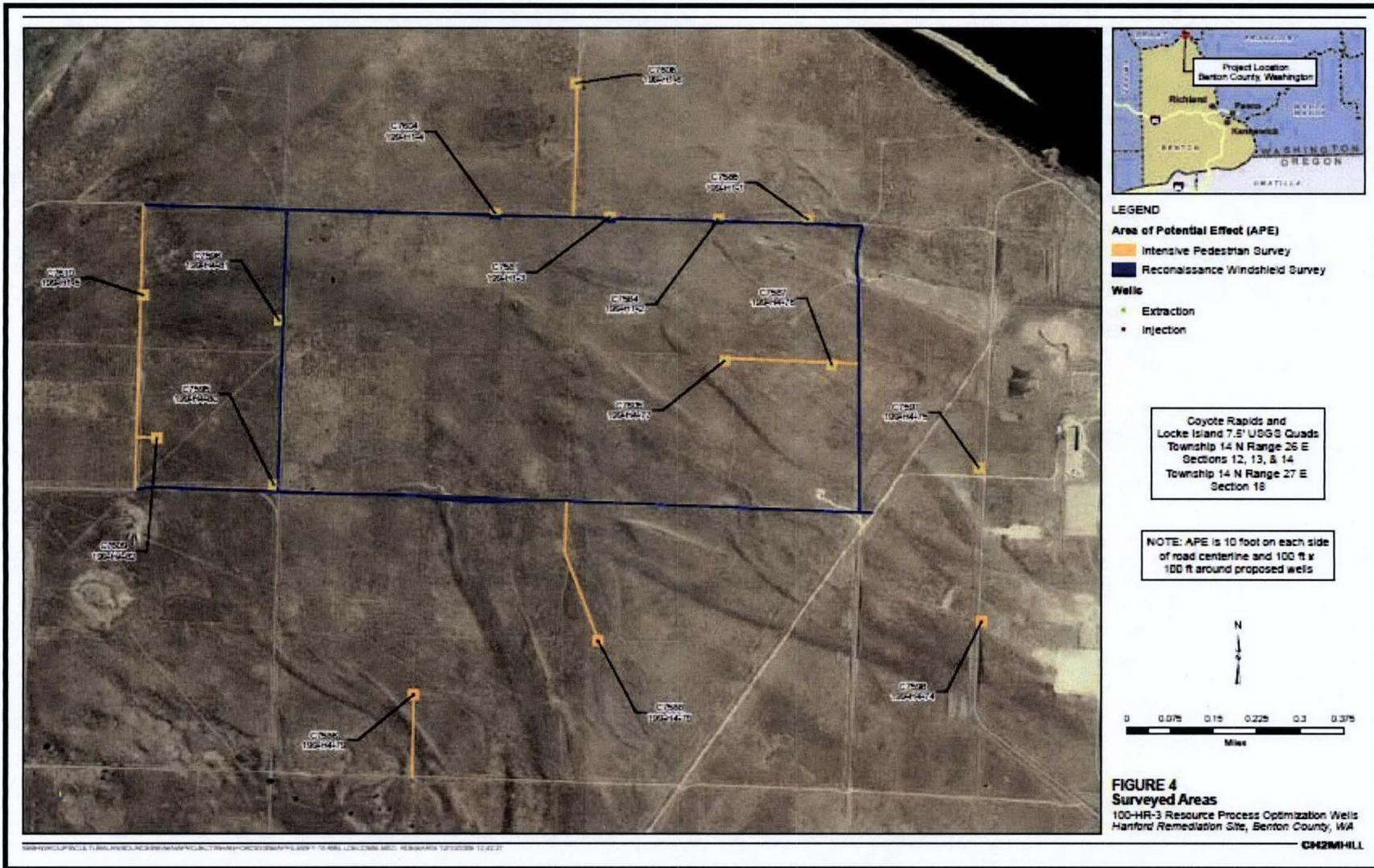


Figure 4-1. Surveyed Areas



Figure 4-2. Eastern View from Well Pad C7605 at Proposed Access Road



Figure 4-3. Northern View from Well Pad C7588 at Proposed Access Road



Figure 4-4. Northern View at Access Road That Will Support Wells C7609 and C7610

4.2 Recommendation

It is recommended that railroad ties be placed around the north and west sides of well pad C7595. Archaeological site 45BN903 is nearby and the railroad ties will reduce potential impacts to the site. In addition, it is recommended that all project personnel remain on existing and new access roads and well pads to eliminate potential impacts to cultural resources in the area.

Although no cultural resources were identified during the field investigation, in the unlikely event subsurface cultural resources are encountered during construction-related activities associated with the project, project activities should be halted in the immediate discovery area and an authorized official notified immediately to ensure that the discovery is properly treated.

4.3 Conclusion

The cultural resources investigation for the 100-HR-3 Resource Process Optimization Wells Project included a literature review and survey that resulted in identifying one historic site (45BN1555) that was recommended not eligible for listing to the NRHP (Appendices A and B). A total of 6 hectares (15 acres) were surveyed. Groundwater personnel did an excellent job of placing wells in previously disturbed soils to reduce potential impacts to cultural resources. Overall, the APE has received extensive ground disturbance from activities associated with road construction and general blading. Because of the previous ground disturbance, the project area contains a low probability for containing intact prehistoric or historic archaeological resources. As currently designed, the proposed project does not appear to have the potential to disturb or impact archaeological deposits. No further archaeological investigations are recommended for this project. It is the opinion of the RL that the project as proposed would result in “no effect” to historic properties. It is recommended that the project implementation proceed as planned.

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Appendix A
Site Form for 45B1555

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Site Form	
<p>*Date: 12/17/09</p> <p>*Compiler: Raena Ballantyne eMaris</p> <p>Location Information Restrictions (Yes/No/Unknown): Yes</p>	<p>Smithsonian Number: 45BN1555</p> <p>County: Benton</p>
SITE DESIGNATION	
<p>Site Name: Triton Can Site</p> <p>Field/ Temporary ID: Triton Can Site</p> <p>*Site Type: Historic Debris Scatter/Concentration</p>	
SITE LOCATION	
<p>*USGS Quad Map Name: Locke Island, WA 7.5' USGS Quad</p> <p>*Legal Description: T 14N Range 26 E Section(s): 12</p> <p>Quarter Section(s): SE ¼ of the SE ¼ of the SE ¼</p> <p>*UTM: Zone 11 Easting 309140.61 Northing 5175837.36</p> <p>Latitude: Longitude: Elevation (ft/m): 398 ft amsl</p> <p>Other Maps: Type:</p> <p>Scale: Source:</p> <p>Drainage, Major: Columbia River Drainage, Minor: N/A River Mile: 374+</p> <p>Aspect: North Slope: 2 degrees</p> <p>*Location Description (General to Specific): This site is located on an upper terrace of the Columbia River, just north of a dirt access road on the Hanford Site in Benton County.</p>	
<p>Approach (For Relocation Purposes):</p> <p>From downtown Richland, drive north about 27 km (17 miles) to the Hanford Site's Wye Barricade. Proceed north (from this point forward on restricted access roads) for 10 km (6.49 miles). Turn left and drive 0.69 km (0.43 mile). Turn right and drive 0.72 km (0.45 mile). Turn left and drive 12.7 km (7.9 miles). Veer right and drive 3.0 km (1.9 miles) toward the H-Reactor Area. Turn west onto the H-Reactor Perimeter Road and continue for 1.8 km (1.17 miles). Jog northwest and west onto an unimproved road and continue for .16 km (0.1 mile). Park at this point on the site; the site is located to the north of the road.</p>	

SITE DESCRIPTION

***Narrative Description:**

Nineteen Triton motor oil cans were identified on the north side of an east/west gravel access road along the north face of the bladed berm. The oil cans extend north from the toe of the berm over an area of about 15 m (50 feet) east/west by 3 m (10 feet) north/south. The area where the oil cans were located has received extensive ground disturbance, suggesting the oil cans were dumped after the road was constructed. The site may or may not be affiliated with pre-Hanford agricultural use, or Hanford-related military activity. The Triton motor oil cans were badly crushed with only partial markings visible, making it difficult to determine the manufacturer. However, the word "Triton" could be identified on a few of the can scraps. Some of the oil cans were red and white and some of the cans were green and white. Based on research, these cans date to ca. 1934 (ebay®, 2010).

***Site Type:** Historic Debris Scatter/Concentration

***Site Dimensions**

***Length:** 15 m (50 feet) ***Direction:** E/W x ***Width:** 3 m (10 feet) ***Direction:** N/S

***Method of Horizontal Measurement:** GPS and tape measures

***Depth:** 0 M *** Method of Vertical Measurement:** visual inspection

***Vegetation (On Site):** cheatgrass and bunch grasses

Local: cheat grass, tumble mustard **Regional:** shrub steppe

Landforms (On Site): upper river terrace **Local:** river terraces

Water Resources (Type):	Distance:	Permanence:
Columbia River	.53 km (0.33 mile) NE	permanent

CULTURAL MATERIALS AND FEATURES

Narrative Description: A noticeable increase in Euro-American settlement began in eastern Washington in the late 1800s. The initial permanent settlement of non-Native Americans into the area began slowly with livestock producers who discovered the area was extremely suitable for the production of cattle to support gold miners in Alaska and Idaho. Pasture was free for the taking and very abundant. Ranchers relied on the bountiful supply of bunch grass and open rangeland to graze thousands of cattle, and later sheep and horses. It was also an ideal winter pasture. The open range lasted from the 1880s to about 1910 as homesteaders settled into the area and began to plow up the rangeland to plant crops. Even though the open rangeland was no longer available, livestock remained an important economic commodity to agricultural producers. As farmland replaced large portions of open rangeland, cattle were confined by fences and sheep continued to pasture the Rattlesnake and

Horse Heaven Hills on remaining open range (Fridlund, 1985). Agricultural producers gradually replaced the open-range livestock operations that had dominated the area the later part of the 1800s and early 1900s.

Agricultural Era

Homesteaders developed the agricultural landscape in the Columbia Basin by removing unwanted sagebrush and bunchgrass and plowing the land. The agricultural opportunity was brought about by the passage of the Homestead Act by Congress in 1862 (DOE/RL-97-02, *National Register of Historic Places Multiple Property Documentation Form – Historic, Archaeological and Traditional Cultural Properties of the Hanford Site, Washington*). Under the Act, anyone 21 years of age or older who was willing to live on and develop 64.75 hectares (160 acres) of public land for 5 years was declared the legal owner. Near the turn of the century many of these legal owners would be homesteaders moved west to begin a new life.

As increasing numbers of farmers moved into the region, it became apparent that more water, other than small amounts of rain, was needed to produce higher yields. Irrigation projects were under construction throughout eastern Washington shortly after the turn of the 20th century. Many irrigation projects began as small-scale, privately funded projects usually with insufficient funding and the Hanford area was no exception. The Hanford area was sought after by developers and producers for its unique geographical ability to produce agricultural crops, especially fruit, 2 to 3 weeks ahead of surrounding areas—generally resulting in better profits. In the early 1900s, dryland wheat and livestock were the primary agricultural commodities produced in Benton County.

By the early 1900s, land speculators began constructing large-scale, privately funded irrigation canals to supply water to thousands of acres in the White Bluffs, Hanford, Fruitvale, Vernita, and Richland areas. A variety of irrigation techniques were initiated to produce the most affordable irrigation system, which included pumping from wells, canals, and directly from the Columbia River (BHI-01326, *Pre-Hanford Agricultural History: 1900-1943*). Irrigation systems generally consisted of a mainline, rill ditches, and occasionally return lines. Irrigation systems were constructed of wire-wrapped wood pipe, wood flumes, metal, or cement pipe. Early irrigation pipes of wire-wrapped wood were later replaced with cement. Poor economic conditions brought about by depressed commodity prices and the Great Depression of the 1930s created economic hardships on most local residents that continued until the Hanford area was taken over by the government under the War Relocation Authority for the Manhattan Project in 1943. Local residents were relocated to create the Hanford Site for the Manhattan Project. The remains of the pre-Hanford residents remain randomly scattered throughout the Hanford Site.

The Criteria for National Register Eligibility and Evaluation was used to determine if this historic site may be eligible for listing to the National Register of Historic Places (NRHP). The evaluation process follows.

Criteria for National Register Eligibility and Evaluation

- *Criterion A:* Association with events that have made a significant contribution to the broad patterns of our history.

The 19 cans on the site cannot be definitively associated with the pre-Hanford Site agricultural activities that took place in the general area, nor can they be concretely linked to Hanford Site military activities. Lack of association with these events and themes renders the site not eligible under Criterion A.

- *Criterion B:* Association with the lives of persons significant in our past.

Research did not indicate the names of people with whom these artifacts are associated.

- *Criterion C:* Embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction.

The site does not derive significance from architectural or artistic distinction because it lacks design, landscape, layout, and complexity.

- *Criterion D:* Has yielded or may be likely to yield information important in the prehistory of history.

The site does not possess the number or array of artifacts that would make it eligible under Criterion D. All artifacts appear to represent a single dumping episode. The historic debris represent at best secondary deposits that have lot integrity of association and are unable to convey, illustrate, or interpret the historical importance of anything but in a general way. Because the full information content of this site has been documented in recording, the site possesses no additional potential to yield historical information that would contribute to our understanding of important local, state, and national themes or events. Therefore, the site is recommended not eligible under Criterion D.

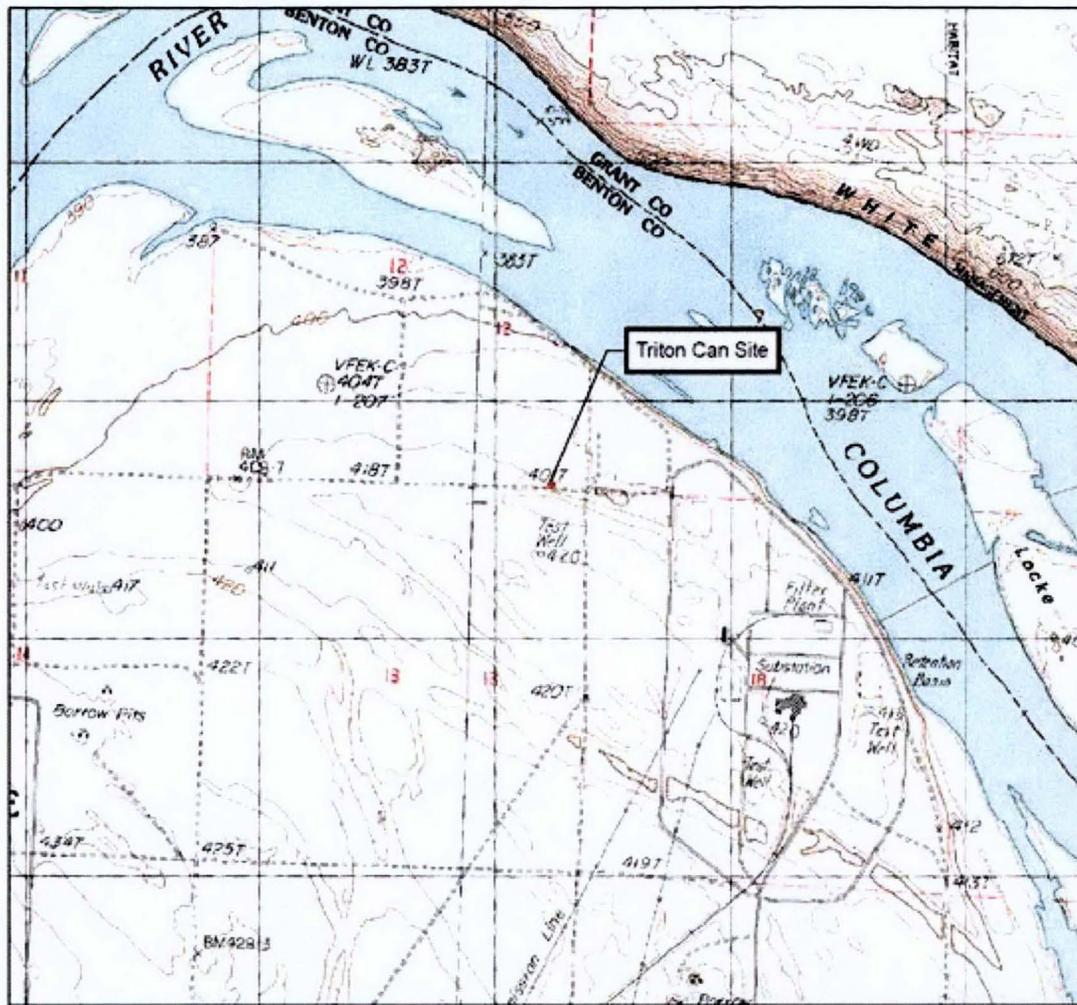
For the reasons mentioned above, this site does not appear to meet minimum criteria for listing on the NRHP and is recommended Not Eligible.

***Method of Collection(s):** No artifacts were collected.

***Location of Artifacts (Temporary/Permanent):** N/A

SITE AGE	
*Component: historic	*Dates: ca. 1934
*Phase: pre-WWII	*Dating Method: diagnostic artifact
Basis for Phase Designation: diagnostic artifact	
SITE RECORDERS	
Observed by: Jim Sharpe	Address: CH2M HILL, Inc. 295 Bradley Blvd. Suite 300, Richland, WA 99352
*Date Recorded: 12/14/09	
*Recorded by (Professional Archaeologist): Jim Sharpe	
*Affiliation: CH2M HILL, Inc.	*Affiliation Phone Number: 509-375-3444
*Affiliation Address: 295 Bradley Blvd, Suite 300, Richland, WA 9=352	
*Affiliation E-mail: jsharpe@ch2m.com	
Date Revisited:	Revisited By:
SITE HISTORY	
Previous Work (Done on Archaeological Site): none	
LAND OWNERSHIP	
*Owner: U.S. Department of Energy, Richland Operations Office	
*Address: Richland, WA	
*Tax Lot/ Parcel No:	
RESEARCH REFERENCES	
*Items/Documents Used In Research (Specify):	
BHI-01326, 1999, <i>Pre-Hanford Agricultural History: 1900-1943</i> , Rev. 0, Bechtel Hanford, Inc. Richland, Washington.	
ebay®, 2010, "Vintage 1934 Union Oil Co. Metal Triton Motor Oil Can." Available at: http://cgi.ebay.com/VINTAGE-1934-UNION-OIL-Co-METAL-TRITON-MOTOR-OIL-CAN_W0QQitemZ390058204573QQcmdZViewItemQQptZLH_DefaultDomain_0?hash=item5ad147dd9dDOE/RL-97-02 , 1997, <i>National Register of Historic Places Multiple Property Documentation Form-Historic, Archaeological and Traditional Cultural Properties of the Hanford Site, Washington</i> , Rev. 0, U.S. Department of Energy, Richland, Operations Office, Richland, Washington. Available at: http://www.hanford.gov/doe/history/mpd/toc.htm .	
Fridlund, P., 1985, <i>Prosser 1910-20 Going Back</i> , Ye Galleon Press, Fairfield, Washington.	

Figures



LEGEND
 • Triton Can Site

Locke Island, WA 7.5' USGS Quad
 Township 14 N Range 26 E Section 12
 SE 1/4 of the SE 1/4 of the SE 1/4



FIGURE 1
Site Locator Map
 Hanford Site
 Benton County, WA



782859.DRPL.PSR.CULTURAL.RESOURCE.SR24.NAIPROJECT.SRAMP.DRNGTSMAN.YFILE.STR17.DIVULCAN.MAL FOR.MAP.15.117.2009.11.11.58

CH2MHILL

Figure A-1. Site Locator Map

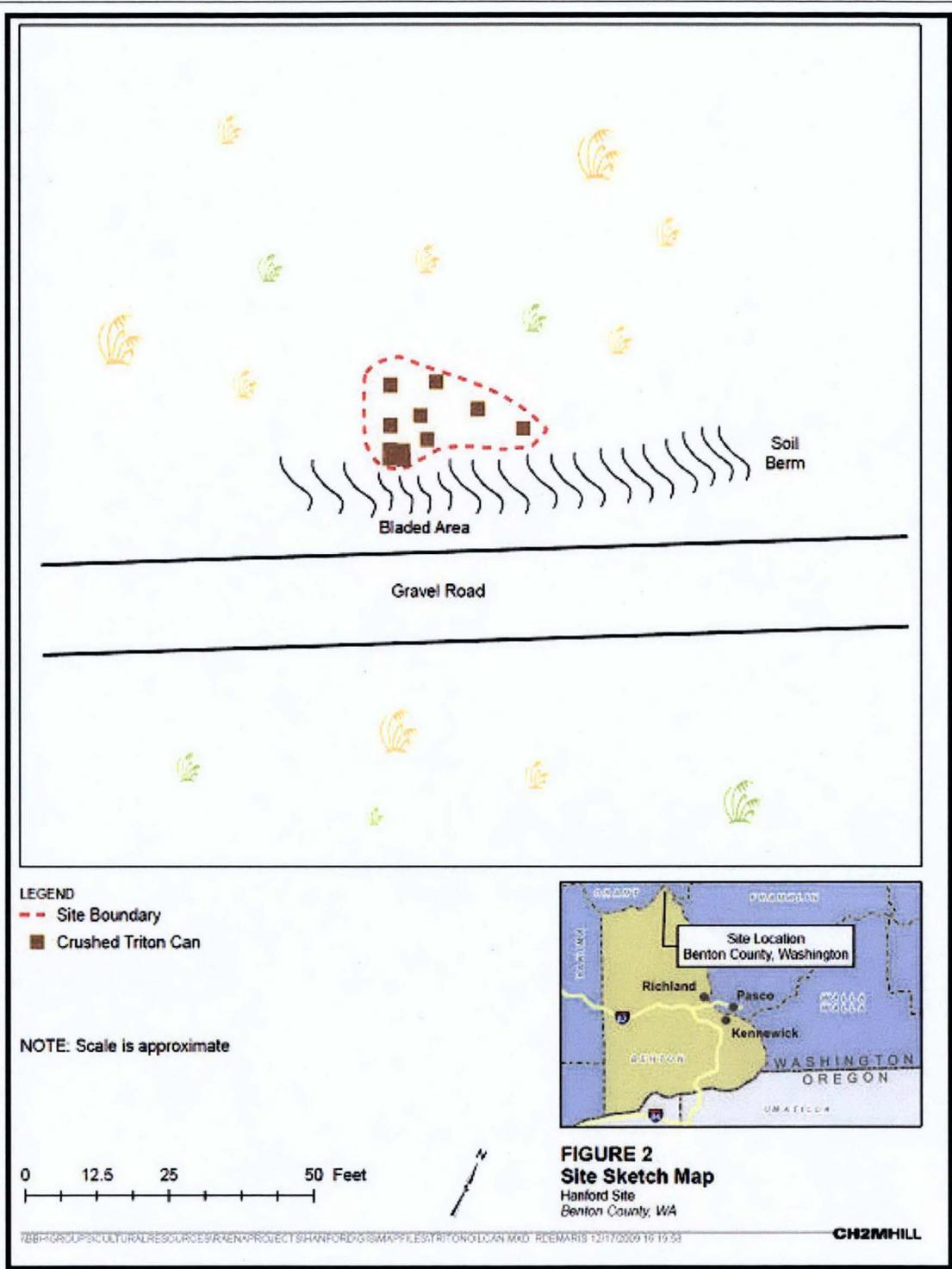


Figure A-2. Site Sketch Map

Photographs



Figure A-3. View of Site of Motor Oil Can



Figure A-4. View of Crushed Oild Cans on Road Side

Appendix B

National Register of Historic Places Registration Form

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United States Department of the Interior

National Park Service, National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in the U.S. Department of the Interior (DOI), National Park Service, 1997, *Guidelines for Completing National Register of Historic Places Forms, Part A, How to Complete the National Register Registration Form*. Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

Historic Name:	Triton Motor Oil Can Site
Other Names/Site Number	45BN1555

2. Location

Street & Number:		Hanford Site		Not for Publication					
City:		Richland		Vicinity					
State:	Washington	Code:	WA	County:	Benton	Code:	005	Zip Code:	99352

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this ___ nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ___ meets does not meet the National Register criteria. I recommend that this property be considered significant ___ nationally ___ statewide ___ locally. (___ See continuation sheet for additional comments.)

Signature of certifying official/Title Date

U.S. Department of Energy, Richland Operations Office

State or Federal agency and bureau

In my opinion, the property ___ meets ___ does not meet the National Register criteria. (___ See continuation sheet for additional comments.)

Signature of certifying official/Title Date

Federal Agency and Bureau State or

4.. National Park Service Certification

I, hereby, certify that this property is:	Signature of the Keeper	Date of Action
<input type="checkbox"/> Entered in the National Register	_____	_____
<input type="checkbox"/> See continuation sheet	_____	_____
<input type="checkbox"/> Determined eligible for the National Register	_____	_____
<input type="checkbox"/> See continuation sheet	_____	_____
<input type="checkbox"/> Determined not eligible for the National Register	_____	_____
<input type="checkbox"/> Removed from the National Register	_____	_____
<input type="checkbox"/> Other (explain:)	_____	_____

5. Classification

Ownership of Property (Check as many boxes as apply)		Category of Property (Check only one box)		Number of Resources within Property (Do not incl. previously listed resources in the count.)		
	Private		Building(s)	Contributing	Non-Contributing	
	Public-Local		District	0	0	Buildings
	Public-State	X	Site	0	0	Sites
X	Public-Federal		Structure	0	0	Structures
			Object	0	0	Objects
				0	0	Total

Name of related multiple property listing: (Enter "N/A" if property is not part of a multiple property listing.)	Number of contributing resources previous listed in the National Register
N/A	0

6.. Functions or Use

Historic Functions (Enter categories from instructions)	Current Functions (Enter categories from instructions)
Historic debris scatter	Abandoned
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

7 Description

Architectural Classification (Enter categories from instructions)	Materials (Enter categories from instructions)	
N/A	foundation	N/A
	walls	
	roof	
	other	

Narrative Description

Nineteen Triton motor oil cans were identified on the north side of an east/west gravel access road along the north face of the bladed berm. The oil cans extend north from the toe of the berm over an area of about 50 feet east/west by 10 feet north/south. The area where the oil cans were located has received extensive ground disturbance, suggesting the oil cans were dumped after the road was constructed. The site may or may not be affiliated with pre-Hanford agricultural use, or Hanford-related military activity. The Triton motor oil cans were badly crushed with only partial markings visible, making it difficult to determine the manufacturer. However, "Triton" could be made out on a few of the can scraps. Some of the oil cans were red and white and some were green and white. Based on research these cans date to ca. 1934 (ebay®, 2010).

8.. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- A** Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B** Property is associated with the lives of persons significant in our past.
- C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D** Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

Property is:

- A** owned by a religious institution or used for religious purposes.
- B** removed from its original location.
- C** a birthplace or grave.
- D** a cemetery.
- E** a reconstructed building, object, or structure.
- F** a commemorative property.
- G** less than 50 years old or achieving significance within the past 50 years.

Areas of Significance

(Enter categories from instructions)

N/A

Period of Significance

N/A

Significant Dates

N/A

Significant Person

(Complete if Criterion B is marked above)

N/A

Cultural Affiliation

N/A

Architect/Builder

N/A

Narrative Statement of Significance

A noticeable increase in Euro-American settlement began in eastern Washington in the late 1800s. The initial permanent settlement of non-Indians into the area began slowly with livestock producers who discovered the area was extremely suitable for the production of cattle to support gold miners in Alaska and Idaho. Pasture was free for the taking and very abundant. Ranchers relied on the bountiful supply of bunch grass and open rangeland to graze thousands of cattle, and later sheep and horses. It was also an ideal winter pasture. The open range lasted from the 1880s until about 1910, as homesteaders settled into the area and began to plow up the rangeland to plant crops. Even though the open rangeland was no longer available, livestock remained an important economic commodity to agricultural producers. As farmland replaced large portions of open rangeland, cattle were confined by fences and sheep continued to pasture the Rattlesnake and Horse Heaven Hills on remaining open range (Fridlund, 1985). Agricultural producers gradually replaced the open-range livestock operations that had dominated the area during the later part of the 1800s and early 1900s.

Agricultural Era

Homesteaders developed the agricultural landscape in the Columbia Basin by removing unwanted sagebrush and bunchgrass and plowing the land. The agricultural opportunity was brought about by the passage of the Homestead Act by Congress in 1862 (DOE/RL-97-02, *National Register of Historic Places Multiple Property Documentation Form – Historic, Archaeological and Traditional Cultural Properties of the Hanford Site, Washington*). Under the Act, anyone 21 years of age or older who was willing to live on and develop 160 acres of public land for 5 years was declared the legal owner. Near the turn of the century, many would be homesteaders moved west to begin a new life.

As increasing numbers of farmers moved into the region, it became apparent that more water, other than small amounts of rain, was needed to produce higher yields. Irrigation projects were under construction throughout eastern Washington shortly after the turn of the 20th century. Many irrigation projects began as small-scale, privately funded projects, usually with insufficient funding, and the Hanford area was no exception. The Hanford area was sought after by developers and producers for its unique geographic ability to produce agricultural crops, especially fruit, 2 to 3 weeks ahead of surrounding areas—generally resulting in better profits. In the early 1900s, dryland wheat and livestock were the primary agricultural commodities produced in Benton County.

By the early 1900s, land speculators began constructing large-scale, privately funded irrigation canals to supply water to thousands of acres in the White Bluffs, Hanford, Fruitvale, Vernita, and Richland areas. A variety of irrigation techniques were initiated to produce the most affordable irrigation system, which included pumping from wells, canals, and directly from the Columbia River (BHI-01326, *Pre-Hanford Agricultural History: 1900-1943*). Irrigation systems generally consisted of a mainline, rill ditches, and

occasionally return lines. Irrigation systems were constructed of wire-wrapped wood pipe, wood flumes, metal, or cement pipe. Early irrigation pipes of wire-wrapped wood were later replaced with cement. Poor economic conditions brought about by depressed commodity prices and the Great Depression of the 1930s created economic hardships on most local residents that continued until the Hanford area was taken over by the government under the War Relocation Authority for the Manhattan Project in 1943. Local residents were relocated to create the Hanford Site for the Manhattan Project. The remains of the pre-Hanford Site residents remain randomly scattered throughout the Hanford site.

The Criteria for National Register Eligibility and Evaluation was used to determine if this historic site may be eligible for listing to the National Register of Historic Places (NRHP). The evaluation process follows.

Criteria for National Register Eligibility and Evaluation

- *Criterion A:* Association with events that have made a significant contribution to the broad patterns of our history.

The 19 cans on the site cannot be definitively associated with the pre-Hanford agricultural activities that took place in the general area, nor can they be concretely linked to Hanford motor oil can site, aspect east.izationwells project (HCRC#2010-100-007) but the font needs to be decreased to eliminate the wra military activities. The motor oil cans appear to be an ad hoc dumping event that renders the site unable to convey its association with these events and themes and renders the site not eligible under Criterion A.

- *Criterion B:* Association with the lives of persons significant in our past.

Research did not indicate the names of people with whom these artifacts are associated.

- *Criterion C:* Embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction.

The site does not derive significance from architectural or artistic distinction because it lacks design, landscape, layout, and complexity.

- *Criterion D:* Has yielded or may be likely to yield information important in the prehistory of history.

The site does not possess the number or array of artifacts that would make it eligible under Criterion D. All artifacts appear to represent a single *ad hoc* dumping episode. The historic debris represent at best secondary deposits that have lot integrity of association and are unable to convey, illustrate, or interpret the historical importance of anything but in a general way. Because the full information content of this site has been documented in recording, the site possesses no additional potential to yield historical information that would contribute to our understanding of important local, state, and national themes or events. Therefore, the site is recommended not eligible under Criterion D.

For the reasons mentioned above, this site does not appear to meet minimum criteria for listing on the NRHP and is recommended Not Eligible.

9. Major Bibliographical References

Bibliography

BHI-01326, 1999, *Pre-Hanford Agricultural History: 1900-1943*, Rev. 0, Bechtel Hanford, Inc. Richland, Washington.

DOE/RL-97-02, 1997, National Register of Historic Places Multiple Property Documentation Form-Historic, Archaeological and Traditional Cultural Properties of the Hanford Site, Washington, Rev. 0, U.S. Department of Energy, Richland, Operations Office, Richland, Washington.

DOI, 1997, Guidelines for Completing National Register of Historic Places Forms, Part A, How to Complete the National Register Registration Form, National Register Bulletin, U.S. Department of Interior, National Park Service, Washington, D.C. Available at:
<http://www.nps.gov/history/nr/publications/bulletins/nrb16A/>.

ebay®, 2010, "Vintage 1934 Union Oil Co. Metal Triton Motor Oil Can." Available at:
http://cgi.ebay.com/VINTAGE-1934-UNION-OIL-Co-METAL-TRITON-MOTOR-OIL-CAN_W0QQitemZ390058204573QQcmdZViewItemQQptZLH_DefaultDomain_0?hash=item5ad147dd9d

Fridlund, P., 1985, *Prosser 1910-20 Going Back*, Ye Galleon Press, Fairfield, Washington.

National Historic Preservation Act of 1966, 16 USC 470, et seq. Available at:
<http://www.achp.gov/NHPA.pdf>.

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark # _____
- recorded by Historic American Engineering Record# _____

Primary location of additional data:

- State Historic Preservation Office
- Other State agency
- Federal agency
- Local government
- University
- Other

Name of repository:

10. Geographical Data

Acreeage of Property ~0.1

UTM References

(Place additional UTM References on a continuation sheet.)

1	<input type="text" value="11"/>	<input type="text" value="30"/> <input type="text" value="91"/> <input type="text" value="40"/>	<input type="text" value="51"/> <input type="text" value="758"/> <input type="text" value="37"/>	3	<input type="text"/>					
	Zone	Easting	Northing		Zone	Easting		Northing		
2	<input type="text"/>	<input type="text"/>	<input type="text"/>	4	<input type="text"/>					
	Zone	Easting	Northing		Zone	Easting		Northing		

Verbal Boundary Description

The site is bordered to the south by the east/west gravel access road; the east, west and northern boundaries were determined by the spatial distribution of the Triton oil cans on the open rangeland.

Boundary Justification

The boundary was determined by the spatial distribution of the Triton oil cans.

11. Form Prepared By

Name/Tite	<u>Jim Sharpe</u>	Date	<u>12/15/09</u>
Organization	<u>CH2MHILL</u>	Telephone	<u>509-375-3444</u>
Street & Number	<u>295 Bradley Boulevard, Suite 300</u>	State	<u>WA</u>
City Or Town	<u>Richland</u>	Zip Code	<u>99352</u>

Additional Documentation

Submit the following items with the completed form:

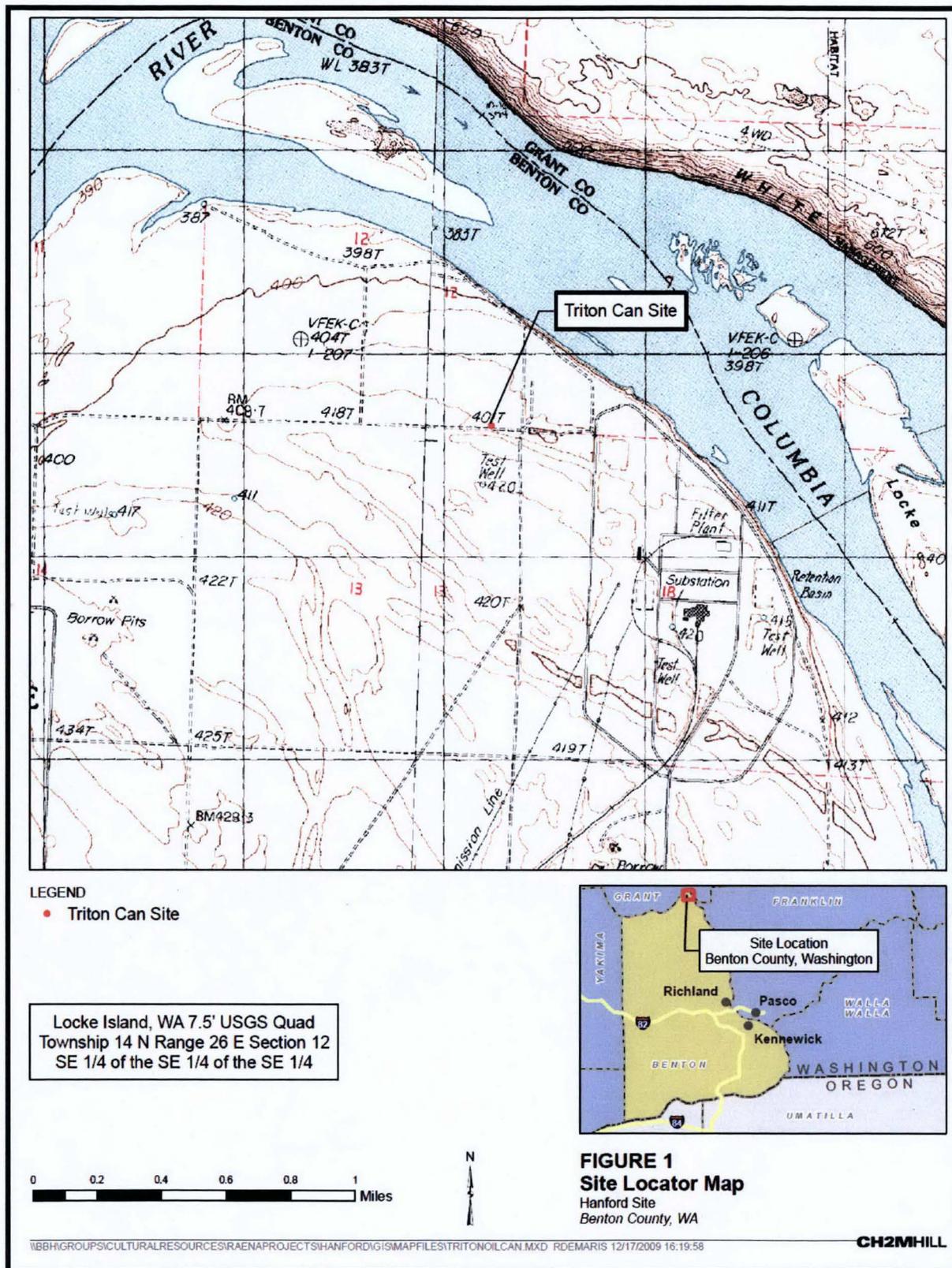


Figure B-1. Site Locator Map

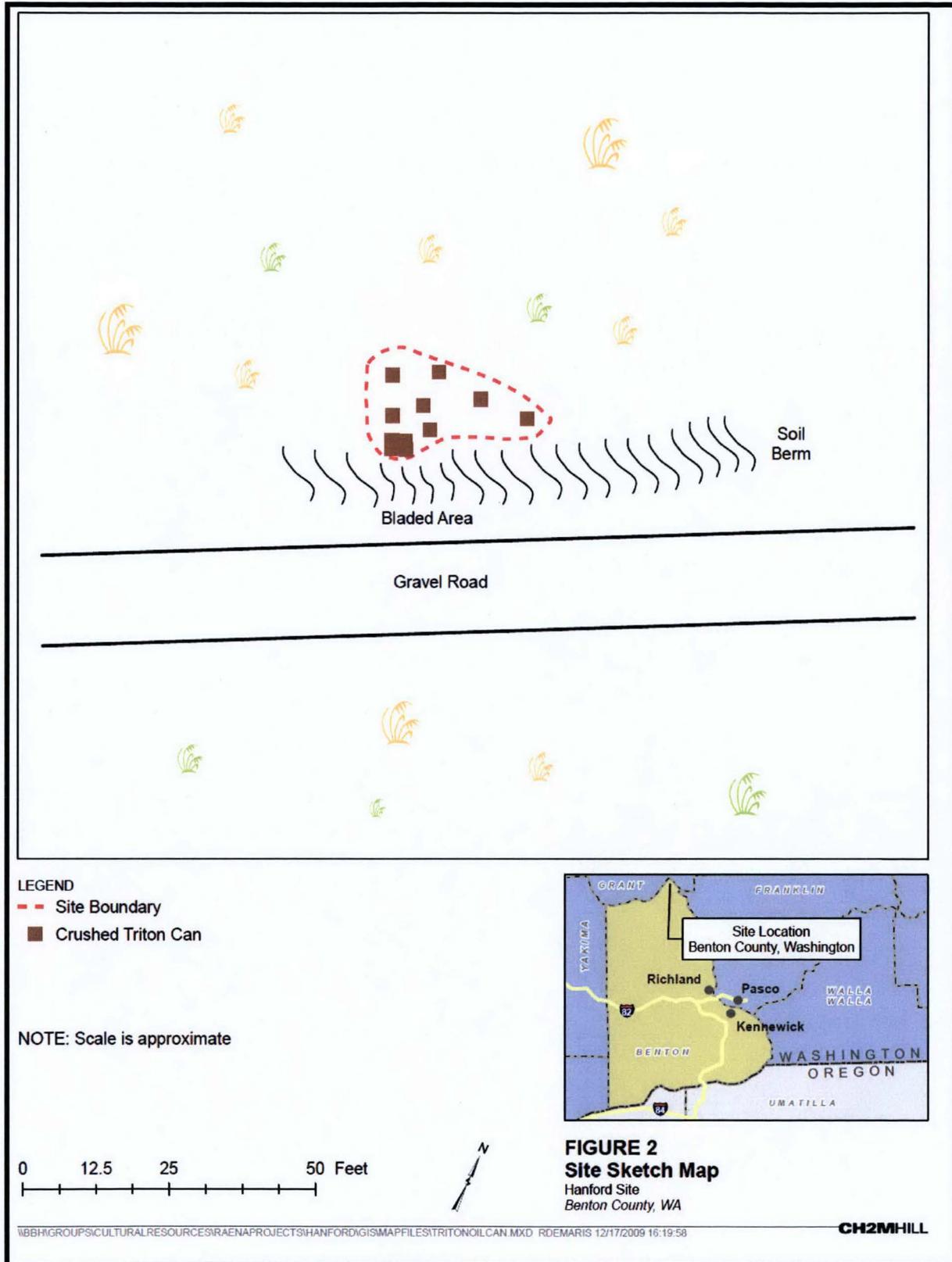


Figure B-2. Site Sketch Map



Figure B-3. Photo 1: Overview of the Triton motor oil can site, aspect east

Property Owner (Complete this item at the request of the SHPO or FPO.)

Name U.S. Department of Energy

Street & Number _____ **Telephone** 509-372-0277

City Or Town Richland **State** WA **Zip Code** 99352

Distribution

Onsite

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Operations Office

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(List individuals as necessary)

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