CULTURAL RESOURCES SURVEY REPORT COVER SHEET

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Raena DeMaris			

Title of Report: Cultural Resources Survey Report for the Kennewick Irrigation District Schaefer Property Leveling Project, Benton County, Washington

Date of Report: May 2023
County: Benton
Township 9 North, Range 27 East Section 36
Quad(s): Webber Canyon WA. Acres: <u>circa 13</u>
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?
DAHP Archaeological Site #:

- 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 single PDF file.
- Please check that the PDF displays correctly when opened.

Cultural Resources Survey Report for the Kennewick Irrigation District Schaefer Property Leveling Project, Benton County, Washington



Submitted to:

Kennewick Irrigation District

Prepared by:

James J. Sharpe and David Harvey, Northwest Cultural Resources Services

May 2023



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Contents

1	Intr	oduction1
1	Proj	ect Area1
2	Env	ronmental Setting1
	2.1	Climate1
	2.2	Geology4
	2.3	Vegetation4
3	Cult	ural Setting4
	3.1	Ethnographic Period5
	3.2	Euro-American Period7
4	Res	earch Design9
	4.1	Objectives and Expectations9
	4.2	Field Methodology9
	4.3	Inadvertent Discovery Plan10
5	Lite	rature Review and Records Search11
	5.1	General Land Office11
	5.2	1917 Historic Topographic Map11
	5.3	WISAARD Archival Findings14
	5.4	Summary of the Literature Review15
6	Field	d Survey Results15
	6.1	Pedestrian Survey17
	6.2	Subsurface Testing
7	Con	clusions and Recommendations20
8	Refe	erences21
A	PPENDI	X A - Shovel Test Unit Data for the Project Area A-1



List of Figures

Figure 1. Topographic Map of the Project Area	2
Figure 2. Aerial View of the Project Area	3
Figure 3. 1863 General Land Office Map of the Project Area	12
Figure 4. 1917 Topographic Map and the Project Area	13
Figure 5. Pedestrian Survey Transects and Shovel Test Locations in the Project Area	16
Figure 6. Northern Project Area (Aspect: East)	17
Figure 7. Southern Project Area (Aspect: South)	18
Figure 8. Project Area with Graded Area near Kennewick Main Canal Division III (Aspect: North)	19
Figure 9. Project Area with Graded Area near Canal (Aspect: Northeast)	19

List of Tables

Table 1.	Precontact Cultural Sequence	.4
Table 2.	Findings from the Literature Review of the WISAARD	14



1 Introduction

The Kennewick Irrigation District (KID) is proposing land leveling of the Schaefer property situated adjacent to the Kennewick Main Canal Division III near 506 PR SE in unincorporated Benton County. This land leveling will result in ~71,000 cubic yards of fill material which will be available for use in other projects. (KID 2022).

For the project, KID contracted the services of Northwest Cultural Resources Services (NCRS) to conduct a cultural resources (CR) survey investigation of the Project Area. NCRS will identify any historic properties within the Project Area that may be adversely affected by project-related activities. The archaeological field survey and subsurface testing of the Project Area will be conducted by the Secretary of the Interior-qualified archaeologists led by Molly Swords. Secretary of the Interior-qualified archaeologist Jim Sharpe and Secretary of Interior qualified-architectural historian David Harvey will prepare the CR survey report. Raena DeMaris of Integrated GeoSpatial Solutions, LLC, will prepare the maps for this report.

1 Project Area

The Project Area is located in the lower Yakima River Valley, in Section 36, Township 9 North, Range 27 East of the Willamette Meridian, in the Webber Canyon, Washington quadrangle map. The Project Area is generally flat with some steep slopes; it is covered with thick sagebrush and cheatgrass in heavily disturbed sandy soils. The surrounding area is mainly residential farmland and undeveloped land. The Project Area is approximately thirteen acres in size (Figures 1 and 2). Discussion of the Project Area's environmental setting, including its climate, geology, and vegetation, is provided in the following subsections.

2 Environmental Setting

The Project Area lies within the Columbia Basin Physiographic Province located between the Cascade and Blue Mountain Ranges. Defined in the Handbook of North American Indians, Vol. 12, as follows: "bounded on the west by the Cascade Range, on the south by the Blue Mountains and the Salmon River, on the east by the Rocky Mountains and to the north by the lower extensions of the Rocky Mountains and the columbia River" (Walker 1998).

2.1 Climate

The post-glacial climate ca. 13,000-9,000 years before present (BP) in the Project Area was cooler and moister than today. After 9,000 BP, the climate transitioned to warmer and drier conditions until about 4,400 BP. From ca. 4,400 BP to ca. 2,500 BP, the climate was again cool and wet. Conditions from 2,500 BP to the present appear somewhat warmer and drier than the earlier warm phase and reflect current conditions. The climate of the Project Area is influenced by moist air from the Pacific Ocean and by cold air moving southward from Canada. Summers are hot and dry; winters are mostly clear, cold, and dry (Rasmussen n.d.). Precipitation ranges from 9 to 12 in. annually.





Figure 1. Topographic Map of the Project Area





Figure 2. Aerial View of the Project Area



2.2 Geology

The combined effect of lava flows and glacial floods has primarily shaped the Columbia Plateau. Geologically, the province was formed by successive eruptions of volcanic lava during the Miocene epoch that covered most of eastern Washington and Oregon. The lava flows streamed westward down the Columbia River to the sea, these flows built up over time to form the thick layer of basalt referred to as the Columbia River Basalt Formation that underlies the Columbia Basin. Within this physiographic province are the Channeled Scablands that contain a series of dry, deeply cut channels in the Columbia River Basalt Formation (Franklin and Dyrness 1973; Orr and Orr 1996). During the Pleistocene epoch, continental glaciers advanced and retreated from British Columbia into northern Washington State. The advances and retreats created ice dams and glacial lakes that when breached caused extensive flooding.

Locally, the most noted was the flooding caused by the release of glacial melt water from Lake Missoula. It is believed the last major Pleistocene floods occurred about 12,000 years ago (Franklin and Dyrness 1973; Orr and Orr 1996). The Washington Geologic Information Portal describes the geology of the Project Area as follows: "Pleistocene outburst of flood deposits of Quaternary (Pleistocene) age that consist of sandy gravel deposits with interbedded silt lenses" (https://geologyportal.dnr.wa.gov).

The U. S. Department of Agriculture, Natural Resources Conservation Service classifies the soils in the Project Area as Warden Silt Loam (WdAB, WdB, WdC, WdE3, and WdF), and Kiona very stony silt loam (KnF and KnE) (SEPA 2022).

2.3 Vegetation

Vegetation in the Project Area is consistent with the low-rainfall, semi-arid landscape, and includes shrub-steppe vegetation perennial, and annual grasses, such as cheatgrass, rabbitbrush, bitterbrush, and sagebrush (Franklin and Dyrness 1973; O'Conner and Wieda 2001).

3 Cultural Setting

The cultural setting is characterized by the Columbia Plateau/Mid-Columbia Basin Pre-Contact Cultural Sequence. Archaeological investigations conducted on the Columbia Plateau enabled the creation of a cultural chronology dating back to the end of the Pleistocene epoch. Table 1 summarizes the Precontact cultural sequence for the Project Area.

Cultural Period	Years BP	Site Types	Architecture	Subsistence
		General Colur	nbia Plateau	
Windust Phase	11,000 – 8,000	Rock shelters, caves, game processing sites, lithic reduction sites; isolated lithic tools. Examples include Marmes Rockshelter, Bernard Creek, Lind Coulee, Kirkwood Bar, Deep Gully, Granite Point, Five Mile Rapids, and Bobs Point.	Rock shelters and caves; open habitation sites. No evidence of constructed dwellings or storage features.	Large mammals are supplemented with small mammals and fish. Toolset: Windust, Clovis, Folsom, and Scottsbluff points; contracting stemmed points and/or lanceolate points; cobble tools.

Table 1. Precontact Cultural Sequence



Cultural Period	Ye	ars BP	Site Types	Architecture	Subsistence		
	Mid-Columbia Region - Vantage Area						
Cascade/ 8,000 – Vantage 4,500 Phase		000 – 1,500	Lithic scatters, quarry sites, resource processing sites, temporary camps.	Rock shelters and caves; open habitation sites.	Mobile, opportunistic foragers subsisting on fish, mussels, seeds, and mammals. Basalt leaf-shaped Cascade and stemmed projectile points, ovate knives, edge-ground cobble tools, microblades, hammerstones, core tools, and scrapers.		
Frenchman Springs Period	4,	500 – 2,500	Habitation sites along major rivers, confluences, tributaries, canyons, and rapids. Lithic scatters, quarry sites, resource processing sites. Seasonal round of upland to lowland travel for resource procurement; seasonal camps.	House dwellings, including semi- subterranean.	As earlier, but with increased use of upland resources, seeds, and roots. Groundstone and cobble tools, mortars, pestles, contracting stemmed, corner notched, and stemmed projectile points, hopper mortar bases and pestles, knives, scrapers, and gravers. Wider tool material variety.		
Cayuse Phase	1	2,500 - 1,200	Habitation sites at major rivers, confluences, tributaries, canyons, and rapids. Lithic scatters, quarry sites, resource processing sites, seasonal round camps. Ideological and spiritual sites.	Pithouses with wall benches.	Reliance on riverine resources, fish, and botanicals; basal-notched and corner-notched projectile points (most corner-notched); variety of tools including groundstone, scrapers, lanceolate and pentagonal knives, net weights, cobble tools, drills, etc.		
	11	1,200 - 900	Same as Cayuse Phase I	withouses without wall benches.	Same as Cayuse Phase I.		
	111	900 – 250	Increased mobility and hunting ability due to horse introduction. Large village habitation sites along rivers, seasonal round camps. Same site types as Cayuse Phases I & II.	Pit longhouse village sites.	Decrease in corner-notched points, increase in stemmed and side- notched projectile points, fine pressure-flaked tools. Increase in trade goods.		

Table 1.	Precontact	Cultural	Sequence
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Sources: Morgan et al. (2001), Walker (1998), Sharpe and Marceau (2001), Swanson (1962), Nelson (1969), Galm et al. (1981), Benson et al. (1989), Thoms et al. (1983), Green (1975), Rice (1980).

3.1 Ethnographic Period

Ethnographically, the Project Area may have been used by the Cayuse, Umatilla, Walla Walla, Paluse, Yakama and neighboring tribal groups of Sahaptin speakers (Trost 2012; Steinmetz and Dickson 2003). Many of these tribes relied on the Columbia Plateau and its major tributaries as residential and yearround subsistence areas and as primary movement corridors. Other Native Tribes made seasonal use of the region for resource procurement, trade, and inter-tribal relations. Territorial boundaries were



generally delineated by geography, but they were crossed regularly for hunting, fishing, gathering, and trading activities (Churchill and Griffin 2003).

During this period, residents relied on a pattern of seasonal rounds that included semi-permanent residences in villages along major waterways during the winter months. With the arrival of spring, small groups would travel into the canyons and river valleys to gather roots, living in temporary camps. Seasonal camps were used in the interior of the Columbia Plateau during the spring and early summer months. By late summer or early fall, seasonal rounds focused on ripening berries in the mountains. It was this time of the year when the acquisition of food ended, and families returned to the winter villages (Chatters 1980).

The Handbook of North American Indians (Walker 1998) summarizes the ethnohistoric cultural pattern of the Columbia Plateau as follows:

- Riverine settlement patterns
- Reliance on a diverse subsistence base of anadromous fish and extensive game and root resources
- Mutual cross-utilization of subsistence resources among the various groups comprising the local populations
- Extension of kinship ties through extensive intermarriage
- Limited political integration, primarily at the village and band levels, until adoption of the horse
- Uniform mythology, art styles, and religious beliefs and practices focused on the vision quest, shamanism, life-cycle observances, and seasonal celebrations of the annual subsistence cycle.

A review of *Čáw Pawá Láakni They Are Not Forgotten* (Hunn et al. 2015) indicates that the Cayuse, Umatilla, and Walla Walla Tribes traditionally used the Project Area for grazing and seasonal camps. Winter villages were located near the Columbia, Snake and Yakima Rivers. The Project Area is in the general vicinity of religious and cultural significance known as Piyuušmaamí Puštáy ('hills of snakes') (Hunn et al. 2015). Piyuušmaamí Puštáy is described as follows: A chain of hills beginning southwest of Richland, Washington, and extending southeast to the Columbia River in the vicinity of Crescent and Badger Islands. This feature in the landscape refers to a mythical snake transformed into a mountain chain whose head has now been inundated by the Columbia River. Hills in this chain include Red Mountain, Candy Mountain, and Badger Mountain (Hunn et al. 2015). South of the Project Area is Kusipamá, which was a horse range on the low grassy slopes between the Columbia River and the Yakima River. The Cayuse, Umatilla, Walla Walla and other tribes used this area. Today, it is referred to as the Horse Heaven Hills (Hunn et al. 2015).

The first historic contact between Native American and non-Indian people occurred between 1600 and 1750 AD. Non-Indian contact resulted in the introduction of horses, epidemic diseases, Christian missionaries, and trade goods that had profound effects on the traditional Native American lifestyle (Walker 1998). During 1805-1806, the Lewis and Clark Expedition entered Mid-Columbia, soon to be followed by fur traders in search of beaver hides, horses, and trade routes. The non-Indian expansion resulted in mounting tensions with aboriginal groups. Tensions remained high until the early 1850s when an Indian agency was established in Echo, Oregon. The agency monitored Indian relations with non-Indian settlers that laid the groundwork for the treaties of 1855. The Walla Walla Treaty of 1855 was signed with 14 bands and tribes of central and eastern Washington and Oregon. These groups



ceded their lands in exchange for three reservations: the Yakama, Nez Perce, and Umatilla. Treaty terms reserved the right for tribal members to hunt, fish, and gather plants at their traditional locations.

3.2 Euro-American Period

The Lewis and Clark Expedition of 1804-1806 began the Euro-American exploration and settlement of the Columbia Plateau. Early explorers sought trade items from Native Americans, and trade routes were established throughout the Columbia Plateau. Gold miners, livestock producers, and homesteaders soon followed. By the 1860s, the discovery of gold north and east of the mid-Columbia region resulted in an influx of miners traveling through the region. The mining industry created a demand for beef, and the Columbia Basin turned out to be ideal for livestock production (Gundy et al. 1998).

Livestock producers discovered that the region was suitable for livestock production with its abundant bunchgrass and open rangeland to graze cattle and later sheep and horses. The open range lasted into the early 20th century as farmers and homesteaders began to replace livestock operations throughout the Columbia Plateau. By 1905, wheat cultivation had surpassed livestock production as the most important agricultural product in the Columbia Plateau (McGregor 1989).

Concurrent with this land use transition was the arrival in the early 1880s of the Northern Pacific Railroad in eastern Washington. Other transcontinental railroads soon followed, creating transportation routes for the export of the region's agricultural commodities and bringing settlers into eastern Washington. By 1900, homesteaders were travelling by railroad to the Columbia Basin (Lewty 1987; Meinig 1968).

Agricultural production, however, remained difficult in some areas of Mid-Columbia due to the sparse rainfall. Numerous attempts to develop privately funded irrigation canals were mostly unsuccessful due to the shortage of financial support. The Newlands Reclamation Act of 1902 created opportunities for federally funded irrigation projects in the arid lands, particularly in the West.

Irrigation water was first provided to the Kennewick Highlands in 1909 from the Columbia Irrigation District canal and was under the management of the Highland Water Users Association until 1930, when the KID took control (Doncaster 2008). In 1930, KID entered into a contract with the Bureau of Reclamation (Reclamation) for rehabilitation of the Kennewick Highlands irrigation system and for construction of a new hydroelectric power plant at Prosser to supply cheap power for pumping water to their irrigation district (U. S. Department of the Interior, Bureau of Reclamation, February 1955).

The first Congressionally authorized projects built by Reclamation in Washington State were the Yakima and Okanogan Projects in 1905 (Rowley 2006). Funding was approved for irrigation projects in the Yakima Valley, which included the area of the future KID (Pfaff 2002). The Yakima Project was the largest and most extensive of its kind in Washington State until the Columbia Basin project became operational in the 1950s. The Yakima Project was so large that it was composed of several irrigation divisions that would irrigate almost 500,000 acres.

The Yakima Valley became a model of intensive irrigated farming, and its success is tied directly to the Yakima Project where hundreds of thousands of acres were brought into agricultural production (Doncaster 2011a). When the Yakima Project began in 1906, Washington ranked twenty-second in the United States for apple production. By 1933, Washington was number one (Doncaster 2011c). In 1930, the Yakima District (which the Washington State fruit industry identified as including the Yakima,



Kittitas, Franklin and Benton Counties) had 41% of Washington State's 2.1 million apple-bearing trees (Hampson 1933). In 1936, 99% of all fruit and nut crops in the Yakima Valley were grown by irrigation (Overholster 1936).

The Kennewick Division, located in southcentral Washington in the lower Yakima River drainage area in the vicinity of Kennewick, Washington, was the last unfinished component of the Yakima Project. Authorized on June 12, 1948, construction of the Kennewick Division commenced in 1953 and was completed in 1958, bringing a total of 474,000 acres under irrigation in the Yakima Project (Doncaster 2011b; U. S. Department of the Interior, Bureau of Reclamation, February 1955). The Kennewick Division provides both irrigation and hydroelectric power generation. The Kennewick Division irrigates lands in the lower end of the Yakima Valley, and its Chandler Power Plant generates power that is transferred into the power grid for distribution by the Bonneville Power Administration (BPA) (Defoe 2019). In 1958, Reclamation turned over to the KID the operation and maintenance contract of the newly completed Kennewick Division (U. S. Department of the Interior, Bureau of Reclamation, 1958a).

The Yakima Project had a significant impact on the livelihood, agriculture, and environment of the 175-mi-long Yakima Basin and turned it into one of the most productive agricultural areas in the United States (Doncaster 2011c). Of the Yakima Project divisions, the Kennewick Division is the most unique for its purpose and designation. The Kennewick Division was the second multipurpose development in the Yakima Project to provide both irrigation and hydroelectric power. It was also authorized as a replacement for lands taken by the federal government in the Kennewick area during and after World War II. No other division in the Yakima Project was authorized due to federal removal of irrigated lands from production. During World War II, the federal government condemned over 6,000 acres of irrigable land north of Kennewick as part of the lands acquired in 1943 for the top-secret Manhattan Project which established the Hanford Site. In 1947, the Atomic Energy Commission acquired an additional 7,000 acres for expanded plutonium production at Hanford during the Cold War. The Kennewick Division was sorely needed because of the displacement of the 7,000 acres in 1947 that reduced the available supply of certain vegetables and soft fruits to processors and shippers in Kennewick by an estimated 50 percent. The Mid-Columbia region of Washington has the earliest crop season in the Pacific Northwest so the reduction in irrigated farmland had an impact locally and nationally in food production.

The establishment of the Kennewick Division also replaced the 13,000 plus acres of farmland that had been taken for the Hanford Site, and an additional 1,000 irrigated acres that were flooded by McNary Dam during the mid-1950s.

The Kennewick Division was not only a replacement for lands removed from the Hanford Site for McNary Dam, but it was also established to create new job opportunities in the Kennewick area. It provided employment for returning servicemembers, farmers who had lost their land, and workers formerly employed in wartime installations in eastern Washington.

Construction on the Kennewick Division started in 1953 with the building of the Chandler Canal and the Kennewick Main Canal Division I. By 1955-1956, construction had progressed to Mile 24.7, the end of Division III of the Kennewick Main Canal. A section of Kennewick Main Canal Division III borders on the north/northeast side of the Project Area (Doncaster 2008).

The Kennewick Main Canal is divided into four divisions. Division I begins at the outlet of the Chandler Power and Pumping Plant discharge pipe at Station 0+61.1, and water travels to an area directly south of



Benton City at Station 351+55 for 6.6 mi. Division II runs from Station 351+545 past Benton City through the valley between Badger Mountain and the Horse Heaven Hills for ~7.7 mi, ending past where the Badger Siphon branches off the main canal at Station 766+08.04. Division III runs from Station 766+50 to Amon Siphon at Station 1301+27.30 for ~11 mi (U. S. Department of the Interior, Bureau of Reclamation, Facilities List, January 1958b). The siphon delivers water through a gravity-fed system to Division IV and the Amon Relift Pumping Plant. Division IV starts at Station 1301+27.30 and runs 18.5 mi to Station 2206+06.6 where the Main Canal empties into the Columbia River via the Hover Wasteway (U. S. Department of the Interior, Bureau of Reclamation, Facilities List, 1958b).

4 Research Design

NCRS developed a research design for the CR survey investigation to include well-defined objectives, expectations, and field and research methodology. The Research Design for the archaeological field survey of the Project Area integrates identification activities prepared prior to the startup of field work and serves as a framework to guide the archaeological survey methods. It addresses all phases of the investigation, from background research (i.e., literature review and records search) to report preparation. Additionally, an Inadvertent Discovery Plan (IDP) is included as a component of the Research Design.

4.1 Objectives and Expectations

The Washington State Standards for Cultural Resources Reporting (DAHP 2019) provides information for the formulation of this document through objectives and expectations. The objective of this research design is to assist the KID in ensuring compliance with regulatory guidelines for both previously recorded and unidentified archaeological resources should such properties exist within the Project Area. Expectations for the field work are based on the findings from the literature review and records search. The expectation is that there is a low probability of identifying prehistoric sites within the Project Area. Prehistoric sites in the general Project Area are stacked with stones. There is a potential for historic period sites to be documented within the Project Area. Historic period sites may be debris scatters or related to agricultural production. These expectations are based on the literature review and factors related to the Project Area including the distance from riverine settings and previous ground disturbance.

4.2 Field Methodology

This section describes the field methods to be implemented within the Project Area for the archaeological survey and shovel testing. Also included in this section is a description of the IDP for human remains. Archaeological survey transects will be spaced no further than 20 m (66 ft) apart. Archaeological survey transects will be meandered, if required, by vegetation or topography, at the discretion of the field leaders' best professional judgment. Survey areas at a 30-degree or greater grade will not be surveyed due to safety concerns.

Because the literature review did not locate any areas with high potential for containing cultural resources within the Project Area, subsurface testing locations will be determined by the lead field archaeologist following the archaeological survey. The field team will excavate up to 13 shovel test units (STUs), completing one STU for every acre. If a site is identified, additional STUs will be completed within the Project Area to determine the spatial distribution of the site. All material will be screened through ¼-inch hardware cloth. Sites or artifacts identified during the archaeological survey or shovel testing will be documented in the field through surface manifestation, e.g., area, material type, makers mark, date



range, and/or type of artifact (if possible). Global Positioning System (GPS) points and photographs will be collected for all sites and artifacts identified. Archaeological sites and isolates identified during the archaeological survey will be recorded according to the standards set by the Washington State Historic Preservation Officer (SHPO) (DAHP 2019). Both the survey transects and STU locations will be recorded on a GIS-generated map and included in this CR survey report.

4.3 Inadvertent Discovery Plan

An IDP provides field survey personnel with a planned process for responding to the possible discovery of human remains during the archaeological survey. The response to the inadvertent discovery of human skeletal remains on nonfederal and non-tribal land in the State of Washington is implemented under the Revised Code of Washington 68.50.645, 27.44.055, and 68.60.055. In the event that human remains are encountered during field-related project activities, field personnel will implement the following process, which adheres to the guidelines provided on the Washington State DAHP website https://dahp.wa.gov/archaeology/human-remains.

Step 1: Stop Work Immediately

If human skeletal remains are encountered during archaeological survey activities, field personnel will cease all activity that may cause further disturbance to those remains. The area of the find will be secured and protected from further disturbance.

In order to secure the discovery, a temporary fencing system such as posts and rope or similar protection measures will be placed around the discovery. Work in the immediate area of the discovery will be discontinued; however, work outside the discovery area may continue.

When an inadvertent discovery is encountered, staff will take measures to avoid further disturbance to the area. Cultural materials shall not be moved from the location of the discovery. Photographs shall not be taken of bones unless photographs are needed to assist in the determination of the remains to be human or animal and will be deleted as soon as possible (http://dahp.wa.gov/archaeology/human-remains).

Step 2: Notification Process

The finding of human skeletal remains will be reported to the County Medical Examiner/Coroner and local law enforcement in the most expeditious manner possible. The remains will not be touched, moved, or further disturbed. The County Medical Examiner/Coroner will assume jurisdiction over the human skeletal remains and make a determination as to whether the remains are forensic or non-forensic (https://dahp.wa.gov/archaeology/human-remains). In the event of the discovery of human remains, field staff will contact the following individuals:

Kennewick Irrigation District Program Manager

Jason McShane Phone: (509) 586-6012 x103 Email: JMcShane@kid.org

NCRS Project Manager David Harvey Phone: (509) 554-8648 Email: harveynwcultural@outlook.com Benton County Coroner William Leach Phone: (509) 736-2720 Email: william.leach@co.benton.wa.us

Benton County Sheriff's Office Sheriff: Tom Croskrey Phone: (509)735-6555 Email: www.co.benton.wa.us



Step 3: Jurisdictional Authority

If the County Medical Examiner/Coroner determines the remains are non-forensic, they will report that finding to the DAHP who will then take jurisdiction over the remains. The Coroner will contact the DAHP office within 24 hours of the discovery (http://www.dahp.wa.gov/programs/human-remains-program/idp-language). The DAHP will notify appropriate cemeteries and all affected tribes of the find. The State Physical Anthropologist will make a determination as to whether the remains are Indian or non-Indian and will also report that finding to appropriate cemeteries and affected tribes. The DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

DAHP Contact

Guy Tasa, State Physical Anthropologist Phone: (360) 586-3534 Email Guy.Tasa@dahp.wa.gov.

Project-related activities in the immediate vicinity of the discovery will remain on pause to avoid damage to the discovery until significance is determined and an appropriate treatment is identified and implemented through consultation among Reclamation, KID Program Managers, DAHP, and the tribes(s) under 36 Code of Federal Regulations 800.13 (b). During this period, project-related activities outside the discovery area may continue.

5 Literature Review and Records Search

For the CR Survey of the KID Schaefer Property Leveling Project, NCRS completed a literature review using historical maps and the Washington Information System for Architectural and Archaeological Records Data (WISAARD) website. The literature search identified existing archaeological information, such as site records and previous CR surveys within the one-mile search area surrounding the Project Area. The information was used to guide the field work and provide important contextual data for the CR survey report. The fieldwork included a pedestrian survey and shovel testing of selected areas within the Project Area. Additionally, a final cultural resources survey report included written and photographic documentation of the field investigation and a discussion of survey results and recommendations.

5.1 General Land Office

NCRS reviewed the 1863 General Land Office (GLO) map for historical land use in the vicinity of the Project Area. The GLO map indicates no features were present at that time within or near the Project Area (Figure 3).

5.2 1917 Historic Topographic Map

A review of the 1917 topographic map indicates that no features were present within the Project Area at that time. North and east of the Project Area was the Northern Pacific Railroad (Figure 4).





Figure 3. 1863 General Land Office Map of the Project Area





Figure 4. 1917 Topographic Map and the Project Area



5.3 WISAARD Archival Findings

NCRS conducted a search of the WISAARD archives for previous CR surveys and prehistoric/historic period sites recorded within a one-mile radius of the Project Area. Table 2 provides a summary of the previous cultural resources investigations conducted within this one-mile literature review search area.

NADB#	Title	Summary	In Proj. Area	Reference
1681387	Historic Resources	There was installation of ~27,000 linear ft of	No	Doncaster
	Survey Kennewick	lining along the Kennewick Division Main		2011a
	Main Canal	Canal. The investigation resulted in the finding		
	Station 737+00 to	of an adverse effect to the Main Canal. A		
	1008+17 lining	section of the Kennewick Main Canal Division		
	near Badger,	III is adjacent to the Project Area. The canal		
	Washington	has been determined eligible for listing in the		
		National Register		
1689655	Cultural	An archaeological survey and shovel testing	No	Woody
	Resources	were conducted of 2.36 acres. No cultural		2017
	Identification	resources were identified.		
	Survey of the			
	Robert Cox 2017			
	NRCS EQUIP			
	Project. NRCS			
	EQUIP Contract			
	#740546170Y0			
1695910	Cultural Resource	An archaeological investigation was	No	Davis et
	Investigations on	conducted of ~10,300 acres for a wind farm		al. 2021
	Privately Owned	project. Two precontact and six historic		
	Land for the	archaeological sites were identified. The		
	Horse Heaven	prehistoric sites were stacked with rock		
	Wind Farm	features. Both historic sites were debris		
	Project, Benton	scatters.		
	County,			
	Washington			
1696815	Cultural	An archaeological survey and shovel testing	No	Fleming
	Resources	were conducted for a residential development		and
	Inventory of	and riding area covering ~23 acres. No		Gallagher
	Proposed L7	cultural resources were identified.		2022
	Ranch Project,			
	Benton City,			
	Benton County,			
	Washington			
410774	Kennewick	The investigation identified a section of the	No	Doncaster
	Division Main	Kennewick Main Canal, ~11% in Division II and		2011b
	Canal Station	89% in Division III. The entire Kennewick Main		
	737+00 to	Canal has been recommended eligible for		
	1008+17	listing in the National Register.		

Table 2. Findings from the Literature Review of the WISAARD



NADB#	Title	Summary	In Proj. Area	Reference
Not Available	Archaeological Survey Report for the Kennewick Irrigation District for the Title Transfer Project	An archaeological investigation was conducted for the title transfer from the Bureau of Reclamation to the KID. The project covered 1,610 acres and identified nine cultural resources recommended eligible for listing in the National Register	No	Sharpe et al. 2021
	Benton County, Washington			
Not Available	Cultural Resources Survey Report for the KID Title Transfer from the Bureau of Reclamation , Benton County, WA	A cultural resources investigation was conducted for the title transfer from the Bureau of Reclamation to the KID. The project covered 1,610 acres and identified nine cultural resources (historic properties) recommended eligible for listing in the National Register.	No	Harvey 2020

Table 2. Findings from the Literature Review of the WISAARD

A section of the Kennewick Main Canal Division III (Property ID: 537371) is adjacent to the Project Area and is recommended eligible for listing in the National Register (Borth 2020; Harvey 2020).

5.4 Summary of the Literature Review

The literature review identified seven previous cultural resources investigations and one National Register eligible historic period site within one mile of the Project Area. No previous cultural resources investigations have been conducted within the Project Area. A section of the Kennewick Main Canal Division III is located adjacent to the Project Area and has been determined eligible for listing in the National Register.

Although no archaeological sites were identified within the literature review search area, the site types in the general area (but outside the literature search area) tend to be a mixture of both prehistoric and historic period resources. Prehistoric sites are primarily stacked stones. Historic period sites are mostly debris scatters.

6 Field Survey Results

NCRS archaeologists conducted a pedestrian survey of the Project Area on April 10 and April 11, 2023 (Figure 5). Information from the pedestrian survey was used to identify the sites for excavation of the 13 STUs in the Project Area. The fieldwork was led by Molly Swords, Senior Archaeologist, and Ellen Whitney, Field Technician. Field conditions were generally cloudy and windy, with high temperatures reaching ~ 55°F (13°C).





Figure 5. Pedestrian Survey Transects and Shovel Test Locations in the Project Area



6.1 Pedestrian Survey

The survey team walked the Project Area using transects that were spaced ~ 66 ft (20m) apart. The survey was generally conducted in north-south transects in the southern portion of the Project Area and northeast-southwest transects throughout the northern portion. The survey area consisted of very steep hills to the south and more moderate slopes to the north. The northern portion had been graded around the canal, and disturbance could be seen to the middle of the western portion of the Project Area. The eastern portion of the Project Area had modern irrigation and the landowner noted that the area would not be part of the land leveling project. The northern and northwestern sides of the Project Area are adjacent but are not in the National Register eligible Kennewick Main Canal Division III.

Vegetation in the Project Area included an assortment of local grasses and invasive weeds. Ground visibility throughout the Project Area was excellent due to the steepness of the hills and a large portion having been graded. Ground visibility ranged from 60% to 80%.

The survey team observed several contemporary bullets during the pedestrian survey. The landowner said that he allows people to conduct target practice on his land.

No National Register eligible cultural resources were identified during the pedestrian survey of the Project Area. Representative photos of the Project Area are provided in Figures 6 through 9.



Figure 6. Northern Project Area (Aspect: East)





Figure 7. Southern Project Area (Aspect: South)





Figure 8. Project Area with Graded Area near Kennewick Main Canal Division III (Aspect: North)



Figure 9. Project Area with Graded Area near Canal (Aspect: Northeast)



6.2 Subsurface Testing

After completion of the pedestrian survey on April 11, 2023, NCRS archaeologists conducted subsurface testing of the Project Area. The archaeologists dug a total of 13 STUs in the Project Area. Field conditions throughout the Project Area consisted mainly of very fine-grained olive-brown silty sand. Most STUs were truncated prior to target depth of ~3 ft (1 m) due to either hard-pan sediments or a rock layer that could not be penetrated with a breaker bar. The radius of the STUs was ~13 in. No cultural resources were identified during subsurface testing. Appendix A provides a summary of the shovel test data for each STU.

7 Conclusions and Recommendations

Based on the findings from the literature review and archaeological survey, it is concluded that no adverse effects to historic properties are likely to occur within the Project Area with completion of the proposed land leveling activities. Thus, it is recommended that no further archaeological investigations are required for the KID project.

The National Register eligible Kennewick Main Canal Division III is adjacent to but not within the Project Area. The canal is located to the north and west of the Project Area. Thus, it is also recommended that all project-related activities remain outside the footprint of the canal, and that project oversight ensure that all project personnel avoid any contact with the canal while conducting work activities in the Project Area.



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APPENDIX A

Shovel Test Unit Data for the Project Area

This appendix provides a summary of the subsurface testing data collected from the 13 STUs hand-excavated within the Project Area. See Tables A-1 through A-13.

List of Tables

Table A-1. Data for STU - 01	2
Table A-2. Data for STU - 02	2
Table A-3. Data for STU - 03	3
Table A-4. Data for STU - 04	3
Table A-5. Data for STU - 05	4
Table A-6. Data for STU - 06	4
Table A-7. Data for STU - 07	5
Table A-8. Data for STU - 08	5
Table A-9. Data for STU - 09	6
Table A-10. Data for STU - 10	6
Table A-11. Data for STU - 11	7
Table A-12. Data for STU - 12	7
Table A-13. Data for STU - 13	8



Photo	Depth	Soil Description	Artifacts/Features
	0-80 cm	70% Sand/30% Silt Sand: very fine grained, olive brown	None
Reason terminated:	Large rock		

Table A-1. Data for STU - 01

Table A-2. Data for STU - 02

Photo	Depth	Soil Description	Artifacts/Features
	0-95 cm	70% Sand/20% Silt/10%Gravel Sand: very fine grained, olive brown Gravel: 2-10mm, rounded	None
Reason terminated:	Hardpan		



Photo	Depth	Soil Description	Artifacts/Features
	0-50 cm	70% Sand/20% Silt/10%Gravel Sand: very fine grained, olive brown Gravel: 2-10mm, rounded	None
Reason terminated:	Hardpan		

Table A-3. Data for STU - 03

Table A-4. Data for STU - 04

Photo	Depth	Soil Description	Artifacts/Features
	0-90 cm	70% Sand/30% Silt Sand: fine grained, olive brown	None
Reason terminated:	Reached dept	h	



Photo	Depth	Soil Description	Artifacts/Features
	0-100 cm	70% Sand/30% Silt Sand: fine grained, olive brown	None
Reason terminated:	Reached depth		

Table A-5. Data for STU - 05

Table A-6. Data for STU - 06

Photo	Depth	Soil Description	Artifacts/Features
	0-95 cm	70% Sand/30% Silt Sand: fine grained, olive brown	None
Reason terminated:	Reached Dept	th	



Photo	Depth	Soil Description	Artifacts/Features	
	0-100 cm	70% Sand/30% Silt Sand: fine grained, olive brown	None	
Reason terminated:	Reached Dept	Reached Depth		

Table A-7. Data for STU - 07___

Table A-8. Data for STU - 08

Photo	Depth	Soil Description	Artifacts/Features
	0-50cm	70% Sand/30% Silt Sand: fine grained, olive brown	Bullet casing/blasting cap/ made of copper or zinc. Unlikely historic.
Reason terminated:	Rock layer		



Photo	Depth	Soil Description	Artifacts/Features
No picture taken	0-30 cm	70% Sand/30% Silt Sand: fine grained, olive brown	@30c, 9mm Lugar casing
Reason terminated:	Rock layer		

Table A-9. Data for STU - 09

Table A-10. Data for STU - 10

Photo	Depth	Soil Description	Artifacts/Features
	0-65 cm	70% Sand/30% Silt Sand: fine grained, olive brown	None
Reason terminated:	Hardpan		



Photo	Depth	Soil Description	Artifacts/Features
	0-85 cm	70% Sand/30% Silt Sand: fine grained, olive brown	None
Reason terminated:	Hardpan		

Table A-11. Data for STU - 11

Table A-12. Data for STU - 12

Photo	Depth	Soil Description	Artifacts/Features
Reserved and and and and and and and and and an	0-95 cm	70% Sand/30% Silt Sand: fine grained, olive brown	None
Reason terminated:	Hardpan		



Photo	Depth	Soil Description	Artifacts/Features
	0-95 cm	70% Sand/30% Silt Sand: fine grained, olive brown	None
Reason terminated:	Hardpan		

Table A-13. Data for STU - 13