

CULTURAL RESOURCES REPORT COVER SHEET

DAHP Project Number: 2021-07-04728

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Title of Report: Cultural Resources Assessment for the Freeman Logistics Development Project

Date of Report: 5/18/2022

County: Pierce Sections: 17,20 Township: 20 N Range: 4 E

Quad: NA Acres: 20.8

PDF of report submitted (REQUIRED) ☒ Yes

Historic Property Inventory Forms to be Approved Online? ☐ 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

Were Human Remains Found? ☐ Yes DAHP Case # ☒ No

DAHP Archaeological Site #: NA

Final

FREEMAN LOGISTICS DEVELOPMENT PROJECT, PUYALLUP, PIERCE COUNTY, WASHINGTON

Cultural Resources Assessment

Prepared for
Vector Development Company

May 2022



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ABSTRACT

Environmental Science Associates (ESA) was retained by Vector Development Company (Vector) to conduct a Cultural Resources Assessment (CRA) for the Freeman Logistics Development Project (Project) located at 4723–5117 Freeman Road E, in Pierce County, Washington. The 20.8-acre Project Area is currently used for residential and agricultural purposes. The Project will demolish existing buildings and structures, grade the property, and construct two new warehouses, Building A (approximately 330,000 square feet) and Building B (102,000 square feet). The facility will also include 202 paved parking spaces. General surface grading for buildings and parking lots will generally require less than 1 meter (3.3 feet) of excavation, although, in some cases, building foundations and utilities may extend up to 2 meters (6.6 feet) below surface (bs). This report represents a revision to the initial CRA submitted in October 2021.

The Project is subject to Chapter 43.21C of the Revised Code of Washington (RCW) – the State Environmental Policy Act (SEPA). SEPA requires that Historic and Cultural Preservation be considered as part of the environmental review process. This report has been written to meet the standards required by SEPA. The local authority administering this SEPA action is the City of Puyallup. The first phase of the CRA was conducted to support the initial SEPA application for the Project. During SEPA review, the Puyallup Tribe of Indians provided comment that due to the Project’s close proximity to the former channel of the Puyallup River, known previous ownership by Puyallup tribal members through Indian Allotments, and location within the former bounds of the Puyallup Reservation, they were requesting additional subsurface survey on a more closely spaced 15-meter interval. The revision to this report is undertaken to fulfill this comment.

Background research and literature review for the current phased CRA has been informed by a desktop analysis report previously completed for an earlier version of the Project (Berger 2020). The desktop analysis report is included in its entirety as Appendix B. ESA updated and supplemented this research as needed in August 2021 and March 2022. ESA then conducted a surface and subsurface archaeological survey of the Project Area. Phase 1 of the CRA consisted of a pedestrian survey and subsurface investigation totaling 69 shovel/auger probes at 30-meter intervals and excavated to a target depth of 7 feet (210 cm) bs in August 2021. In March and April 2022, a Phase 2 survey included a pedestrian survey and the excavation of an additional 206 shovel/auger probes at 15-meter intervals through the Project Area. The additional shovel/auger probes were excavated to a target depth of 7 feet (210 cm) bs. No archaeological sites, isolates, or potential cultural indicators (such as concentrations of charcoal, ash, heat-affected soil, or shell) were identified during the Phase 1 and Phase 2 surveys.

No archeological sites, isolates, or potential cultural indicators such as fire modified rock, or dense concentrations of ash, shell, heat affected soil, or dark greasy organic materials were identified during the surveys. The assessment found that the Project Area is entirely within the floodplain of the Puyallup River. It has been plowed and/or graded across its surface, and deeper deposits represent massive beds of alluvium with no buried surfaces, laminations, or other distinct contexts with an elevated probability of

containing cultural resources. All built environment resources have been previously evaluated for listing on the NRHP and have been determined not eligible for listing.

ESA recommends that no further cultural resources work be conducted as part of the Project. ESA does recommend that an Inadvertent Discovery Plan (IDP) be in place to establish protocols and chains of communication in the event that cultural resources are identified during construction of the Project.

The authors of this report meet the Secretary of the Interior Professional Qualifications Standards for Archaeologist and Historian.

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1. INTRODUCTION

Environmental Science Associates (ESA) was retained by Vector Development Company (Vector) to conduct a Cultural Resources Assessment (CRA) for the Freeman Logistics Development Project (Project) located at 4723–5117 Freeman Road E, in Pierce County, Washington. The Project is located near the City of Puyallup, approximately 0.25 mile north of the Puyallup River, in Sections 17 and 20 of Township 20 North, Range 4 East on the Puyallup, Washington 7.5' series topographic map (Figure 1; Figure 2). It is located on Pierce County tax parcel numbers 0420174075, 0420201039, 0420201066, 0420201034, 0420201052, 0420201045, 0420201040, 0420205016, 0420201042, 0420201027, 0420201101, 0420205017, and 0420205003. This report represents a revision to the initial CRA submitted in October 2021.

1.1 Project Description

The Project Area is currently used for residential and agricultural purposes (Figure 2). As a part of Project construction, the existing structures within the Project Area will be demolished. The Project will result in the construction of two new warehouse structures, Building A (approximately 330,000 square feet) and Building B (102,000 square feet). In addition to the two buildings, the facility will include 202 parking spaces. The Project Area will be graded across its extent, and supporting infrastructure, such as revisions to the existing roadways, and utilities, will be constructed. The Project design is included as Appendix A.

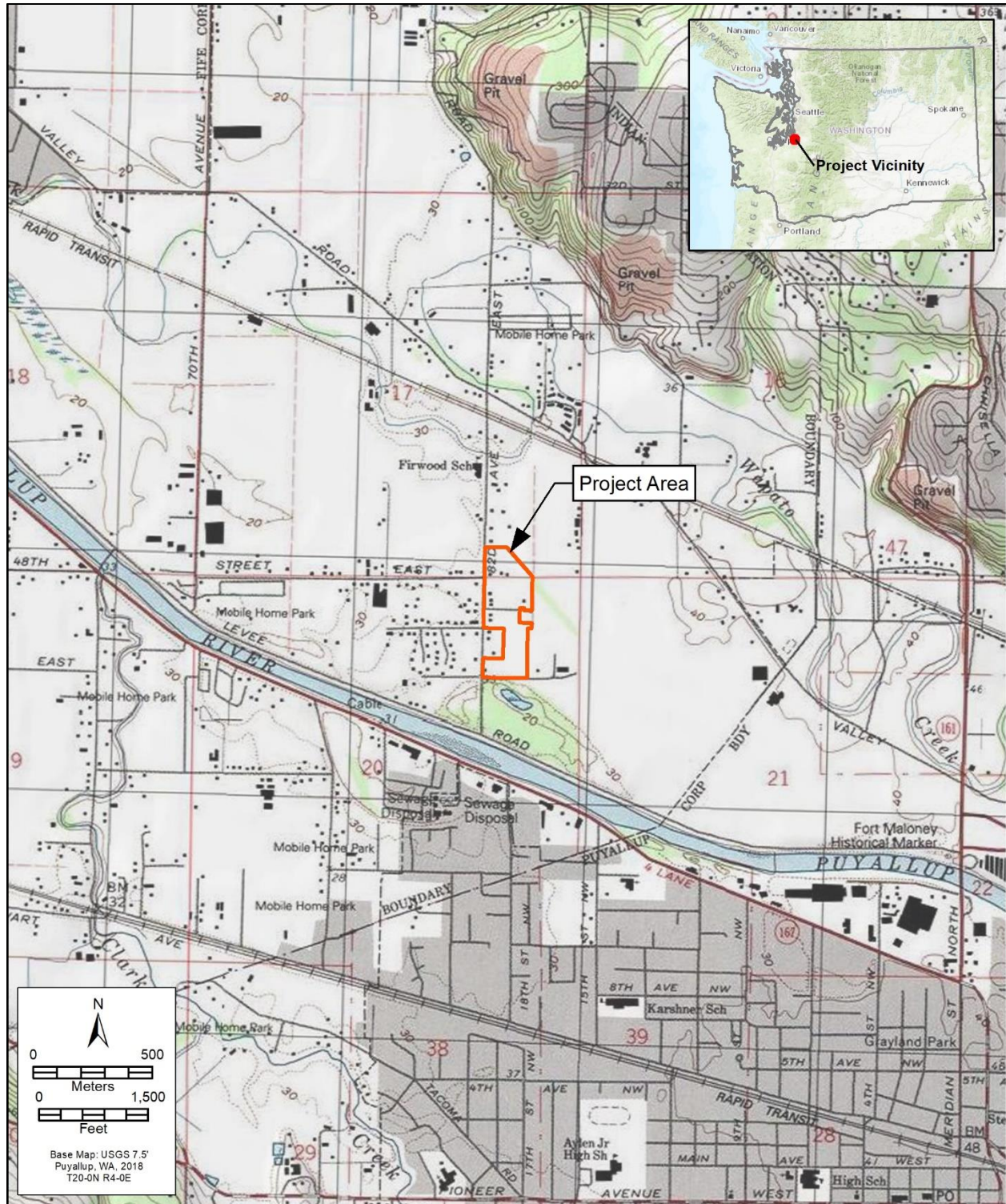
1.2 Regulatory Environment

Some development projects within the State of Washington are subject to Chapter 43.21C of the Revised Code of Washington (RCW) – the State Environmental Policy Act (SEPA). SEPA requires that Historic and Cultural Preservation be considered as part of the environmental review process. This report has been written to meet the standards required by SEPA. It has been prepared by a professional archaeologist who meets the requirements of the U.S. Secretary of the Interior. The local authority administering this SEPA action is the City of Puyallup (City). The City reviews cultural resources within its jurisdiction in cooperation with the Washington State Department of Archaeology and Historic Preservation (DAHP). During SEPA review, the Puyallup Tribe of Indians provided comment that due to the Project's close proximity to the former channel of the Puyallup River, known previous ownership by Puyallup tribal members through Indian Allotments, and location within the former bounds of the Puyallup Reservation, they were requesting additional subsurface survey on a more closely spaced 15-meter interval. The revision to this report is undertaken to fulfill this comment.

Additional laws that apply to archaeological projects conducted within the State of Washington include: Archaeological Sites and Resources (RCW 27.53), Indian Graves and Records (RCW 27.44), Human Remains (RCW 68.50), and Abandoned and Historic Cemeteries and Historic Graves (RCW 68.60).

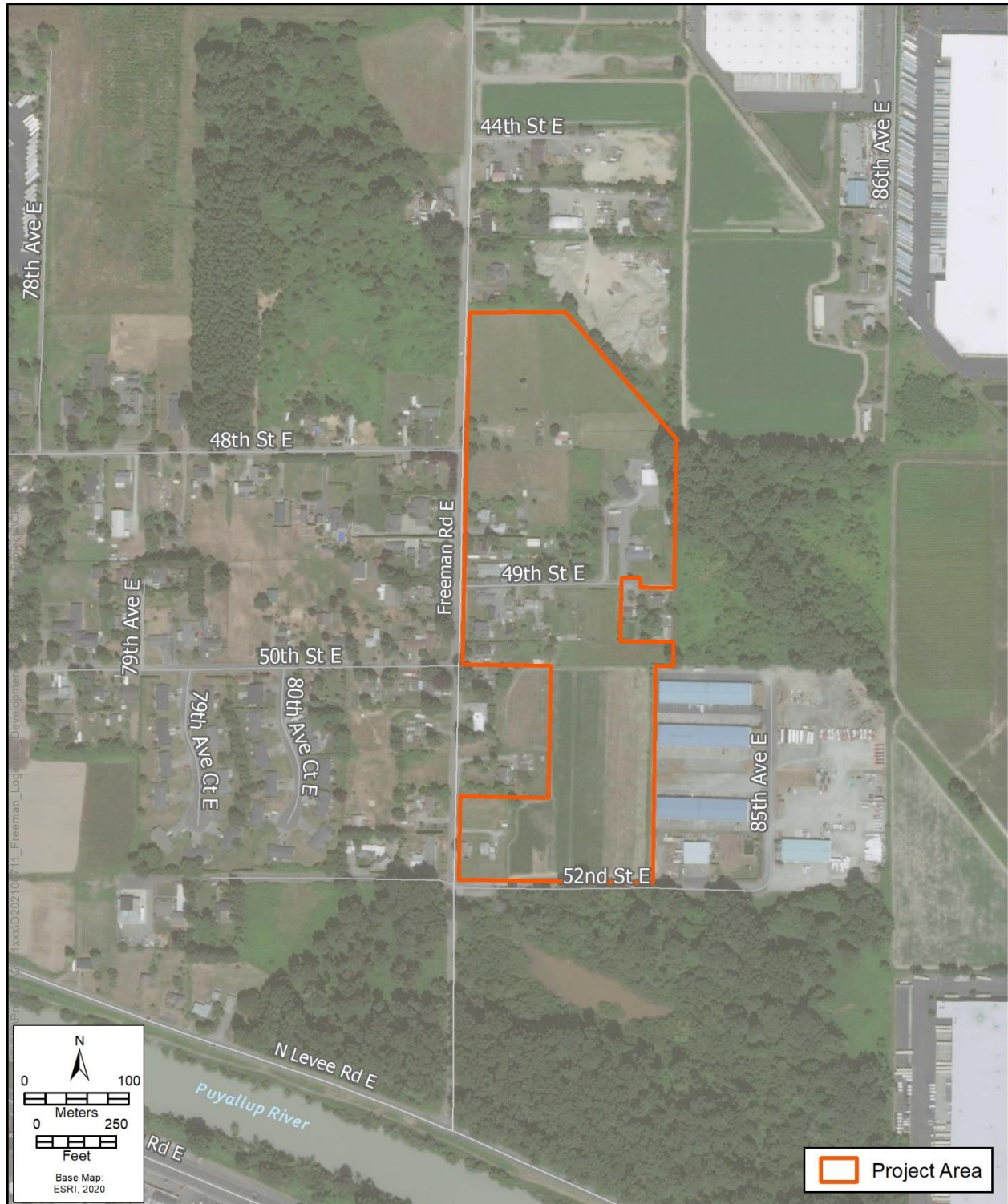
1.3 Project Area

The Project Area is comprised of approximately 20.8 acres and is currently split between single-family residential and agricultural uses. Project construction will occur across the entire Project Area. Following demolition of existing buildings and structures, the Project Area will be graded. General surface grading for buildings and parking lots will typically require less than 1 meter (3.3 feet) of excavation. In some cases, building foundations and utilities may extend up to 2 meters (6.6 feet) below surface (bs).



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Figure 1
Location of the Freeman Logistics Development Project Area



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Figure 2
Aerial view of the Freeman Logistics Development Project Area

2. PROJECT SETTING

2.1 Research Methods

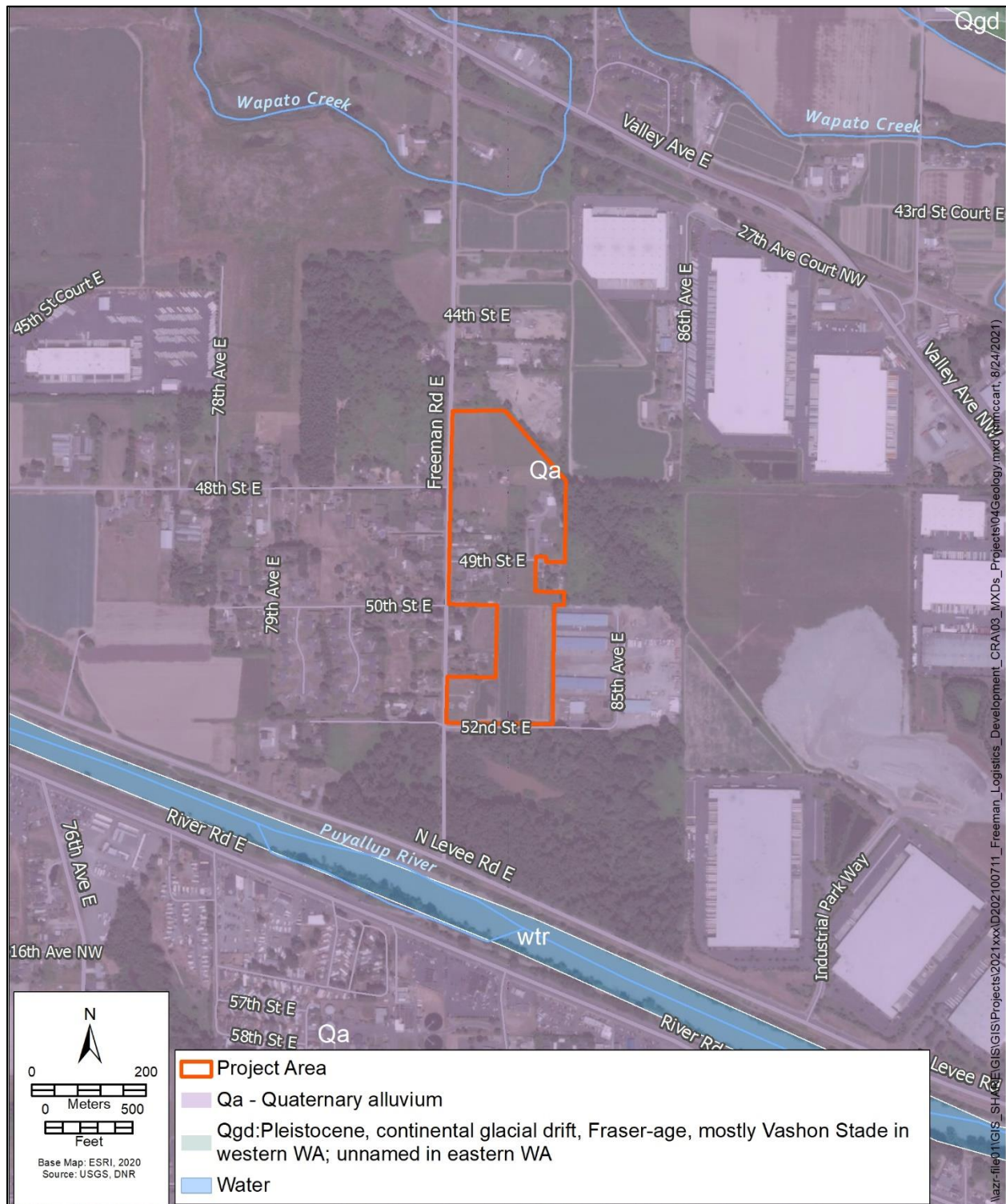
The majority of the background research and literature review for this Cultural Resources Assessment is based off of a desktop analysis report previously completed for an earlier version of the Project (Berger 2020). The desktop analysis report is included in its entirety as Appendix B.

The report sections presented here include additional information necessary to support the archaeological field survey, address the current version of the Project, and provide additional detail when appropriate. This updated research was conducted in a 1-mile Study Area surrounding the Project Area. Research included a review of the Washington Information System for Architectural and Archaeological Records Data (WISAARD) system maintained by DAHP, and digital collections of the U.S. Bureau of Land Management, Washington State Archives, Tacoma Public Library, University of Washington Libraries, Pierce County Assessor, and other online resources within ESA's research library.

In addition, ESA contacted cultural resources technical staff at the Nisqually Indian Tribe, Puyallup Tribe of Indians, and Squaxin Island Tribe to solicit tribal information related to the Project Area. The Nisqually Indian Tribe responded that they had no specific knowledge regarding resources within or adjacent to the Project Area. The Puyallup Tribe of Indians had raised concerns about potential cultural resources within the Project Area during the initial rezoning application for the Project. This concern led to the implementation of a cultural resources literature review for the project (see Berger 2020), and the subsequent CRA survey assessments conducted by ESA in 2021, and this 2022 supplementary effort. During review of the SEPA application that the initial version of this report supported, the Puyallup Tribe requested additional subsurface survey, at 15-meter intervals. Following the receipt of this comment ESA consulted with The Puyallup Tribe Cultural Resources Department to development the field methods for the Phase 2 investigation.

2.2 Environmental Setting

No additions to the environmental setting contained in the existing desktop assessment report for the Project were identified during ESA's research. However, maps of the geological and soils conditions are presented here for reference. The Project Area is within the floodplain of the Puyallup River to the south and Wapato Creek to the north. Flooding from these waterways has deposited deeply bedded Holocene alluvial material across the Project Area (Berger 2020; Figure 3, Figure 4). The Puyallup fine sandy loam and Sultan silt loam soils mapped in the Project Area are low to moderate energy alluvial soils (NRCS 2000, 2012). The alluvial parent materials in which these soils developed were deposited during the Holocene and are considered capable of having buried and preserved past traces of human activity (if present).



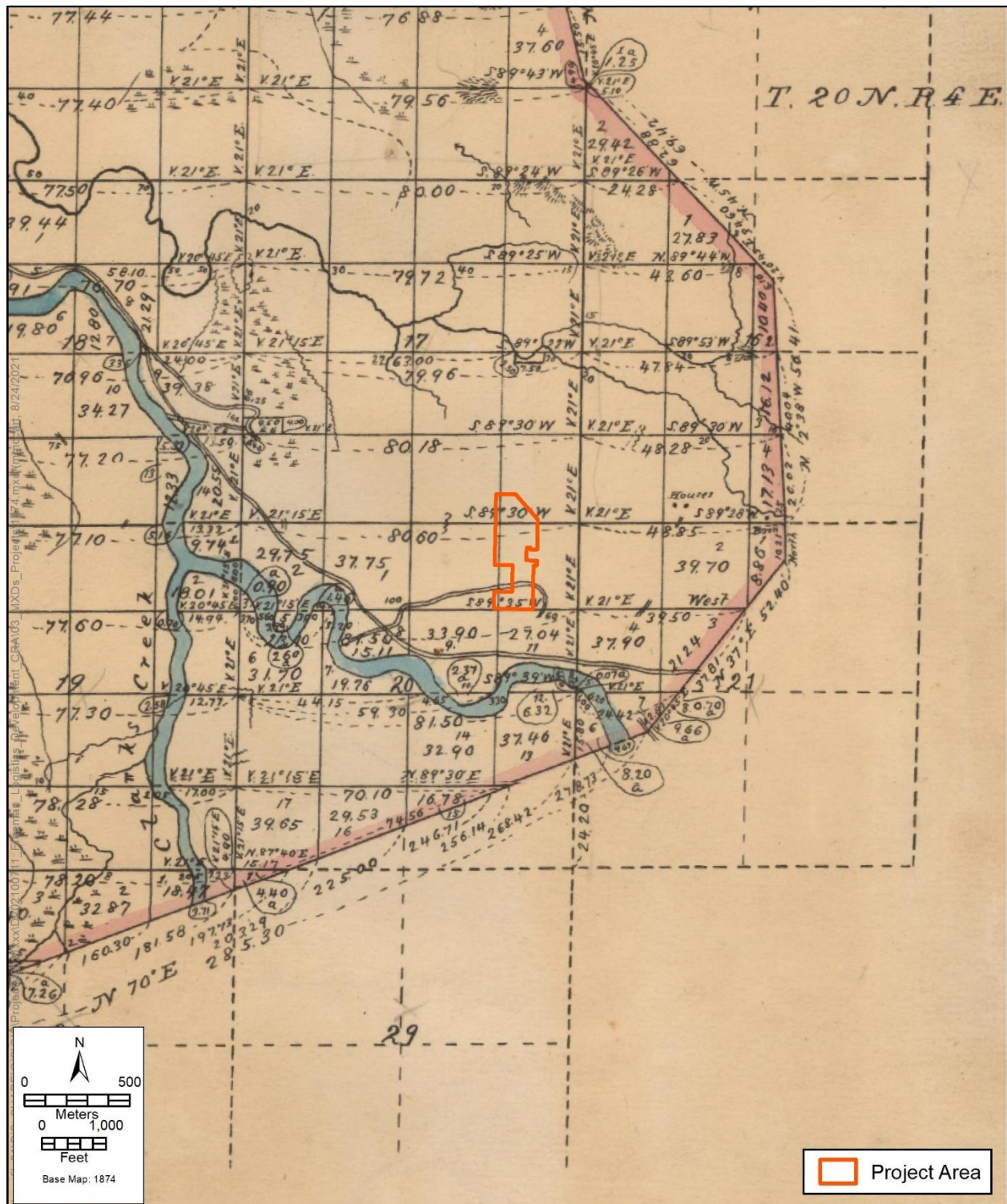
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Figure 3
Geological map of the Freeman Logistics Development Project Area

2.3 Cultural Setting

As discussed previously by Berger (2020), the Project Area is located within the ancestral and reservation lands of the *spuyaləpabš*, who are also known today as the Puyallup Tribe of Indians (Douglas 2016; Lane 1975; Spier 1936; Suttles and Lane 1990). Coast Salish groups that live along Commencement Bay and surrounding lands have used the Project Area and its vicinity since time immemorial for various levels of habitation and resource gathering.

When the area was surveyed in 1873, a southeast/northwest wagon road to Tacoma was identified along the eastern bank of the Puyallup River south of the Project Area; surveyors also noted a “Road to Indian Farm” within the Project Area vicinity (Figure 5) (U.S. Surveyor General 1873:3-20, 1874). The Project Area is within the late 19th century Puyallup Reservation and contains a portion of the land allotments of Coltus Jim (Jonas Tuckanom) and Kany-Arka-Jim (James Taylor) (Berger 2020). The Dawes Act of 1887 divided reservation lands into individual allotments; in 1893, allotments not required for homes or schools were put up for public auction. The program ended in 1934 and resulted in a large portion of these lands being lost or sold off due to various federal enactments (Berger 2020). By 1950, approximately ten families still owned their assigned lands (Puyallup Tribe of Indians 2017). The Puyallup began asserting their rights to lands and fishing in the mid-20th century. In the 1980s, the Puyallup Tribe successfully settled a claim to regain a portion of their lands.



Source: U.S. Surveyor General 1874

Figure 5
1874 General Land Office map showing the Project Area
within the Puyallup Reservation

2.4 Previous Cultural Resources Work

ESA conducted an updated records search of DAHP's WISAARD system on August 5, 2021, and April 22, 2022 (DAHP 2022a). No additional cultural resources assessments have been conducted within the Study Area since the previous desktop analysis report (Berger 2020; DAHP 2022a). No National Register of Historic Places (NRHP)-listed, determined Eligible, or recommended Eligible built environment resources are within or immediately adjacent to the Project Area. No Traditional Cultural Properties have been recorded within the Study Area. No additional cemeteries have been recorded within the Study Area. Five archaeological resources were identified within the Study Area (Table 1). Two of these resources, 45-PI-106 and 45-PI-1542, have been recorded since the initial desktop assessment for the Project (Kretzler 2022; Morris 2022). Each of the five recorded sites is related to historic period activity.

TABLE 1
RECORDED ARCHAEOLOGICAL RESOURCES WITHIN 1.0 MILE OF THE PROJECT AREA

NRHP Status	Site Number	Site Name	Site Type	Materials / Features Observed	Depth	Date / Period / Phase
Not evaluated	45-PI-106	--	Historic Debris Scatter Concentration	Glass and metal fragments	surface to 45+ cmbs	ca mid-1900s
Not evaluated	45-PI-826	--	Historic Debris Scatter/ Concentration, Historic Features	Glass and metal fragments in two clusters and an associated fence	Surface	1900–1960
Not Evaluated	45-PI-1307	--	Historic Debris Scatter/ Concentration		Surface to 40 cmbs	Early 1900s
Not Evaluated	45-PI-490	--	Historic Debris Scatter/ Concentration, Historic Features	Buried pit feature filled with historic debris including glass and ceramic vessels, personal items	40-100 cmbs	1920s
Determined Not Eligible	45-PI-1542	--	Historic Debris Scatter/ Concentration	Concrete and metal slab with associated artifacts, brick, concrete, glass, ceramic – possibly from a structure	surface	Unknown, likely 20th century

cmbs = centimeters below surface

Source: DAHP 2022a

2.4.1 Historic Built Environment Resources

There are 12 historic-aged¹ built environment resources within the Project Area that meet the minimum age threshold for listing in the NRHP (Table 2). Each of these structures has been previously determined Not Eligible for Listing in the NRHP.

¹ Historic-aged built environment resources are those that would meet the NRHP minimum age threshold for consideration as a Historic Property (50 years or older) at the time of Project construction. This Project is anticipated to begin in 2022. Therefore, resources built in or before 1972 are considered historic-aged and included in this review.

ESA reviewed Pierce County Assessor records to further identify all buildings located on parcels in the Project Area. Some addresses for previously assessed resources have been updated since their initial inventory. ESA did not identify any information that would suggest a need to reevaluate any of the previous determinations. All of the 12 properties will be demolished as part of Project construction.

TABLE 2
HISTORIC-AGED BUILT ENVIRONMENT RESOURCES WITHIN THE PROJECT AREA

Address	Tax Parcel	Current Owner	Use	Register Status	Year Built²	DAHP Property ID
8319 49th Street E / 1801 22nd Avenue NW	0420205017	Westby, Lyle & Lavon	SFR	Determined Not Eligible	1900, 1981	680789
8305 49th Street E / 1817 22nd Avenue NW	0420201040	Annon, Robert	SFR	Determined Not Eligible	1942, 1963	680790
8218 49th Street E / 1904 22nd Avenue NW	0420201042	Shadle, Danny & Wendy	SFR	Determined Not Eligible	1954, 1975	680794
2105 N Freeman Road / 4923 Freeman Road E	0420201027	Keaton, Samuel	SFR	Determined Not Eligible	1935, 1992	680797
4815 Freeman Road E	0420201066	Galloway, Gale	SFR w/ Detached Garage	Determined Not Eligible	1945	680785
4823 Freeman Road E	0420201034	O'Connor, Michael & Teresa	SFR w /Detached Garage	Determined Not Eligible	1900, 1950	680786
4827 Freeman Road E	0420201052	Lane, Alisha & Jereme	SFR	Determined Not Eligible	1948, 1966	680792
4917 Freeman Road E	0420201045	Grelis, Dennis	SFR Building 1 w/ Detached Garage	Determined Not Eligible	1900, 1961	680796
8204 49th Street E / 1918 22nd Avenue NW	0420201045	Grelis, Dennis	SFR Building 2	Determined Not Eligible	1900, 1961	680846
8212 49th Street E / 1912 22nd Avenue NW	0420201045	Grelis, Dennis	SFR Building 3	Determined Not Eligible	1900, 1961	680795
5117 Freeman Road E	0420205003	Johnson, Richard & Carol	SFR Building 2 w/ Detached Garage	Determined Not Eligible	1945, 1971 (garage 1963, 1980)	680878
5123 Freeman Road E	0420205003	Johnson, Richard & Carol	SFR Building 1	Determined Not Eligible	1940, 1968	680874

Source: Pierce County Assessor 2022; DAHP 2022a.

Notes: SFR = Single-Family Residence. ¹ = Old and current address listed; ² = Second date is remodel.

2.5 Expectations

2.5.1 Precontact-Era Archaeological Resources

The Project Area is classified as High to Very High probability in DAHP's Statewide Predictive Model for containing precontact-era archaeological sites (DAHP 2010). The Statewide Predictive Model is a tool used by archaeologists and planners to evaluate potential archaeological risks on a broad scale. The model was developed to statistically evaluate multiple environmental factors (e.g., elevation, slope percent, aspect, distance to water, soils, and landforms) in order to predict where archaeological resources might be found (Kauhi 2013). It is not a substitute for conducting site-specific subsurface investigations.

Based on the background research for the Project Area, ESA concurs with DAHP's classification of the precontact archaeological sensitivity of the Project Area. ESA anticipates that the most likely types of precontact resources that would be encountered are resource gathering or processing sites, as well as potential small camp or kill locations. The proximity to the Puyallup River suggests that the area was likely used by precontact peoples. Furthermore, the presence of deeply bedded, low to moderate energy alluvial deposits indicates that material evidence of that use may be buried and preserved within the soils.

2.5.2 Historic-Era Archaeological Resources

ESA considers the Project Area to have a moderate to high probability for containing historic period cultural resources. The area was traversed by a historic road and is known to have been allotments farmed by members of the Puyallup Tribe of Indians during the late 19th and early 20th centuries. Later historic period agricultural use has also occurred within the Project Area. Concentrations of artifacts or features related to historic land use may still be present within the Project Area.

2.5.3 Historic Built Environment Resources

ESA considers that the Project will not have an effect on any register-eligible historic period built environment resources. The 12 historic-aged properties within the Project Area have been previously determined Not Eligible for listing in the NRHP.

3. ARCHAEOLOGICAL ASSESSMENT

3.1 Survey Methods

ESA archaeologists conducted two phases of archaeological survey for the Project. Phase 1 was performed between August 9 and 13, 2021, by ESA archaeologists Micca Metz, Gary Geiger, Robert Mitchell, and Kate Norgon. Phase 2 was performed between March 30 and April 13, 2022, by ESA archaeologists Tom Ostrander, Chris Yamamoto, Emily Scott, Gary Geiger, Robert Mitchell, Jesse Van De Vanter, David Hanna, Samuel Larson, and Adam Frugé. Both survey efforts consisted of pedestrian (surface) and subsurface investigations. Weather conditions at the time of survey consisted of clear skies and warm temperatures, with intermittent precipitation. Prior to the Phase 1 and Phase 2 surveys, ESA requested a utility locate of the Project Area per RCW 19.122.

3.1.1 Surface Survey

The surface survey was conducted across the Project Area prior to the subsurface investigations. Gridded transects were aligned across the Project Area during the Phase 1 and Phase 2 efforts at approximate 20-meter (66-foot) and 15-meter (49-foot) intervals, respectively. The goals of the surface survey were to identify major landforms and their formation processes, find areas of significant historic and modern disturbance, and select locations suitable for the excavation of subsurface shovel/auger probes (probes). The results of the surface survey were used to inform the subsurface investigations.

3.1.2 Subsurface Survey

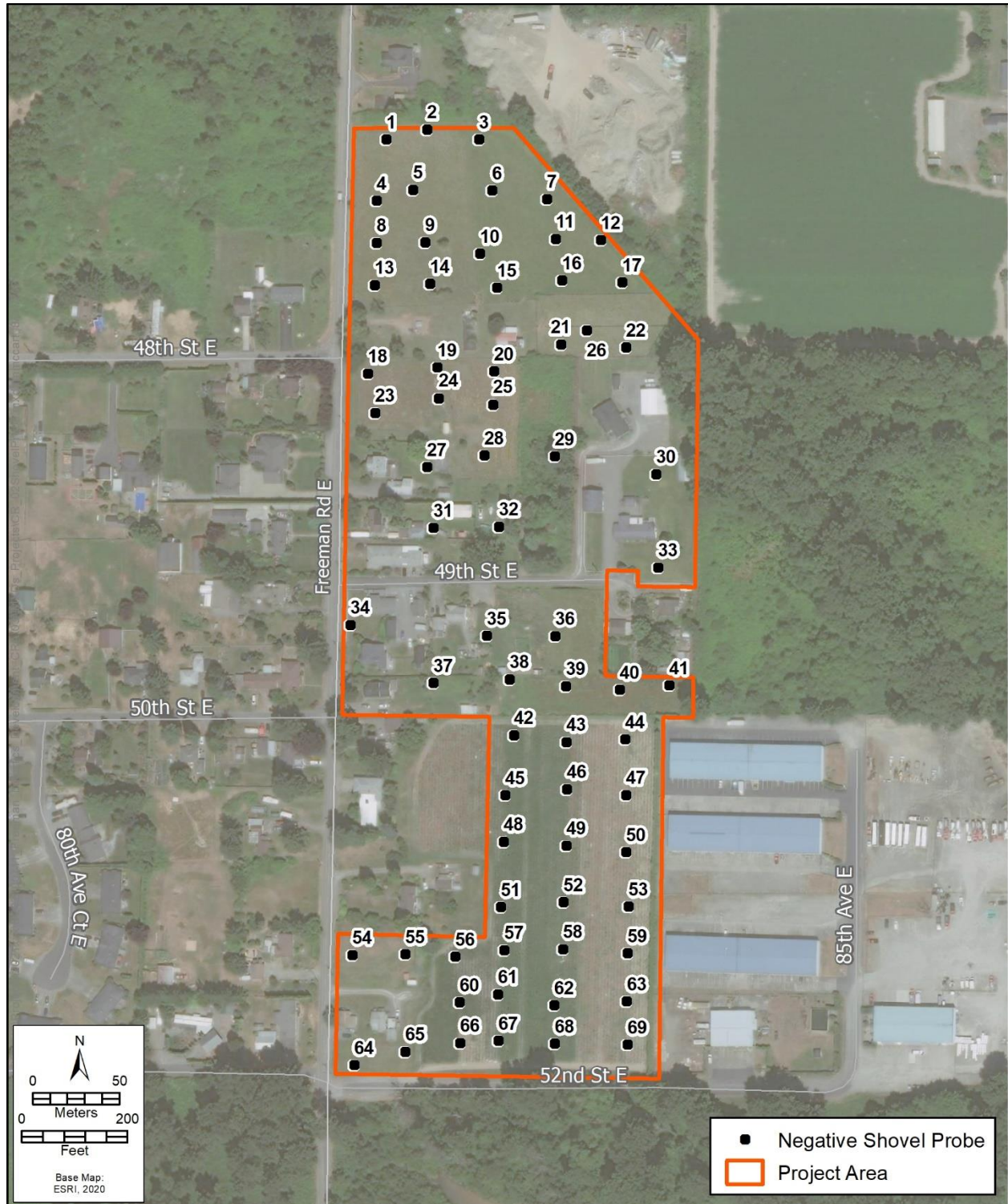
During Phase 1 in August 2021, the subsurface survey consisted of the excavation of a total of 69 shovel/auger probes. Probes were generally spaced at 30-meter (100-foot) intervals throughout the Project Area. An additional 206 shovel/auger probes were excavated throughout the Project Area during Phase 2 in March and April 2022. In total, 275 probes were excavated across the approximately 21-acre Project Area. The probes advanced during Phase 2 were generally spaced at 15-meter (49-foot) intervals in-between and adjacent to previously excavated shovel/auger probes from Phase 1. Spacing was modified at the discretion of the field director in order to excavate probes in locations deemed most likely to contain undisturbed or intact cultural resources within each transect interval. Subsurface investigations were conducted in accessible portions of the Project Area that did not contain prohibitive conditions, such as existing structures, remnants of demolished structures, impervious surfaces, drainage fields, underground utilities, laydown areas, or driveways and roads.

Probes were excavated using a round-nosed shovel with a ground surface 40-centimeter (cm; 1.3-foot) diameter, to a target depth of 100 cm (3.3 feet) bs, or until encountering prohibitive conditions, such as heavily compacted fill, cobble or boulder obstructions, water table, or unconsolidated high-energy alluvium such as gravel bar deposits and intact sandy gravel alluvium (channel or high-energy flood deposits). If impassable conditions were not encountered, probes were extended to a target depth of 210 cm (7 feet) bs utilizing a 10-cm (4-inch) diameter bucket auger.

Probes were excavated stratigraphically, or in 20-cm (8-inch) arbitrary levels within strata. Excavated material was screened through ¼-inch mesh onto a drop cloth. Relevant matrix data (such as color, grain size, gravel content and shape, presence of charcoal, oxidation, reduction, organics, and cultural content) were recorded for each stratum. Detailed notes regarding stratigraphy, probe location, presence or absence of cultural materials, documentation of buildings, general conditions, and photographs were taken. These data were recorded using smartphones and tablets with Global Positioning System/Global Navigation Satellite System (GPS+GLONASS), with a positional accuracy of 3 meters (9.8 feet) or less. Records are saved at ESA offices on a secure server. For full descriptions of the shovel probe data, see Appendix C.

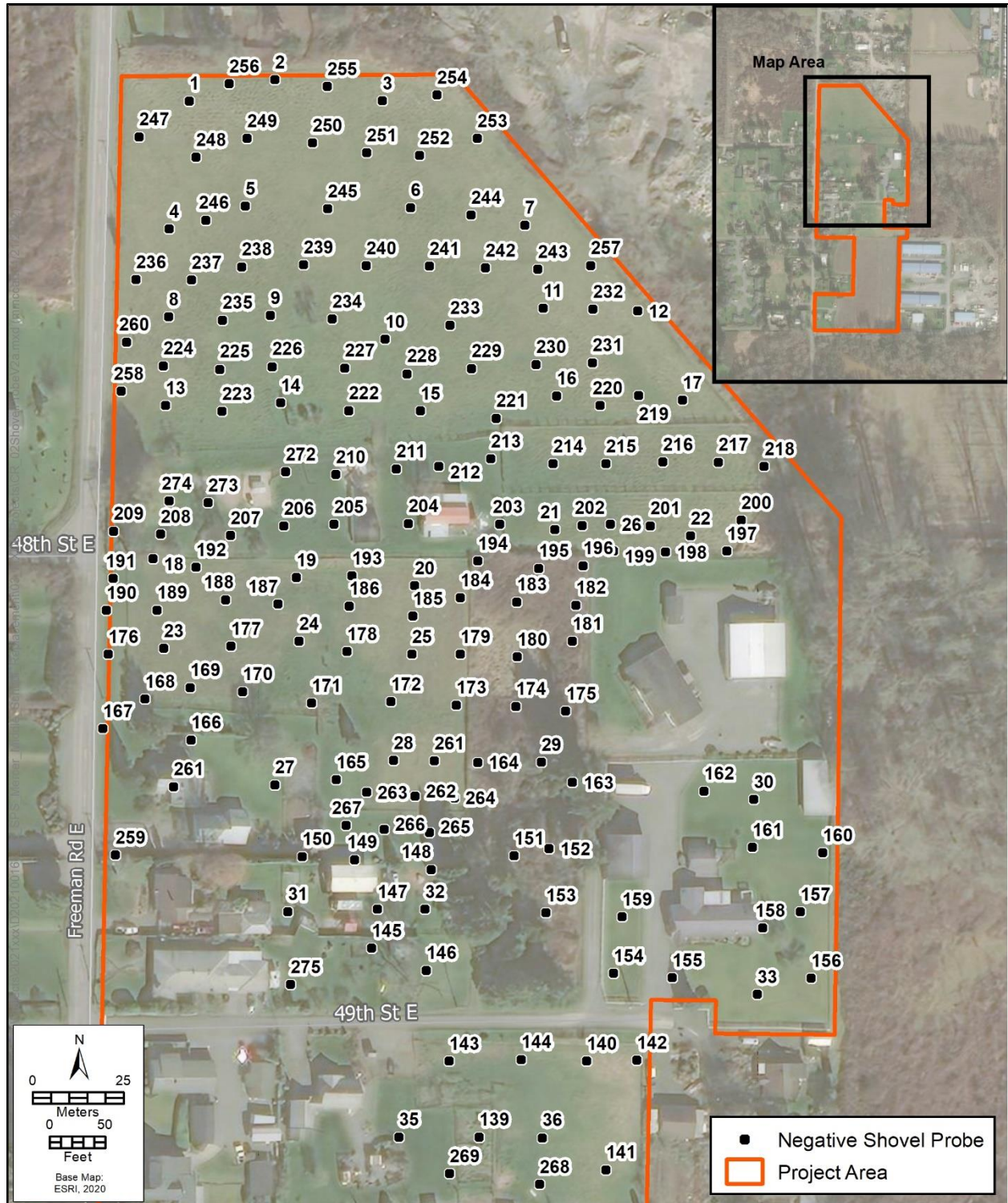
3.2 Results

No archaeological sites, isolates, or potential indicators of past human activity, such as concentrations of ash, charcoal, heat-affected soil, or shell, were identified during the cultural resources survey of the Project Area during either Phase 1 (Figure 6) or Phase 2 (Figure 7 and Figure 8) for the Freeman Logistics Development CRA.



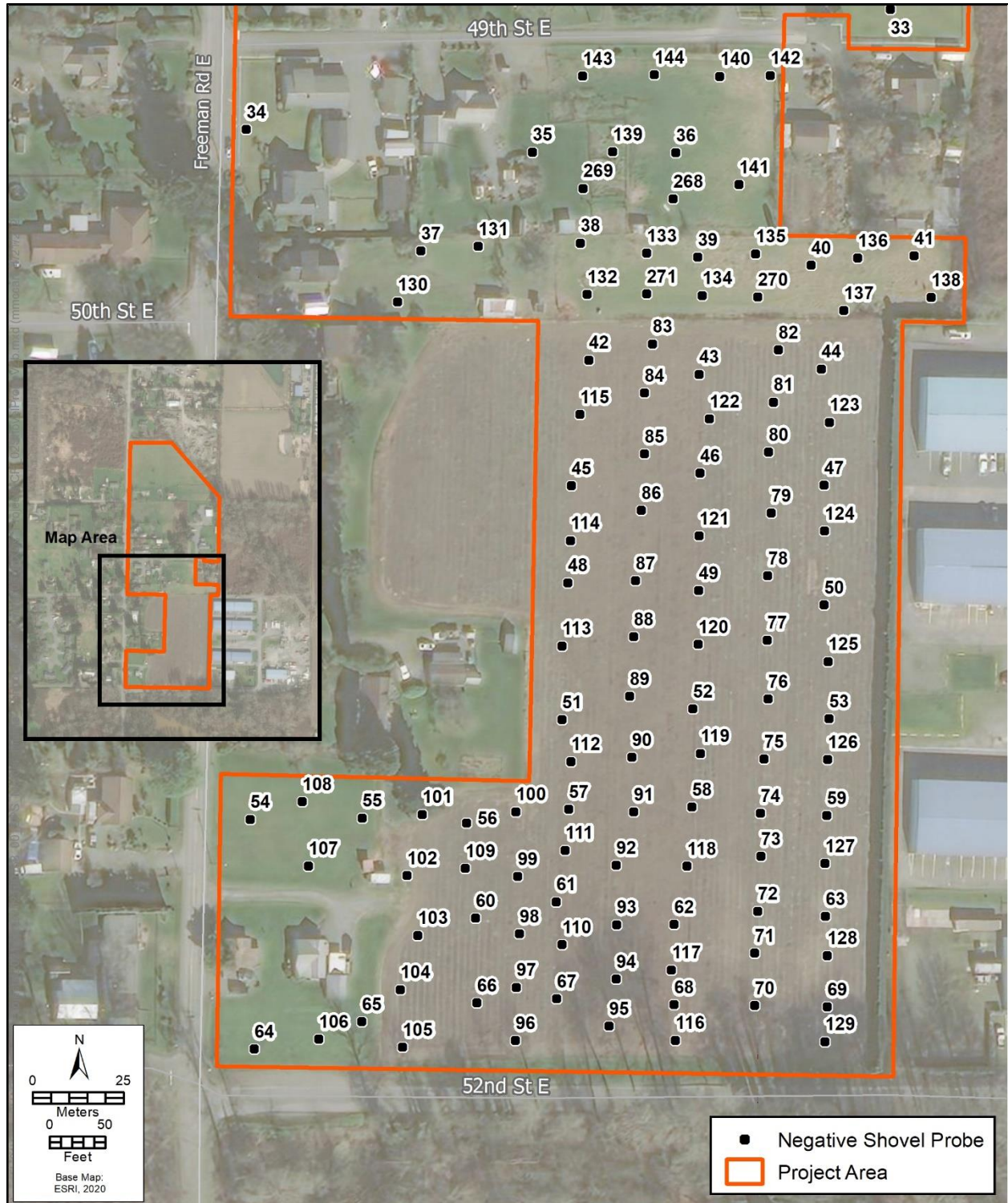
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Figure 6
Locations of Phase 1 probes excavated within the Project Area



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Figure 7
Locations of Phase 1 and Phase 2 probes (north area) excavated within the Project Area



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Figure 8
Locations of Phase 1 and Phase 2 probes (south area) excavated within the Project Area

3.2.1 Phase 1 Surface Survey

The Project Area is located within the Puyallup River floodplain. The open, level alluvial plain is the only distinct landform within the immediate area. No evidence of relict channels, terrace banks, or natural glacial high points was identified. There is, however, some variation within the floodplain landform due to the current and past human use of the area. The surface survey identified three distinct environments within the Project Area: open pasture lands in the north, a central residential subdivision, and the southern agricultural fields. Observations presented below were noted during Phase 1 of the CRA in August 2021.

The northern pasture area is relatively level. In this area, surface visibility is poor (less than 10 percent) due to dense surface vegetation. The general topography is undulating, showing some natural variation (Figure 9). This area does not appear to have not been graded, leveled, or plowed in the recent past. No areas of significant modification were noted outside of the road margins, which contain utilities and associated drainage. In general, it appears to be a relatively intact landscape, and within the general floodplain. It is not clear if this area is related to flooding activity from Wapato Creek or the Puyallup River. No topographic breaks, secondary terraces, or relict channel landforms are evident.



Photo by ESA

Figure 9
Overview of the northern fields from Probe #6, view is south

The central portion of the Project Area has been subdivided into single-family homes. Ground visibility is predominantly poor, with extremely level and graded topography. It is within the larger floodplain landform but has been significantly modified by grading and surface alterations for the existing roadways, structures, and the associated drainage/septic fields (Figure 10). It lacks the undulating surface of the northern pasture. Some areas of dense, overgrown vegetation are associated with unoccupied residential properties, but even in these areas the landscape is level and featureless, if heavily vegetated.



Photo by ESA

Figure 10
Overview of the central residential area from Probe #30, view is south

The central residential portion of the Project Area is densely occupied by residential infrastructure. This modification to the landscape for residential use appears to have caused significant disturbance; however, no raised or filled areas, which would have the potential to have buried and preserved historic-aged materials or features, were identified. Portions of the central residential areas were excluded from the subsurface survey due to the evident grading and modifications and the associated risk of encountering and damaging existing utilities such as irrigation and septic lines. This area is the most heavily modified portion of the Project Area.

The southern portion of the Project Area is predominantly occupied by active agricultural fields. The ground visibility here is excellent, with approximately 75 percent visibility. The ground has been plowed and is featureless (Figure 11). However, it lacks the grading and leveling activity evident in the central residential area. The topography in the south is more similar to the northern pasture, with some subtle topographic variation but no evident features, such as abandoned meander channels. It matches the grade of the landscape surrounding the Project Area. Other than plowing and clearing for agricultural use, there does not appear to have been wholesale modification of the landscape from its natural state.



Photo by ESA

Figure 11
Overview of southern agricultural fields from Probe #50, view is south

3.2.2 Phase 2 Surface Survey

During Phase 2 of the Freeman Logistics Development CRA in March and April 2022, surface survey conditions were significantly different than those previously reported in August 2021. While the same the distinct environments recorded in the Project Area (i.e., open pasture lands in the north, a central residential subdivision, and the southern agricultural fields), was still evident, land-alteration activities had occurred within the central residential subdivision and southern agricultural fields. Specifically, demolition of multiple structures. Additionally, seasonal vegetation growth changes were noted within the southern agricultural fields, as crops were at seedling stage, rather than mature, and visibility of the soil matrix was markedly increased. No new landforms were identified, and the Project Area remains an even floodplain.

The surface survey within the northern pasture area consisted of relatively level ground surface with thick grass cover and intermittent fence lines. In this area, surface visibility is poor (less than 10 percent) as previously documented due to dense surface vegetation. This area does not appear to have been altered since Phase 1 in August 2021. The western boundary of the agricultural field consists of a fence line with utility poles and signage. To the south of the field, a graveled and paved driveway juts east from Freeman Road E. Roadways are construed at grade, and no evidence of significant cutting or filling is noted (Figure 12). Structures at the southwestern corner of the northern pasture have been demolished, with remnants of the drainage and septic system evident (Figure 13). Several trees line the driveway near the boundary of the northern pasture lands and central residential subdivision. The north and east portions of the Project Area are bordered by a fence line and thick vegetation.



Photo by ESA

Figure 12
Overview of western boundary of northern fields from Probe #260, view is south



Photo by ESA

Figure 13

Overview of area of previously demolished structures from Probe #206, view is east

The central portion of the Project Area had previously been subdivided into single-family homes with associated subsurface utilities, driveways and access roads, and modified landscape areas consisting of manicured lawns, gardens, and outbuildings. Since Phase 1 in August 2021, most of the buildings and structures within this area have been demolished (Figure 14 and Figure 15). Ground visibility is generally poor, with leveled and graded topography. Area in close proximity to both existing and demolished building and structures contained multiple utilities and associated drainage/septic fields. These areas were noted for avoidance during the subsurface survey. This location within the Project Area is heavily disturbed. As such, the survey concentrated on areas outside of demolition activities, and outside of the footprints of previous structures, driveway and access roads, and underground utilities. However, areas of demolition had extremely high ground surface visibility. These exposures were examined for evidence of precontact or historic period materials; none were noted.



Photo by ESA

Figure 14
Overview of demolished residential structures from Freeman Road E, view is east



Photo by ESA

Figure 15
Overview of demolition south of 22nd Avenue NW, view is west

The southern portion of the Project Area is predominantly occupied by active agricultural fields, with residential structures along the western boundary adjacent to Freeman Road E. During Phase 1, ground visibility was noted as excellent, with approximately 75 percent visibility and consisting of a recently plowed field with crops, and featureless ground surface. In March and April 2022, the agricultural fields were unplanted with excellent ground visibility ranging between 75 and 100 percent (Figure 16). Ground disturbances were noted along the boundary and periphery of the agricultural field consisting of underground utilities, road drainages, graveled road prisms, modified lawns, and features associated with residential structures and occupation (Figure 17). Within the agricultural field itself there does not appear to have been wholesale modification of the landscape from its natural state beyond plowing and clearing for agricultural use. Areas noted for additional subsurface survey were located away from the utility and road prism of Freeman Road E, outside of the footprint of demolished buildings and associated structures, and in areas not previously excavated.



Photo by ESA

Figure 16
Overview of southern agricultural field, view is north



Photo by ESA

Figure 17
Overview of southern boundary toward demolished structures, view is west

3.2.3 Phase 1 and Phase 2 Subsurface Survey

The subsurface survey was informed by the results of the Phase 1 surface and subsurface survey results, as well as the additional data gathered during the Phase 2 surface survey. The work previous to the Phase 2 subsurface survey noted areas of disturbance related to residential construction and demolition, impervious areas of graveled and paved driveways and road prisms, and locations of underground utilities and drainage/septic fields. Additional shovel/auger probes excavated during Phase 2 were located in areas not previously excavated during Phase 1, and outside of the existing infrastructure such as utility alignments, septic/drainage fields, armored driveways and pads, as well as the footprint of existing and demolished structures. During Phase 1 and Phase 2, a total of 275 shovel/auger probes were excavated throughout the Project Area.

In general, encountered subsurface conditions were relatively uniform across the Project Area. A consistent mixed A/B horizon, or plow zone, was found in each of the three environments identified during the surface survey. The variation in soils was related to the basal stratum. The northern pastures and central residential area contain a clayey loam at the base of excavation. The alluvial deposition events responsible for the stratigraphic units appear to have been massive; no fine laminations were identified during the probing. When distinct beds of sediment were identified, they were most often associated with a sharp increase in alluvial energy, as signified by a shift in grain size to coarse sand or small rounded gravels. These coarser beds may represent temporary drainage channels associated with flood events. Soils within the northern pastures and central residential area conform to expectations for areas containing Sultan series soils (NRCS 2000; Figure 18, Table 3).



Photo by ESA

Figure 18
Profile of Probe #39, typical stratigraphy for the Project Area

TABLE 3
TYPICAL SOIL PROFILE WITHIN NORTHERN PASTURES AND CENTRAL RESIDENTIAL AREAS
(SULTAN SERIES SOILS)

Depth bs (ft/cm)	Description	Interpretation
0–1.9 / 0–55	Yellowish-brown silt loam, medium to fine granular / crumb structure, clear boundary.	Mixed alluvial A/B horizon, plow zone.
1.9–3.8 / 55–115	Brown sandy loam with less than 5% gravels, with a subangular blocky structure, clear boundary.	Intact native alluvial B horizon derived from moderate to low energy alluvial deposition.
3.8–7.0 / 115–210	Gray silt clay loam with no gravels and blocky structure.	Intact mottled B and C horizons derived from older low energy alluvial activity.

No significant areas of fill were noted, and no buried surfaces were identified in any of the probes. The only significant variation identified was that in the southern portion of the Project Area. Here, the basal stratum frequently consisted of fine to medium sands, as opposed to a clayey loam (Table 4). This change in energy is consistent with the mapped soil sequence change from Sultan silt loam to Puyallup fine sandy loam in the far south eastern extent of the Project Area (NRCS 2012). This area is in close proximity, less than a tenth of a mile, to the historic alignment of the Puyallup River. The sandy basal stratum is likely the result of overbank flooding, in close proximity to the river channel.

TABLE 4
TYPICAL SOIL PROFILE WITHIN SOUTHERN AGRICULTURAL FIELDS (PUYALLUP SERIES SOILS)

Depth bs (ft/cm)	Description	Interpretation
0–1.9 / 0–55	Yellowish-brown silt loam, medium to fine granular / crumb structure, clear boundary.	Mixed alluvial A/B horizon, plow zone.
1.9–3.8 / 55–115	Brown sandy loam with less than 5% gravels, with a subangular blocky structure, clear boundary.	Intact native alluvium derived from moderate to low energy deposition.
3.8–7.0 / 115–210	Grey brown fine well sorted sands.	Intact levee sand deposits, C- horizon.

3.3 Interpretation

The Project Area is within the floodplain of the Puyallup River. The near-surface material has been deposited by moderate energy flood activity. This deposition has not preserved any secure contexts within the stratigraphy with an elevated probability of containing cultural resources. The near-surface soils have been heavily disturbed by a combination of grading for existing and historic period infrastructure and plowing for agricultural use. No artifacts were noted during the pedestrian survey of the agricultural fields, which have excellent surface visibility. The near-surface deposits would most likely contain material evidence of late Holocene precontact and the 19th or early 20th century. This pervasive disturbance significantly decreases the likelihood of encountering intact cultural resources within the Project Area. However, the pervasive past and current plowing, and excellent surface visibility would make the presence of archaeological materials, if they had been present, more apparent. No potential indicators of disturbed archaeological contexts, such as fragmentary glass, ceramics, metal, fire-modified rock, sparse shell, or greasy organic soil, were noted during the survey.

The uniform landscape of the Project Area does not contain discrete landforms and presents as a level field (Figure 19). While the southern agricultural fields are in close proximity to the northern bank of the Puyallup River, and as a result were more likely used for habitation or resource gathering by Indigenous people, this area has experienced high to moderate energy flooding. The presence of deep levee sand deposits here is consistent with the mapped soil transition to Puyallup series soils (NRCS 2012). These moderate energy flood events are more likely to erode artifacts and features than to bury and preserve them.



Photo by ESA

Figure 19
Overview of typical conditions within the Project Area from Probe #9, view to the west

4. RECOMMENDATIONS

No archeological sites, isolates, or potential cultural indicators such as fire modified rock, or dense concentrations of ash, shell, heat affected soil, or dark greasy organic materials were identified during the surveys. The assessment found that the Project Area is entirely within the floodplain of the Puyallup River. It has been plowed and/or graded across its surface, and deeper deposits represent massive beds of alluvium with no buried surfaces, laminations, or other distinct contexts with an elevated probability of containing cultural resources. All built environment resources have been previously evaluated for listing on the NRHP, and have been determined not eligible for listing.

Based on the results of the survey, ESA extends no recommendations for further cultural resources work within the Project Area. ESA does recommend that an Inadvertent Discovery Plan (IDP) be in place to establish procedures and protocols to be followed in the event of a cultural resources discovery during construction. The IDP is attached as Appendix D.

The findings and professional opinions included in this report are based on standard archaeological techniques including pedestrian survey and shovel testing; however, each has its limitations. It is possible that unanticipated cultural resource materials may be encountered during construction. In the event that cultural resources are observed during implementation of the Project, then work should be temporarily suspended at that location, and a professional archaeologist should be consulted.

The DAHP provides the following recommended language pursuant to RCWs 68.50.645, 27.44.055, and 68.60.055 regarding protocols for the inadvertent discovery of human skeletal remains on non-federal and non-tribal land in Washington (DAHP 2022b):

If ground-disturbing activities encounter human skeletal remains during the course of construction, then all activity will cease that may cause further disturbance to those remains. The area of the find will be secured and protected from further disturbance. 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 of whether those remains are forensic or non-forensic. If the county medical examiner/coroner determines the remains are non-forensic, then they will report that finding to the Department of Archaeology and Historic Preservation (DAHP) who will then take jurisdiction over the remains. DAHP will notify any appropriate cemeteries and all affected tribes of the find. The State Physical Anthropologist will make a determination of whether the remains are Indian or Non-Indian and report that finding to any appropriate cemeteries and the affected tribes. DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

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Appendix A

Project Design Sheet

PROJECT DATA

SITE AREA	905,629 SF
BUILDING AREA	431,484 SF
COVERAGE	47.6%
PARKING REQUIRED	201.6
20,000 SF OFFICE @ 1:300	66.7
411,484 SF WHSE @ 1:3000	137.2
PARKING PROVIDED	224
▲ 9'x10' DOCK DOOR	66
● 14'x16' GRADE ACCESS DOOR	7

REVISIONS

ISSUE NO.	DATE	ITEM
B	03 19 21	SEPA APPLICATION
A	01 05 21	PRE-APPLICATION

PROFESSIONAL STAMP

PROGRESS
PRINTING

May 25, 2021

NOT FOR CONSTRUCTION

PROJECT INFORMATION

FREEMAN ROAD LOGISTICS

Puyallup, WA

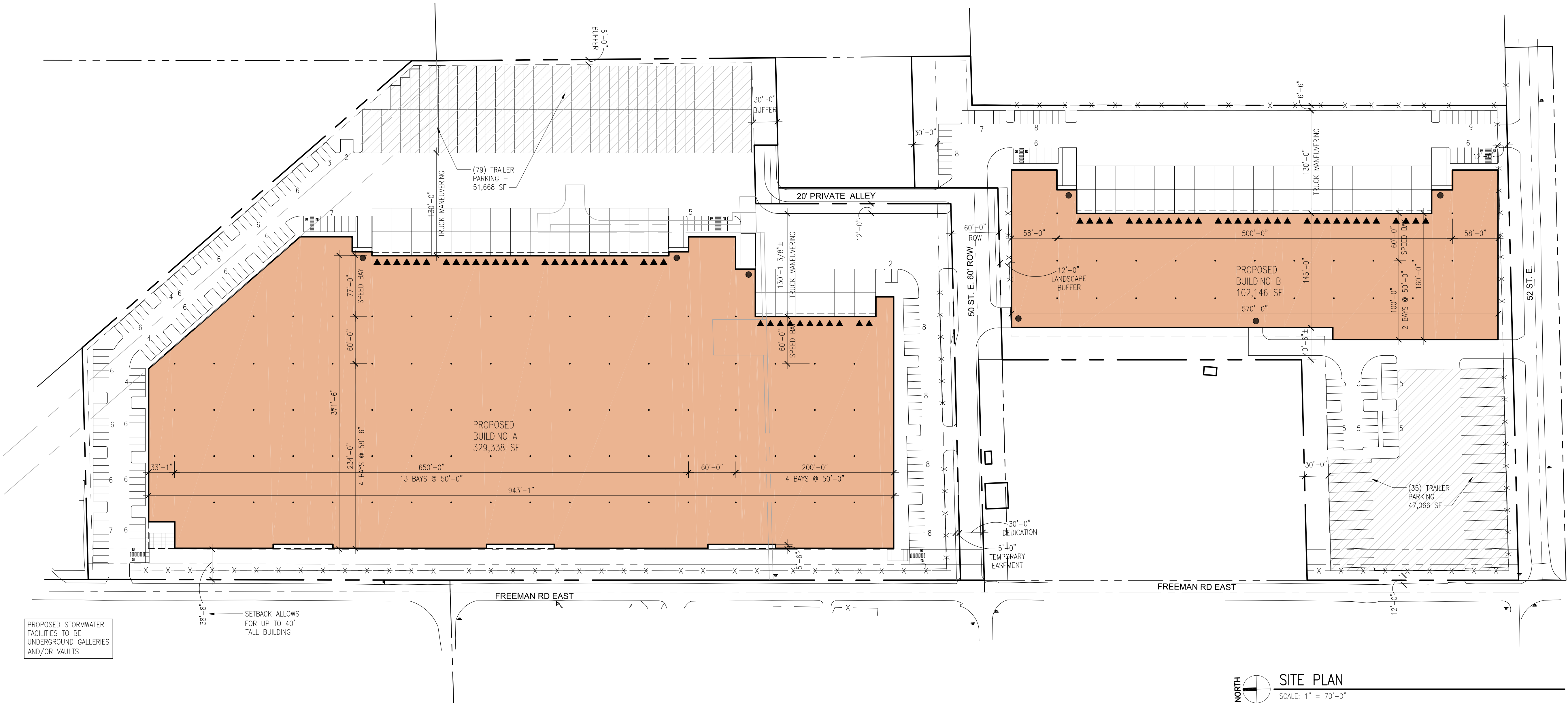
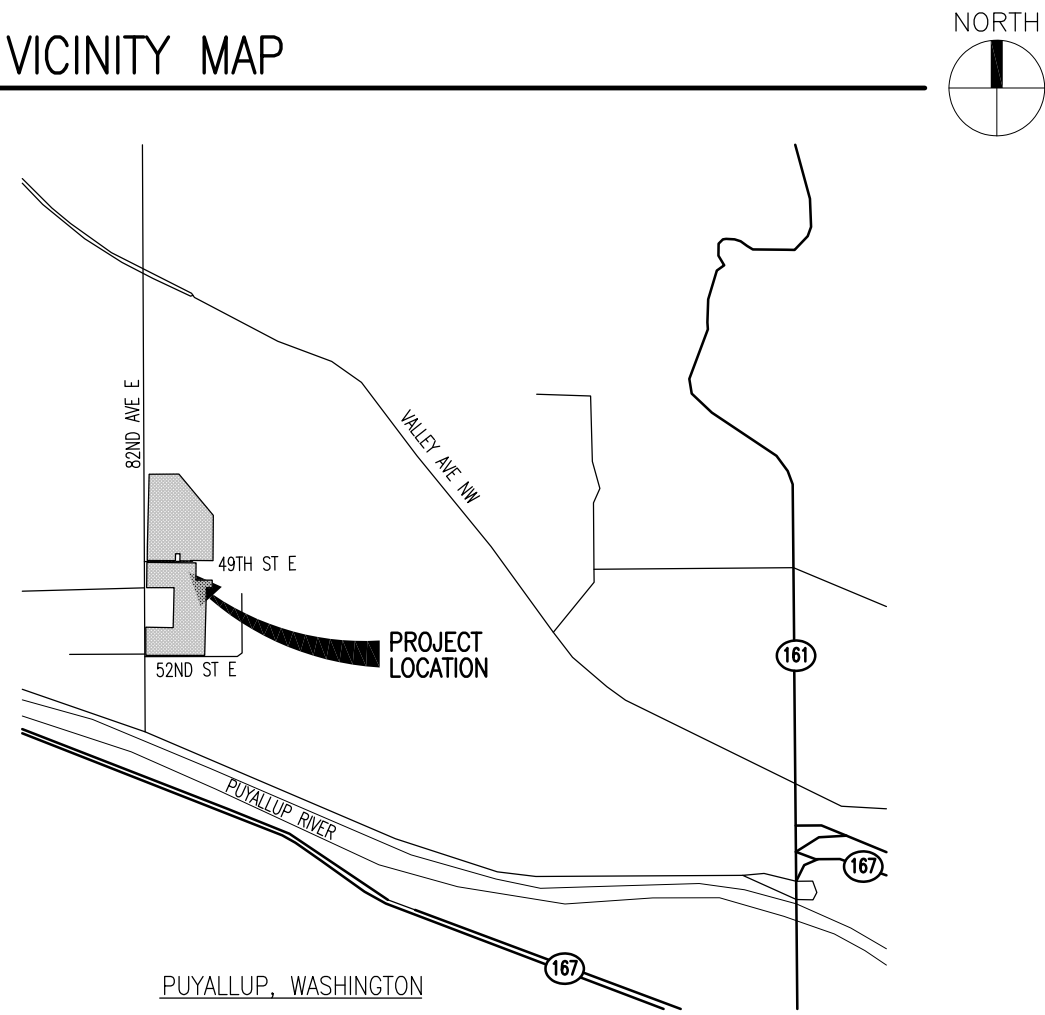
SHEET INFORMATION

RELEASE FOR: PRE-APPLICATION
TITLE: SITE PLAN

DESIGNED BY: DRAWN BY:
REVIEWED BY: APPROVED BY:
DATE: 01 05 21
SHEET NO:
PROJECT NO: 201401.13.031

A1.1

VICINITY MAP



Appendix B

Desktop Assessment Report



Cultural Resource Consultants

TECHNICAL MEMO 2011H-1

DATE: December 7, 2020

TO: Tyler Litzenberger
Vector Development Company

FROM: Margaret Berger, Principal Investigator

RE: Cultural Resources Overview for the Freeman Road Logistics Project, Puyallup,
Pierce County, Washington

The attached short report constitutes our final report for the above referenced project. This report provides an overview of the project location. Background research conducted by Cultural Resource Consultants, LLC did not identify any archaeological sites within the project location. There are nine historic inventory properties recorded within the project location but all have been determined not eligible for historic registers. Review of online assessor records identified one unrecorded historic (i.e. 50 years old or older) building within the project. Expectations for the types of cultural resources that may be present and anticipated cultural resources compliance needs for potential future development are presented. Please contact our office if you have any questions about our findings and/or recommendations.

**Cultural Resources Overview for the
Freeman Road Logistics Project,
Puyallup, Pierce County, Washington**

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Management Summary

This report provides a cultural resources overview for the Freeman Road Logistics Project, Puyallup, Pierce County, Washington. Vector Development requested a cultural resources overview as a part of due diligence prior to the property being annexed to City of Puyallup. No development or ground disturbance is proposed at this time. This overview sought to identify archaeological and historic sites at the project location and to evaluate the potential as-yet unrecorded cultural resources to be present. Background research conducted by Cultural Resource Consultants, LLC (CRC) did not result in the identification of any recorded archaeological sites on the property. Nine historic inventory properties have previously been recorded and determined not eligible for historic registers. Review of online assessor records indicated the presence of at least one building over 50 years old that has not been recorded or evaluated for historical significance. The reach of the Puyallup valley containing the project is considered to have high potential to contain as-yet unrecorded archaeological sites. Cultural resources compliance needs for any potential future development in this location are anticipated to include archaeological survey and documentation of unrecorded historic built environment resources.

1.0 Administrative Data

1.1 Overview

Report Title: Cultural Resources Overview for the Freeman Road Logistics Project, Puyallup, Pierce County, Washington

Author: Margaret Berger, Sonja Kleinschmidt, and Ian Kretzler

Report Date: December 7, 2020

Location: The project is located at 4723 - 5117 Freeman Rd E in Puyallup, Pierce County, WA. It includes Pierce County Tax Parcels 0420174075, 0420201039, 0420201066, 0420201034, 0420201052, 0420201040, 0420205016, 0420201042, 0420201027, 0420201101, & 0420205003. The legal description of the project is in the SW $\frac{1}{4}$ of the SE $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 17 and the W $\frac{1}{2}$ of the NE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 20 in Township 20 North, Range 4 East, Willamette Meridian.

USGS 7.5' Topographic Map(s): Puyallup, WA (Figure 1).

Total Area Involved: 19.7 acres.

Regulatory Nexus: None.

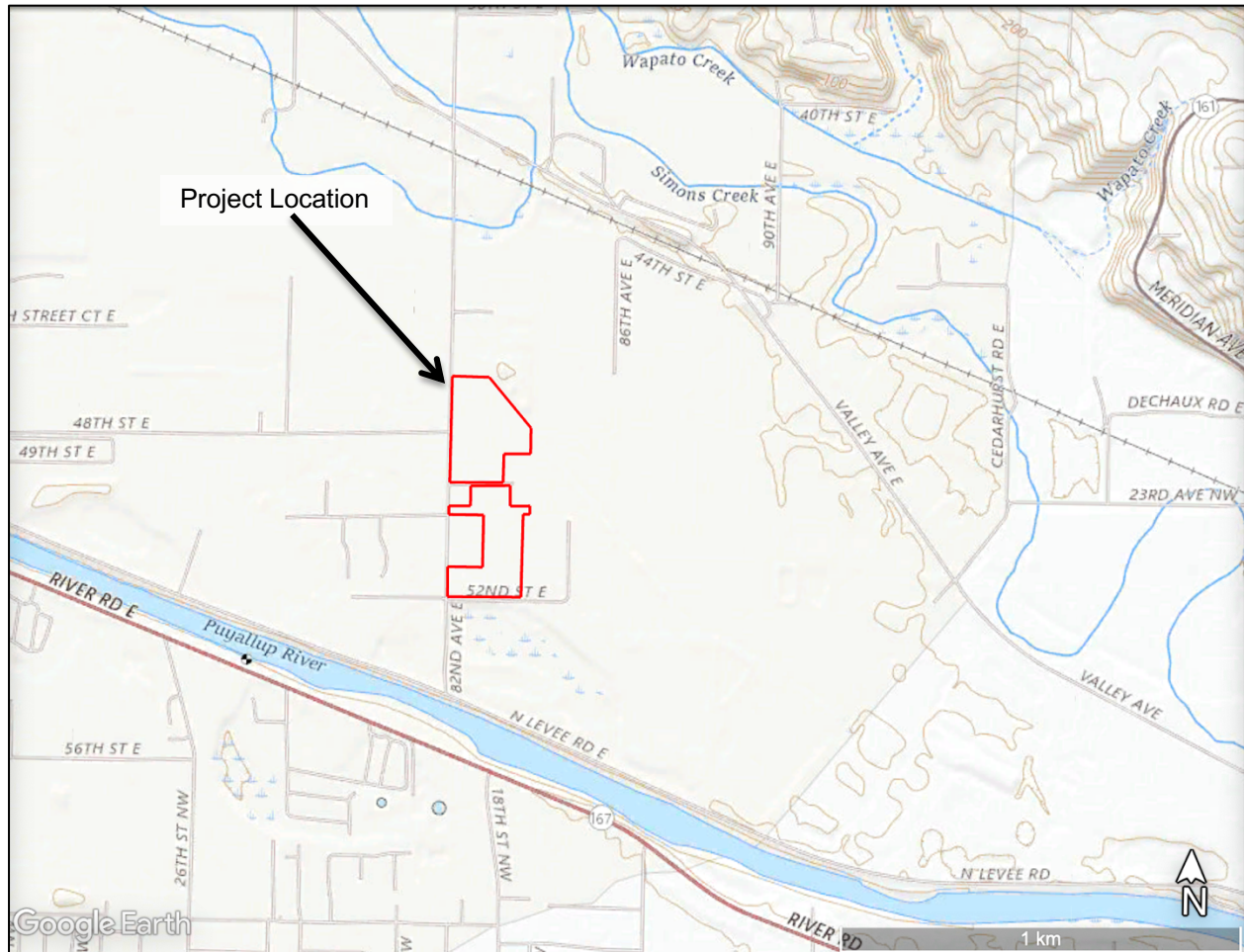


Figure 1. Puyallup, WA topographic map annotated with the project location in red.

1.2 Research Design

This cultural resources overview was completed as a component of preconstruction environmental review for the Freeman Road Logistics Project. It sought to identify potential impacts to cultural resources by evaluating whether archaeological sites and/or historic structures exist within the boundaries of the project. CRC's work was intended, in part, to assist in addressing state regulations pertaining to the identification and protection of cultural resources (e.g., RCW 27.44, RCW 27.53, RCW 68.60). The Archaeological Sites and Resources Act (RCW 27.53) prohibits knowingly disturbing archaeological sites without a permit from the Washington State Department of Archaeology and Historic Preservation (DAHP); the Indian Graves and Records Act (RCW 27.44) prohibits knowingly disturbing Native American or historic graves; and the Abandoned and Historic Cemeteries and Historic Graves Act (RCW 68.60) calls for the protection and preservation of historic era cemeteries and graves.

CRC's investigation consisted of (1) review of available project information provided by the project proponent, (2) examination of local environmental, historical, and archaeological datasets, and (3) field investigation. On December 1, 2020, CRC contacted cultural resources personnel at the Puyallup Tribe of Indians on a technical staff to technical staff basis to inquire about project-related cultural information or concerns (Appendix A). This correspondence was not intended to be or replace formal government-to-government consultation. Information

provided by Tribes' cultural resources personnel subsequent to the submission of this report will be included in a revised version. This assessment considered comments provided by Tribes, previous studies in the Puyallup area, the magnitude and nature of the undertaking, the nature and extent of potential effects on historic properties, and the likely nature and location of historic properties at the project location, as well as other applicable laws, standards, and guidelines (per 36CFR800.4 (b)(1)) (DAHP 2020a).

1.3 Project Description

Vector Development is requesting a cultural resources overview as a part of due diligence prior to annexation of the property to City of Puyallup. No development or ground disturbance is proposed at this time. For the purposes of this overview the area of interest for cultural resources (hereafter, "the project location") is understood to be the area described above and depicted in Figures 1 – 2.



Figure 2. Satellite imagery annotated with the project location in red.

2.0 Background Research

2.1 Overview

Background research was conducted in December 2020.

Recorded Cultural Resources Present: Yes [x] No []

Nine historic inventory properties have been recorded within the project (DAHP Property IDs 680874, 680878, 680797, 680795, 680794, 680790, 680792, 680786, and 680785). Each has been determined not eligible for the National Register of Historic Places (NRHP).

Context Overview: The following context overview summarizes environmental, historical, and archaeological information contained in local cultural resource reports; archaeological and historical data from DAHP and the Washington Information System for Architectural and Archaeological Records Data (WISAARD); ethnographic resources; geological and soils surveys (e.g. USDA NRCS 2020; WA DNR 2020); historical maps and documents from the Bureau of Land Management United States Surveyor General Land Status & Cadastral Survey Records database; HistoryLink; Historic Map Works; HistoricAerials (NETR 2020); University of Washington's Digital Collection; Washington State University's Early Washington Maps Collection; and CRC's library. This report's discussion of geology, archaeology, and history at the project location incorporates contextual information from CRC's previous work in the greater Puyallup area (e.g. Berger 2014a, 2014b; Kretzler and Berger 2020).

In this and subsequent sections, radiocarbon dates and age ranges based on those dates are presented in calibrated calendrical years ago (cal BP). This notation indicates that the radiocarbon date has been corrected using current methodologies. Other age estimates are given as years BP (before present).

2.2 Environmental Context

Overview: The project is geographically situated within the Willamette-Puget Lowland physiographic province. This province is characterized by the wide "trough" between the Coast and Cascade Ranges (McKee 1972:290). The project location is on the Puyallup River floodplain just north of an abandoned former channel of the river and within 0.5 mile south of Wapato Creek. Both streams drain to Commencement Bay approximately 4 miles to the northwest. This location is within the *Tsuga heterophylla* vegetation zone (Franklin and Dyrness 1973). Historically, vegetation in the vicinity included wetland and riparian forest species. Surface elevation in the project location is approximately 30 feet above sea level.

Geomorphology: The Puyallup valley is a relict meltwater channel that formed following the advance of several Late Pleistocene (110,000 to 12,000 years BP) glaciations that originated from Canada and extended between the Cascade and Olympic mountain ranges into the Puget Lowland (Kruckeberg 1991:12). The channel cut into glacial advance outwash deposits as the glacier retreated from the area between Orting and Puyallup approximately 14,000 years ago (Booth et al. 2003; Dragovich et al. 1994:9). Marine waters began to fill Puget Sound and tributary channels once the Strait of Juan de Fuca and Admiralty Inlet were no longer blocked by ice. In southern and central Puget Sound, sea levels began to rise rapidly after 8,000 years ago (Eronen et al. 1987) and then rates of increase slowed around 5,000 years ago (Booth et al. 2003:26). Eustatic sea levels were within one meter of present-day levels by about 1,000 years ago (Eronen et al. 1987). What is now the Puyallup River delta was submerged in the deep waters of the ancient Puyallup marine embayment, an extension of what is now called Commencement Bay that reached inland as far as the present-day city of Puyallup until a landslide that occurred approximately 5,700 years ago (Crandell 1971; Vallance and Scott 1997).

The landslide, called the Osceola Mudflow, originated on Mount Rainer and filled the White, Green, and Puyallup river channels with mud and alluvium (Crandell 1971; Dragovich et al. 1994:20; McKee 1972:206-207; Vallance and Scott 1997). The rivers etched the mudflow deposits, delivering suspended alluvial sediments to the embayment shoreline where they were deposited. This caused the ancient Puyallup River delta to prograde rapidly, moving the delta from present-day Puyallup northwestward to its present-day location at Tacoma (Dragovich et al. 1994: Figure 5). It is estimated that the Puyallup delta prograded at a rate of approximately 8.2 feet (2.5 meters) per year, over the last 5,700 years, filling over eight linear miles (13 kilometers) of the embayment to reach the historical Commencement Bay shoreline (Barnhardt et al. 2003; Dragovich 1994:22). Based upon rates provided by Dragovich et al. (1994:23), the Puyallup floodplain would have been established in the project vicinity by about 4,000 years ago (Murphy et al. 2000:30). More mudflows within the past 2,000 years or so, and as recently as the Electron Mudflow 500 years ago, contributed more sediment to the Puyallup valley (Crandell 1971).

Mapped Surface Geologic Unit: The project is located in the surface geologic unit of Quaternary alluvium (Qa) (WA DNR 2020). This unit is composed of unconsolidated or semi-consolidated alluvial clay, silt, sand, gravel, and (or) cobble deposits. Local variations within this area may include peat, muck, and diatomite; lacustrine, marsh, or lahar deposits; or modified land and artificial fill.

Mapped Soil Unit: Soils mapped within the project location consist of Puyallup fine sandy loam in the southwestern portion and Sultan silt loam in the northwestern portion of the project (USDA NRCS 2020). The Puyallup fine sandy loam unit is derived from a parent material of alluvium and forms on floodplains and terraces. A typical profile is ashy fine sandy loam from 0 to 13 inches, loamy fine sand from 13 to 29 inches, and fine sand from 29 to 60 inches below surface. This unit is well drained.

The Sultan silt loam unit is derived from a parent material of alluvium and forms on floodplains. A typical profile is ashy silt loam from 0 to 14 inches, silt loam from 14 to 23 inches, and stratified sand to silty clay loam from 23 to 60 inches below surface. This unit is moderately well drained.

2.3 Paleoclimate and Vegetation

The paleoclimate of the Pacific Northwest during the late Pleistocene and Holocene is defined by four periods, which exhibit general trends based on variations in temperature and moisture (Kopperl et al. 2016:37-38).

- 17,000 to 13,000 cal BP: the region was much cooler and drier compared to the present.
- 13,000 to 7000 cal BP: the retreat of glacial ice and increased solar radiation led to higher temperatures, less precipitation, colder winters, and more severe summer droughts compared to the present.
- 7000 to 5000 cal BP: cooler, moister conditions returned to the region, with temperature ranges similar to the present. The current maritime climate regime of the Puget Sound region was fully established by the end of this period.
- 5000 cal BP to present: climatic conditions have undergone short-term fluctuations such as the Little Ice Age (500 to 100 cal BP) and the Medieval Climatic Anomaly (1100 to 700 cal BP).

Regional fluctuations in temperature and moisture have supported different plant communities through time. Following glacial recession and meltwater subsidence, landforms stabilized and vegetation began to return. Newly exposed soils were first colonized by lodgepole pine, Sitka spruce, and western hemlock. As temperatures rose between 12,000 and 10,000 cal BP, trees advanced to higher elevations while lowland forests became dominated by Douglas-fir, red alder, and bracken fern. These patterns continued into the early and middle Holocene. Present-day vegetation communities emerged after 6000 cal BP. Western red cedar and western hemlock became important components of mid-low elevation forests while Alaska cedar, mountain hemlock, and silver fir emerged at cooler, moister higher elevations.

2.4 Archaeological Context

Thousands of years of human occupation in the Puget Sound region have been summarized in a number of archaeological, ethnographic, and historical investigations over the past several decades. These studies provide a regional context for evaluating the potential of archaeological deposits at the project location (e.g. Carlson 1990; Greengo 1983; Kopperl et al. 2016; Larson and Lewarch 1995; Nelson 1990).

Human presence in western Washington extends to at least 14,000 cal BP, a period corresponding with the most recent retreat of glacial ice in the region. Over the next six millennia, Native peoples lived in small, mobile groups that moved seasonally between productive hunting, fishing, and gathering locations. Archaeological evidence dating to the early part of this period is largely constrained to isolated projectile point finds. Native peoples' presence on the landscape around 11,000 cal BP is evidenced by site 45KI839 in Redmond, which contained stone artifacts situated at the interface of glacial and peat deposits and buried under thick alluvium. It is western Washington's only well-stratified, excavated site from the late Pleistocene-Holocene transition (Kopperl et al. 2015).

Middle and late Holocene sites are better represented in Washington's archaeological record due to the stabilization of sea levels and, in recent millennia, regional population increases. During the middle Holocene, roughly 8000 to 3000 cal BP, Native peoples established a broader range of residential and resource procurement site types and sizes. This shift coincided with decreased mobility as groups developed specialized adaptations to local environments.

These trends continued into the late Holocene. Beginning around 3000 cal BP, the archaeological record is characterized by diverse site and artifact types located in a range of environments. Settlement patterns revolved around semi-permanent winter villages while resource harvest relied in part on landscape management (e.g. culturally prescribed burning), mass capture of resources (e.g. fish weirs), and storage technologies. Intensive harvest of and occupation near littoral resources—activities that produced sizable shell middens—also emerged.

The arrival of Euro-Americans in the Pacific Northwest in the late eighteenth century marked the beginning of the colonial period. The establishment of the Pacific fur trade and later the transformation of Washington and Oregon into U.S. settler colonies, upended regional demography and ecology. Native societies grappled with the impacts of foreign diseases, the introduction of settler plants and animals, and land seizure and removal policies. Amid these changes, Native peoples acquired new materials and adapted settlement and subsistence practices to emerging economic opportunities and settler incursion (e.g. Wilson 2018).

2.5 Native Peoples

Traditional Territory: The project is located within the ancestral homelands of Lushootseed-speaking Puyallup peoples, whose territory stretched from the Gig Harbor Peninsula and Vashon Island up the Puyallup and Carbon Rivers to Mount Rainier (Haeberlin and Gunther 1930; Smith 1940; Spier 1936:42). During the nineteenth century, and for centuries prior, Puyallup peoples and their neighbors followed a seasonal round tied to the availability of resources. During the spring and summer, families travelled across the landscape, primarily via canoe, between seasonal camps situated in a variety of environmental zones. From these camps, they harvested salmon, shellfish, and other marine resources, hunted terrestrial mammals such as elk and deer, and collected berries, roots, and other plants. Many of these resources were present near the project along Hylebos Creek and the Puyallup River. Resources were dried and stored for consumption during the leaner winter months or processed for manufacture of clothing, medicines, baskets, and tools, whether stone, bone, or wood. As summer turned to winter, families relocated to large cedar plank houses in villages situated along waterways. Winter was a time for ceremonial activities and creating and strengthening social relations with members of other villages via marriage, trade, and cultural exchange. Knowledge of these and other lifeways continues to be passed down among contemporary Native peoples. Today, descendants of the original inhabitants of the lower Puyallup River are members of the Puyallup Tribe of Indians (Puyallup Tribe of Indians 2019; Ruby et al. 2010; Suttles and Lane 1990).

Place Names: The project location is part of a storied landscape. The names of waterways, settlements, food gathering areas, and other geographic markers encapsulate the creation and ordering of the world, stories for proper behavior toward human and non-human communities, and Native peoples' millennia-old and ongoing histories. The small sample of place names documented by ethnographers since the middle decades of the nineteenth century speaks to these connections and the nature of archaeological materials that may be encountered during this assessment.

Smith (1940) recorded the locations of 34 historical Puyallup and Nisqually villages across the southern Puget Sound region. These include the “large and important village” pu-ya'lup, on the southwest side of Commencement Bay (Waterman ca.1920:248), along with villages at the mouths of Clay Creek (Smith 1940; Swanton 1952), Wapato Creek (Smith 1940:9-10), and Clark's Creek (Swanton 1952). The mouth of Clark's Creek on the Puyallup River is approximately one mile west of the project location.

Waterman (2001:247-250) documented several named places in the lower Puyallup River area. A waterfall on Simon's Creek, which historically flowed from Surprise Lake into Wapato Creek north of the project, is known as QwEd. Wapato Creek is within 0.5 mile north of the project and is known as Qa'lqalEq^w, translated as “making many turns.” Wapato, a wetland plant with small starchy tubers, is an important traditional food for the region's Native peoples. The creek is also known as sto'lagwali, or “where the river used to be.” This name refers to a story in which Wapato Creek was the outlet for a large lake in the Puyallup Valley. Whales living in the lake carved the Puyallup River, leaving the Wapato outlet to dwindle into the creek that exists today. XaxtL!, or “brushy,” is the name for Hylebos Creek. The flats between Wapato Creek and Hylebos Creek located northwest of the project are known as kalka'laq^u, which translates as “place around which the water passes.” East of this area is stEx^u-gwL, or “plowing through with

a canoe.” This name refers to a swamp located between Wapato Creek and Hylebos Creek. Beaver hunting took place in the swamp.

2.6 Nineteenth and Twentieth Century History

During the early nineteenth century, the Pacific Northwest emerged as a center of British and U.S. exploration, mapping, and trade. The Hudson’s Bay Company established Fort Nisqually in present-day DuPont in 1843. For two decades, the fort was home to a diverse population of traders who established relationships with local Native groups. The Oregon Treaty, signed in 1846, ceded imperial interest in the Pacific Northwest to the United States. The region soon attracted interest as a site of economic potential, religious proselytization, and territorial expansion. In 1850, the federal government passed the Oregon Donation Land Act, which attracted settlers to the Pacific Northwest with the promise of free land. That title to the region remained held by Native groups did not prevent the act from passage. The act transformed Washington and Oregon into settler colonies, forms of territorial control that rely on the appropriation of Native land and the removal of Native peoples (Veracini 2011). As the local settler population increased, Native peoples came to be seen as antithetical to the region’s development.

It was against this backdrop that Washington territorial governor and ex officio superintendent of Indian affairs Isaac Stevens negotiated treaties with Native groups. In 1855, Native leaders representing Puyallup and other groups from across southern Puget Sound signed the Treaty of Medicine Creek. The treaty ceded title to over two million acres of Native land in exchange for small reservations and preservation of hunting and fishing rights. During the Puget Sound War of 1855 and 1856, which erupted in part due to the asymmetrical terms of the treaty, many Native people were forcibly interned on Fox Island (Carpenter 1996). After the conflict, Native groups were compelled to relocate to the Puyallup and other reservations. Some refused to relocate and remained in their homelands, in urban and rural settings.

The Homestead Act of 1862 brought an increase of settlers to the Puyallup valley. Early settlers farmed on the prairies and river valleys, logged the upland forests and extracted coal from the Carbon River coal seams (BOLA 2007; Bonney 1927; Marino 1990). Chinese and Japanese immigrants first arrived in the area in the latter part of the nineteenth century (CAPAA 2001). Coal and logging ventures brought about further settlement and development of the region. By the 1880s, the Northern Pacific Railroad had been constructed, connecting the coalfields in Wilkeson and Carbonado to the railroad terminus at Tacoma (Kelly 2012:5). In the early twentieth century, transportation routes connecting the Puyallup River valley to Tacoma, including Valley Road, allowed for the establishment of truck farms in the vicinity of the project (Yamamoto et al. 2015).

The Puyallup Reservation encompasses approximately 18,500 acres, including much of the land surrounding the lower Puyallup River, Swan Creek, Wapato Creek, Hylebos Creek, and the present-day Port of Tacoma. Though originally set aside for Puyallup peoples’ settlement and subsistence, over the latter half of the nineteenth century the General Allotment Act and other federal policies facilitated the transfer of reservation land to settlers. By 1873, the reservation was divided into several allotments. Allotment was designed to advance reservations’ assimilationist agenda by tethering Native people to individual plots. In the long run, however, it

transferred vast swaths of reservation land to non-Native parties. By 1934, when the allotment program officially ended, the Tribe held just 33 acres within the reservation.

During the Fish Wars of the 1960s and 1970s, Puyallup and other Native peoples reasserted their fishing and reservation rights. Their activism culminated with the Boldt decision, which upheld these rights and recognized Tribes as co-managers of the state's fish populations. The decision spurred additional pushes by Puyallup leaders to reacquire and/or receive just compensation for lands within the reservation's boundaries. Their efforts led to the \$162 million Puyallup Land Claims Settlement, signed in 1990. Under the agreement, the Tribe ceded title to the original reservation in exchange for 900 acres of land, including areas with development potential, funds for social programs and infrastructure upgrades, and an agreement between the Tribe and state and local governments to protect fishing habitat. Today, the Tribe owns several hundred acres of land in fee and in trust within and beyond the boundaries of the original reservation (Douglas 2016; Wilma 2006).

2.7 Historical Records Search

Information about nineteenth and twentieth century land ownership and use at the project is available via county atlases, topographic maps, and aerial imagery. The General Land Office (GLO) conducted early cadastral surveys of the area to define or reestablish the boundaries and subdivisions of federal lands so that land patents could be issued to individuals. The GLO maps from 1864, 1865, and 1874 depict the project location within the Puyallup Indian Reservation and do not include any other annotations regarding the project location (USSG 1864, 1865, 1874). The Bureau of Land Management does not have records of land patents on file for the project location (BLM 2020).

An 1892 map shows the Puyallup Reservation following the implementation of the General Allotment (Dawes) Act (Figure 3). The project location spans two 40-acre tracts in the allotments of Coltus Jim (Jonas Tuckanum) and Kany-Arka-Jim (James Taylor) (Puyallup Indian Commission 1892a). According to Boersema (2008a:9-10), most allotments consisted of two pieces, so that each person would have 40 acres of good agricultural land and 120 acres of tideflat or timbered uplands (Drake et al. 1892, in Boersema 2008a). The report accompanying the map notes that the SE $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 17 was allotted to "Cultus Jim, or Jonas Tuckanum" (Patent No. 78) and denoted as "Homestead" land valued at \$150 per acre (Puyallup Indian Commission 1892b:77). The NE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 20 was allotted to "Kanaka Jim, or James Taylor" (Patent No. 99), also denoted as "Homestead" land, and valued at \$250 per acre (Puyallup Indian Commission 1892b:79). This information points to likely occupation and cultivation of lands containing the project by these members of the Puyallup Tribe and their families during the allotment period.

An 1897 land classification sheet depicts the project location as in an area from which timber had been cut (Figure 4; USGS 1897). This map and the topographic map from 1900 show that a road had been established in the approximate route of present-day Valley Road, north of the project, another road followed the south bank of Wapato Creek, from which another road extended south-southeast towards two structures in the vicinity of the project (USGS 1897, 1900).

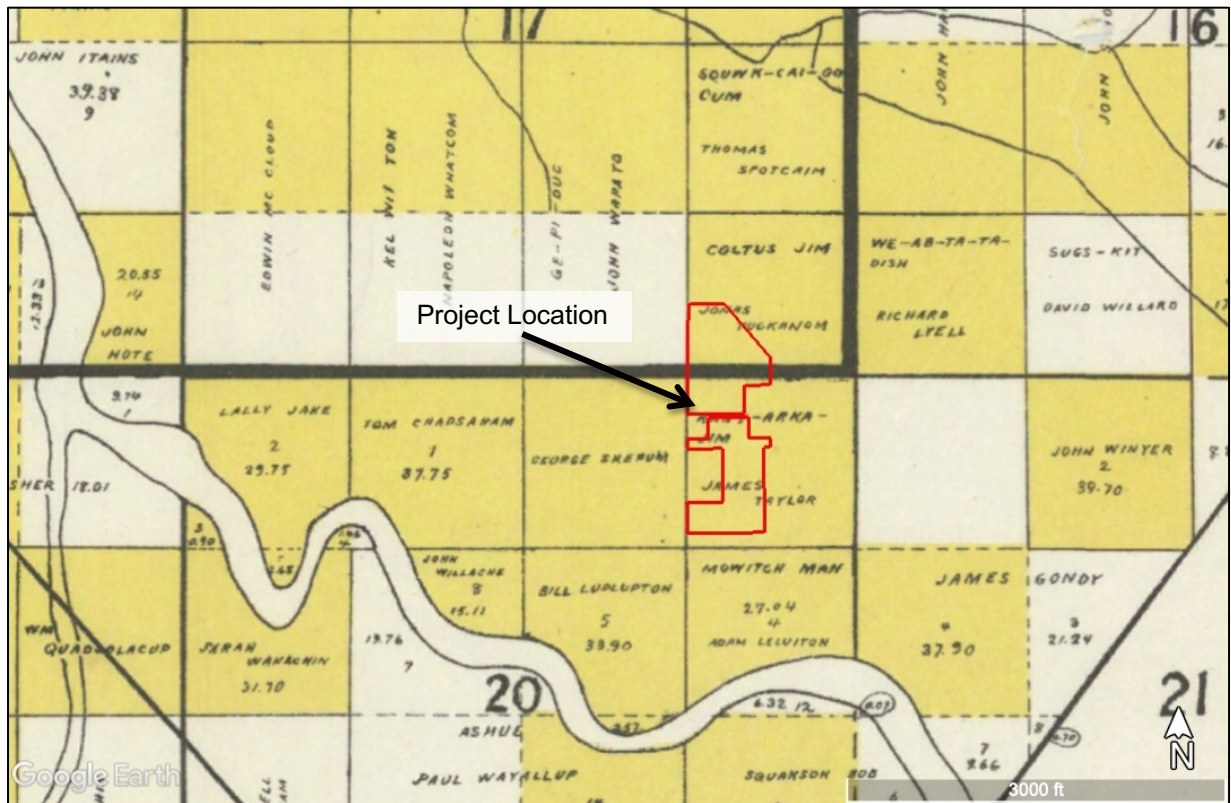


Figure 3. Map of allotments on the Puyallup Reservation (Puyallup Indian Commission 1892a) annotated with the project location in red.

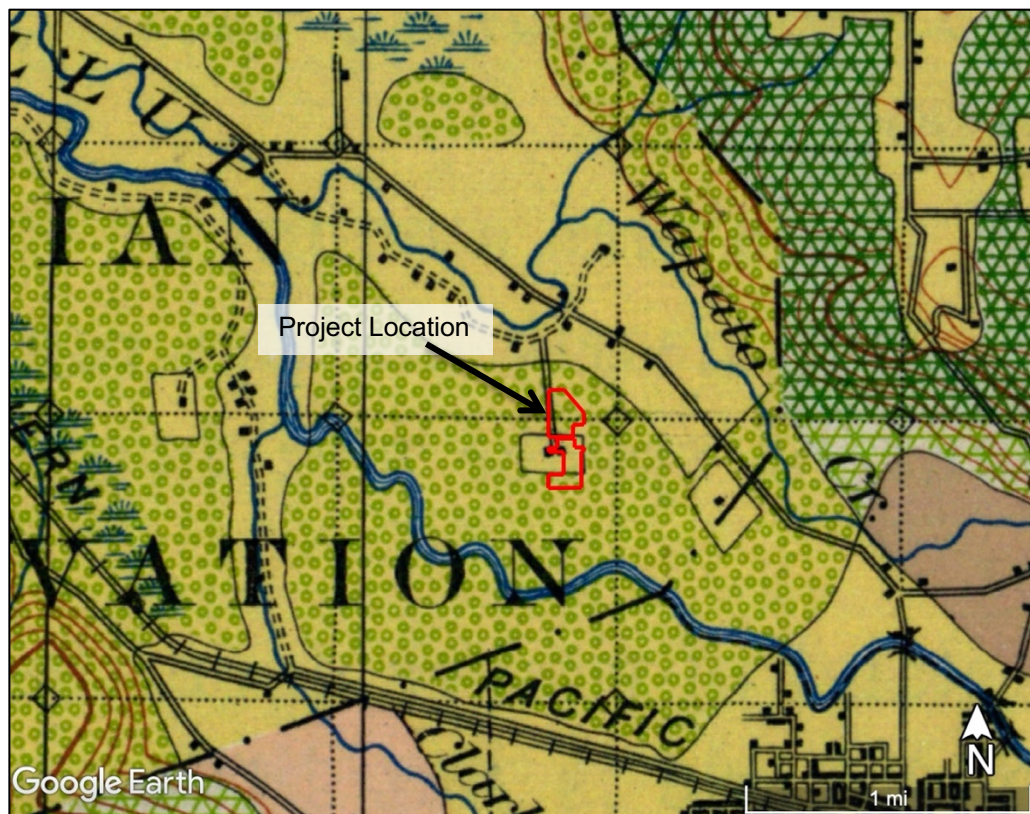


Figure 4. Project location marked on land classification sheet (USGS 1897).

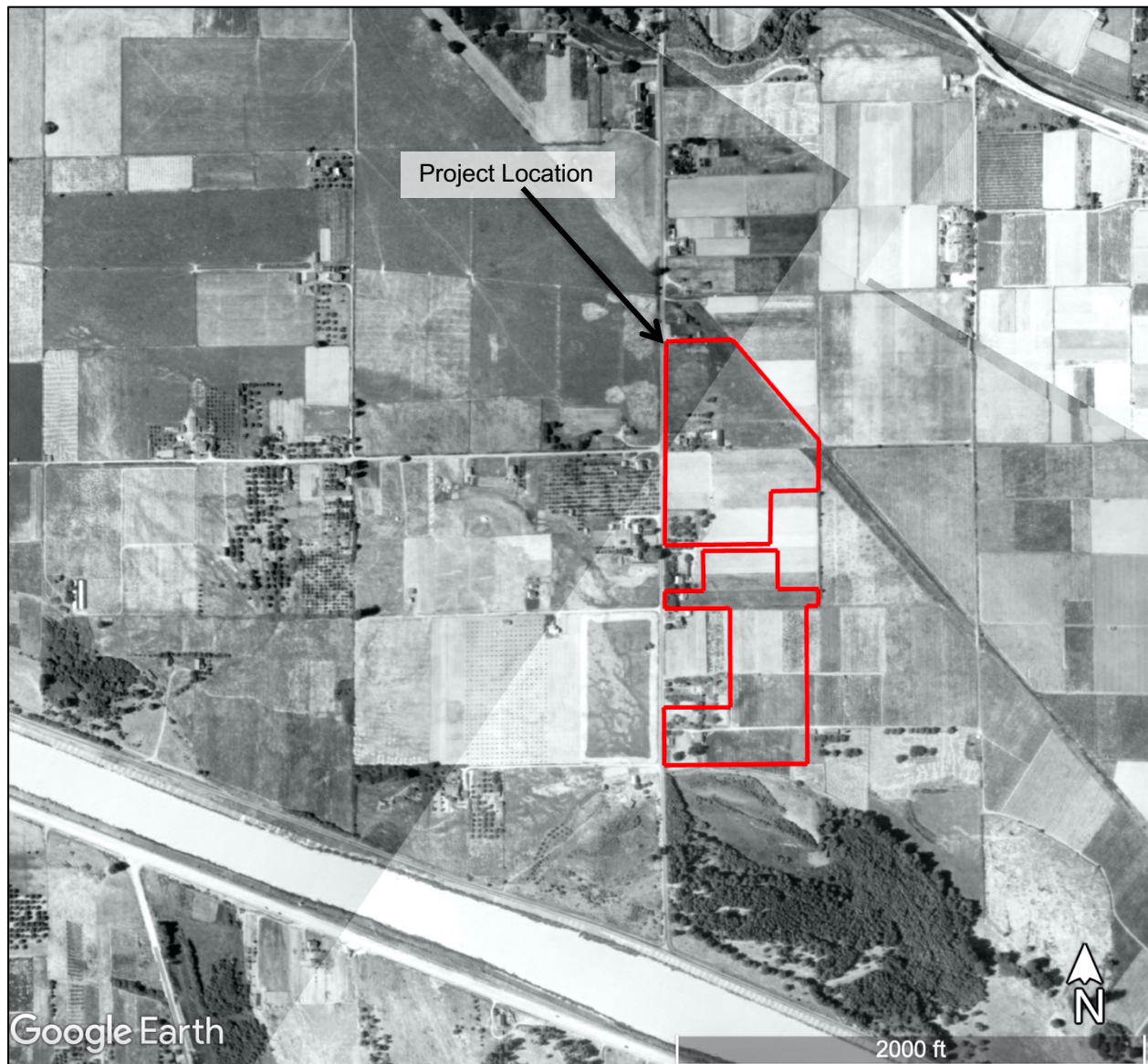


Figure 6. Project location marked on 1940 aerial imagery (PSRHP 2003).

2.8 Cultural Resources Database Review

A review of the WISAARD database identified cultural resource studies, precontact and postcontact archaeological sites, and historic properties in the vicinity of the project. This information provides details about the nature and likelihood of cultural resources at the project location (DAHP 2020b). Since 1995, 15 cultural resources assessments have been conducted within one mile from the project location. These have included cultural resources surveys for a variety of projects including transportation improvements (e.g. Berger 2014b; Yamamoto et al. 2015) and private developments (e.g. Berger 2014a; Cowan and Montgomery 2011).

Nearest to the current project, Yamamoto et al. (2015) conducted archaeological and historic built environment survey ahead of proposed construction of a new freeway from Tacoma to Puyallup. This included the excavation of shovel probes approximately 500 feet (~150 meters) northeast of the current project, and the documentation and evaluation of several historic

inventory properties in and adjacent to the current project. Each of the historic inventory properties recorded within the current project location was determined not eligible for listing on the NRHP (Table 1).

Table 1. Previously recorded historic inventory properties within the project location.

DAHP Property ID	Address (Name)	Build Date(s)	Historical Use	Historic Register Status
680874	5123 Freeman Rd E	1930	Domestic – Single Family	Determined not eligible for NRHP
680878	5117 Freeman Rd E	1930	Domestic – Single Family	Determined not eligible for NRHP
680797	4923 Freeman Rd E	1935, 1960	Domestic – Single Family	Determined not eligible for NRHP
680795	8212 49th St E	1950	Domestic – Single Family	Determined not eligible for NRHP
680794	8218 49th St E	1954, 1969	Domestic – Single Family	Determined not eligible for NRHP
680790	8305 49th St E	1942, 1963	Domestic – Single Family	Determined not eligible for NRHP
680792	4827 Freeman Rd E	1948, 1966	Domestic – Single Family	Determined not eligible for NRHP
680786	4823 Freeman Rd E	1900, 1950	Domestic – Single Family	Determined not eligible for NRHP
680785	4815 Freeman Rd E	1945, 1970	Domestic – Single Family	Determined not eligible for NRHP

Three archaeological sites have been recorded within one mile of the project location (Table 2). Each dates to the historic era. The nearest recorded precontact archaeological sites are over two miles away.

Table 2. Archaeological sites documented within one mile of the project.

Site Number	Site Type	Distance from Project	Historic Register Status
45PI826	Historic debris scatter and features	0.25 mile W	No determination
45PI1307	Historic debris scatter	0.63 mile NW	No determination
45PI490	Historic objects	0.70 mile NNW	No determination

Site 45PI826 consists of two low density scatters of fragmentary historic debris in an agricultural field and an associated fence line (Boersema 2008b). This site was historically in a farmstead that contained five buildings and an orchard according to a 1940 map. Site 45PI1307 represents a variety of isolated historic debris found on the surface and to 40 cm below surface and covering an area 32 meters by 27 meters (McWilliams 2013). The scatter was understood to represent dumping activity in the early 1900s. Site 45PI490 is a 1920s buried historic pit feature with no

surface manifestation identified during shovel probe testing and delineated by 1-x-1-meter excavation units (Luttrell 2001, 2004). Artifacts were primarily present between 40 and 100 cm below surface. Observed materials consisted of pieces of glass, ceramic, heavily oxidized pieces of unidentifiable ferrous objects, lamp chimney fragments, a light bulb base, wire nails, plastic, glass beads, a rubber shoe heel, milk glass, canning jar liner fragments, canning jar fragments, an automobile tire, cast iron wood stove parts, lumber, and tree stumps and branches. The site was located within land that was the Puyallup Indian allotment of the Tommy Lane family (Patent No. 72) who owned the property from 1884 until sometime in the early twentieth century. At the time the site was identified, the land was owned by the Kajimura family who had farmed it since before WWII.

Numerous historic inventory properties have been recorded within one mile from the project. Of these, three have been determined eligible for historic registers (Table 3). Each of these properties is a single-family home with demonstrable architectural and/or historical significance. No register-listed historic properties have been recorded within one mile of the project location. One cemetery is located within one mile of the project. Firwood Indian Cemetery, located approximately 0.45 mile to the east-northeast.

Table 3. Register-eligible historic properties within one mile of the project.

DAHP Property ID	Address (Name)	Build Date(s)	Historical Use	Historic Register Status
51552	4607 66th Ave E, Puyallup (1938 House of Tomorrow)	1941	Domestic – Single Family	Determined eligible for NRHP
100158	7717 Valley Ave E, Fife (A. Wydra House)	1910	Domestic – Single Family	Determined eligible for NRHP
680419	4403 Freeman Rd E, Puyallup (Boitano House)	1953	Domestic – Single Family	Determined eligible for NRHP

3.0 Archaeological Predictive Model

The DAHP statewide predictive model uses environmental data associated with documented archaeological sites to identify areas at which unknown sites may be found (Kauhi and Markert 2009). Environmental categories included in the model are elevation, slope, aspect, distance to water, geology, soils, and landforms. The model contains five probability ranks: (1) very high risk, (2) high risk, (3) moderate risk (survey recommended), (4) moderate risk (survey contingent on project parameters) and (5) low risk. The model ranks the project as very high to high risk for archaeological sites.

4.0 Results and Recommendations

4.1 Cultural Resources Identified

No previously recorded archaeological sites, cemeteries, or register-listed historic properties are in or adjacent to the project. Nine previously recorded historic inventory properties are within the project but were determined not eligible for listing on the NRHP. Additionally, based on review of county assessor records, at least one as-yet unrecorded historic (i.e. 50 years old or older) building is within the project. This is a barn built in 1960 on parcel 0420174075 at 4723 Freeman Rd E (Pierce County 2020).

4.2 Archaeological Expectations

This assessment combines the above cultural resources database review and predictive modeling results to evaluate the possibility that archaeological deposits may be present at the project location. Overall, the results of background research described above corroborate the predictive model. Surface geology and soils mapped within the project consist of alluvium that may contain buried archaeological deposits. Although precontact archaeological sites have not been recorded in close proximity to the project, geomorphological history of the Puyallup River valley, including rapid progradation of the Puyallup delta after the Osceola Mudflow, suggests that if precontact archaeological sites are present, they would date to the mid- to late Holocene. Precontact archaeological deposits that may be present within the project location would likely include evidence of resource procurement activities such as procurement and processing of plant, animal, and/or mineral resources, overland travel, temporary or more permanent camps or habitation sites as well as ceremonial or religious activities which may be represented by an array of deposits or materials such as fire-modified rock, lithic or bone tool or implements, lithic waste flake scatters, buried cultural surfaces, evidence of structural remains, etc.

The project location is situated between the historical Wapato Creek and Puyallup River channels approximately one mile up-valley from an ethnographically reported village at the mouth of Clarks Creek, and is within an area that was homesteaded by members of the Puyallup Tribe during the late nineteenth century. Archaeological deposits associated with the Cultus Jim (Jonas Tuckanum) and Kanaka Jim (James Taylor) allotments and early to mid-twentieth century occupation by others may be present within the project. Historic-era archaeological materials would likely be associated with domestic and agricultural activities and could consist of a variety of materials, most likely lost or discarded tools, household debris, or structural remains such as fence posts, old utilities, etc. These objects generally do not satisfy eligibility criteria for the NRHP, though exceptions may include intact floors or structural elements, or materials associated with particular individuals, ethnic groups, or events.

4.3 Future Compliance Expectations

It is anticipated that archaeological survey and documentation of as-yet unrecorded historic built environment resources would be required prior to any potential future development of the property. The location's environmental setting, precontact settlement patterns, and historical datasets including Puyallup Tribe allotment records place it in an area with high potential for archaeological sites to be present. Although some residential construction and demolition episodes have occurred, past ground disturbance in most of the project appears to have been limited to agricultural activities affecting only near surface sediments (i.e. plow zone). Archaeological sites may be preserved beyond the extents of prior disturbances.

Cultural resource compliance needs for any potential future development in this location may include: 1) supplementary background research as needed, 2) pedestrian survey to document existing conditions within the project and record any historic built environment or above ground historic ruins, 3) subsurface investigations by excavation of shovel and auger probes, 4) assessing impacts of project plans to known and any newly identified cultural resources, 5) developing and implementing an archaeological monitoring and inadvertent discovery protocol, if appropriate. No further work is anticipated to be needed for the nine previously recorded historic buildings since they were previously determined not eligible for the NRHP.

5.0 Limitations of this Assessment

No cultural resources study can assess with complete certainty whether archaeological sites, historic properties, or traditional cultural properties exist at a project location. The information presented in this report is based on professional opinions derived from CRC's analysis and interpretation of available documents, records, literature, and information identified in this report and on field investigation and observations. The conclusions and recommendations presented apply to current and reasonably foreseeable project conditions. The data, conclusions, and interpretations in this report should not be construed as a warranty of subsurface conditions. They do not apply to site changes of which CRC is not aware and has not had the opportunity to evaluate.

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Appendix A. Correspondence with Tribal Cultural Resources Staff



Puyallup Tribe of Indians
Brandon Reynon
3009 East Portland Ave
Tacoma, WA 98404

December 1, 2020

Re: Cultural Resources Assessment for the Freeman Road Logistics Project, Puyallup, Pierce County, Washington

Dear Brandon:

I am writing to inform you of a cultural resources assessment for the above referenced project and to seek additional information about the project area the Tribe may have that is not readily available through other written sources. This letter is on a technical staff-to-technical staff basis to inquire about project-related cultural information or concerns. It is not intended as formal government-to-government consultation to be initiated by the appropriate regulatory agency.

The project is located in Sections 17 & 20, Township 10 North, Range 04 East Willamette Meridian at 4723 - 5117 Freeman Rd E (Parcels 0420174075, 0420201039, 0420201066, 0420201034, 0420201052, 0420201040, 0420205016, 0420201042, 0420201027, 0420201101, & 0420205003) in Puyallup, Pierce County, Washington. Vector Development is requesting a cultural resources overview as a part of due diligence. No development or ground disturbance is proposed at this time.

We are in the process of reviewing available information. Background research will include a site files search at the Washington State Department of Archaeology and Historic Preservation, review of previously recorded cultural resource reports, and review of pertinent published literature and ethnographies. Results of our investigations will be presented in a technical memo.

We are aware that not all information is contained within published sources. Should the Tribe have additional information to support our assessment, we would very much like to include it in our study. Please contact me at sonja@crcwa.com or 360-395-8879 should you wish to provide any comments. I appreciate your assistance in this matter and look forward to hearing from you.

Sincerely,



Sonja Kleinschmidt, Projects Manager

CULTURAL RESOURCE CONSULTANTS, LLC. PO Box 4159, SEATTLE, WA 98194
PHONE 206.855.9020 - sonja@crcwa.com

Appendix C

Shovel Probe Data

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
1	1	0-45	Shovel	light brown	granular/crumb weak fine	clear wavy	A	organics	no	no	Ap horizon with common rootlets.
1	2	45-170	Shovel, Auger	grayish-brown	structureless	clear wavy	B	oxidized	no	no	Floodplain alluvium, some bedding.
1	3	170-215	Auger	dark brown	structureless	no horizon	B	groundwater	no	no	Floodplain alluvium. Terminated at desired depth.
2	1	0-70	Boring	light brown	granular/crumb moderate medium	diffuse smooth	fill	mottled	no	no	
2	2	70-100	Boring	brown	granular/crumb moderate medium	diffuse no horizon topography	B	mottled	no	no	
2	3	100-115	Auger	reddish-brown	granular/crumb weak medium	no horizon	B		no	no	Terminated at dense/impassable soils.
3	1	0-45	Shovel	light brown	granular/crumb moderate fine	clear wavy	A	organics	no	no	Tall grass top with rootlets down to 45cmbs.
3	2	45-83	Shovel	yellowish-brown	granular/crumb strong fine	no horizon	C	mottled	no	no	Terminated at dense/impassable soils.
4	1	0-37	Shovel	light brown	granular/crumb weak fine	diffuse wavy	A	organics	yes	no	Ap horizon with common rootlets, 1 clear glass fragment.
4	2	37-81	Shovel	grayish-brown	structureless	no horizon	B	oxidized	no	no	Floodplain/wetland alluvium. Terminated at dense/impassable soils.
5	1	0-70	Auger	light brown	granular/crumb strong fine	no horizon no horizon topography	A		no	no	Soil is homogeneous in color and texture throughout, compact. Terminated at dense/impassable soils.
6	1	0-30	Shovel	light brown	granular/crumb strong medium	clear wavy	A	organics	no	no	Very compact.
6	2	30-85	Shovel	yellowish-brown	granular/crumb strong medium	no horizon	B	mottled	no	no	Extremely compact. Terminated at dense/impassable soils.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
7	1	0-61	Shovel	light brown	granular/crumb moderate medium	diffuse irregular	A	organics	no	no	Organics consist of rootlets.
7	2	61-142	Shovel, Auger	yellowish- brown	granular/crumb moderate fine	Unseen in auger hole Unseen	B	mottled	no	no	
7	3	142-203	Shovel, Auger	dark brown	granular/crumb weak fine	no horizon	C	mottled	no	no	Increased moisture. Terminated at desired depth.
8	1	0-34	Shovel	light brown	granular/crumb weak fine	clear wavy	A	organics	yes	no	Ap horizon with common rootlets, 1 clear glass fragment.
8	2	34-62	Shovel	light brown	structureless	clear wavy	B	diatomaceous mottled oxidized	no	no	Very compact alluvium.
8	3	62-83	Shovel	grayish-brown	subangular blocky weak medium	no horizon	B	mottled oxidized	no	no	Dense floodplain/wetland alluvium. Terminated at dense/impassable soils.
9	1	0-80	Auger	light brown	granular/crumb strong medium	diffuse irregular	A	mottled	no	no	
10	1	0-29	Shovel	light brown	granular/crumb weak fine	clear wavy	A	organics	no	no	Ap horizon formed in alluvium with common rootlets.
10	2	29-58	Shovel	light brown	subangular blocky moderate medium	clear wavy	B	mottled oxidized	no	no	Very compact floodplain alluvium.
10	3	58-93	Shovel	grayish-brown	subangular blocky weak medium	no horizon	B	mottled oxidized	no	no	Floodplain alluvium. Terminated at dense/impassable soils.
11	1	0-63	Shovel	light brown	granular/crumb moderate medium	diffuse irregular	A	organics	no	no	Very compact and dry.
11	2	63-178	Shovel	dark brown	granular/crumb weak fine	Unseen	B		no	no	Wet sand.
11	3	178-203	Shovel, Auger	brown	subangular blocky weak coarse	Unseen	B	mottled	no	no	Soil damp but water not present. Terminated at desired depth.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
12	1	0-22	Shovel	light brown	granular/crumb strong medium	no horizon	A		no	no	5 probes were attempted in this location. Terminated at gravel/cobble obstruction.
13	1	0-35	Shovel	light brown	granular/crumb moderate fine	clear wavy	A	organics	no	no	Ap horizon formed in alluvium with common rootlets.
13	2	35-73	Shovel	light brown	subangular blocky moderate medium	clear wavy	B	mottled oxidized	no	no	Very compact floodplain alluvium.
13	3	73-140	Shovel, Auger	grayish-brown	structureless	clear wavy	B	mottled oxidized	no	no	Floodplain alluvium.
13	4	140-225	Auger	0	structureless	no horizon	B	groundwater oxidized	no	no	Floodplain alluvium. Terminated at desired depth.
14	1	0-85	Shovel	light brown	granular/crumb strong medium	no horizon	A	mottled oxidized	no	no	Homogeneous color and texture throughout, compact.
14	2	85-100	Auger, Shovel	reddish-brown	granular/crumb weak fine	clear no horizon	B		no	no	
14	3	100-120	Auger, Shovel	grayish-brown	platy moderate medium	no horizon	B		no	no	
14	4	120-140	Auger, Shovel	light gray	platy moderate medium	clear no horizon	B		no	no	
14	5	140-150	Auger, Shovel	gleyed	structureless	no horizon	B		no	no	Terminated at desired depth.
15	1	0-80	Shovel	light brown	granular/crumb strong medium	very diffuse no horizon topography	A	mottled oxidized	no	no	Homogeneous color and texture throughout, compact.
15	2	80-110	Shovel	brown	structureless	clear smooth	B		no	no	
15	3	110-150	Auger	gleyed	structureless	no horizon	C		no	no	Terminated at desired depth.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
16	1	0-27	Shovel	light brown	granular/crumb moderate fine	diffuse wavy	A	organics	no	no	Ap horizon formed in alluvium with common rootlets.
16	2	27-57	Shovel	light brown	subangular blocky moderate medium	clear wavy	B	mottled oxidized	no	no	Very compact floodplain alluvium.
16	3	57-85	Shovel	grayish-brown	subangular blocky weak medium	no horizon	B	mottled oxidized	no	no	Compact floodplain alluvium. Terminated at dense/impassable soils.
17	1	0-31	Shovel	light brown	granular/crumb weak fine	diffuse wavy	A	organics	no	no	Ap horizon formed in alluvium with common rootlets.
17	2	31-78	Shovel	grayish-brown	subangular blocky moderate medium	clear wavy	B	mottled oxidized	no	no	Very compact floodplain alluvium.
17	3	78-135	Shovel, Auger	grayish-brown	structureless	clear wavy	B	mottled oxidized	no	no	Floodplain/wetland alluvium.
17	4	135-160	Auger	gray	structureless	clear wavy	B		no	no	Floodplain alluvium.
17	5	160-225	Auger	dark gray	structureless	no horizon	B	groundwater	no	no	Floodplain alluvium. Terminated at desired depth.
18	1	0-45	Shovel	light brown	granular/crumb moderate fine	clear wavy	A	organics oxidized	no	no	Ap horizon formed in alluvium with common rootlets.
18	2	45-125	Shovel, Auger	grayish-brown	subangular blocky weak medium	clear wavy	B	mottled oxidized	no	no	Floodplain/wetland alluvium.
18	3	125-210	Auger	gray	structureless	no horizon	B	groundwater	no	no	Floodplain alluvium. Terminated at desired depth.
19	1	0-85	Shovel	light brown	granular/crumb strong fine	Unseen no horizon topography	A		no	no	
19	2	85-130	Shovel	reddish-brown	structureless	Unseen no horizon topography	B		no	no	
19	3	130-165	Shovel	gray	structureless	Unseen no horizon topography	B	organics groundwater mottled	no	no	Terminated at groundwater.
20	1	0-55	Shovel, Auger	light brown	granular/crumb moderate medium	diffuse wavy	A	organics mottled	no	no	Begin auger at 45cmbs.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
20	2	55-183	Shovel, Auger	brown	granular/crumb moderate fine	clear smooth	B	mottled	no	no	
20	3	183-188	Shovel, Auger	yellowish-brown	structureless	clear smooth	B	groundwater	no	no	This pocket of round sand graduals was clear in the auger.
20	4	188-200	Shovel, Auger	dark brown	subangular blocky moderate medium	no horizon	C	groundwater mottled oxidized	no	no	Moisture present but not a clear water table. Terminated at desired depth.
21	1	0-70	Auger, Shovel	light brown	granular/crumb moderate medium	diffuse irregular	A	oxidized	no	no	Located two meters north of large blackberry patch.
21	2	70-110	Auger, Shovel	brown	granular/crumb moderate medium	Unseen	B	groundwater mottled	no	no	
21	3	110-160	Auger, Shovel	brown	structureless	Unseen	B	groundwater	no	no	
21	4	160-200	Auger, Shovel	dark brown	subangular blocky moderate fine	no horizon	C	groundwater	no	no	Terminated at desired depth.
22	1	0-70	Shovel	light brown	granular/crumb strong medium	abrupt smooth	A	organics mottled oxidized	no	no	Begin auger at 40 cmbs.
22	2	70-122	Shovel, Auger	brown	structureless	clear smooth	B	mottled	no	no	Moist sand.
22	3	122-200	Shovel, Auger	gleyed	subangular blocky moderate medium	very diffuse irregular	C	groundwater mottled oxidized	no	no	Moisture present but not the water table. Terminated at desired depth.
23	1	0-46	Shovel	light brown	granular/crumb moderate fine	clear wavy	A	organics	no	no	Ap horizon formed in alluvium with common rootlets.
23	2	46-83	Shovel	grayish-brown	subangular blocky moderate medium	no horizon	B	mottled oxidized	no	no	Floodplain/wetland alluvium. Terminated at dense/impassable soils.
24	1	0-95	Shovel	light brown	granular/crumb strong fine	Unseen no horizon topography	A	mottled	no	no	
24	2	95-120	Shovel	reddish-brown	structureless	Unseen	C		no	no	
24	3	120-180	Shovel	gray	structureless	Unseen	B		no	no	

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
24	4	180-220	Shovel	gleyed	structureless	Unseen	mixed		no	no	Gleyed silty clay. Terminated at desired depth.
25	1	0-37	Shovel	light brown	granular/crumb moderate fine	clear wavy	A	organics	no	no	Ap horizon formed in alluvium with common rootlets.
25	2	37-88	Shovel, Auger	grayish-brown	subangular blocky moderate medium	clear wavy	B	mottled oxidized	no	no	Floodplain alluvium.
25	3	88-155	Auger	reddish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Floodplain alluvium.
25	4	155-205	Auger	gray	structureless weak medium	no horizon	B		no	no	Floodplain alluvium.
25	5	205-220	Auger	0	structureless	no horizon	B	groundwater	no	no	Floodplain alluvium. Terminated at desired depth.
26	1	0-117	Shovel, Auger	light brown	granular/crumb moderate medium	clear smooth	A	organics mottled	no	no	Probe located in agricultural field.
26	2	117-147	Shovel, Auger	reddish-brown	granular/crumb weak fine	clear wavy	B	mottled oxidized	no	no	Moist.
26	3	147-200	Shovel, Auger	grayish-brown	granular/crumb moderate medium	no horizon	C	mottled oxidized	no	no	Soil damp but no water table. Terminated at desired depth.
27	1	0-120	Shovel	light brown	granular/crumb strong fine	Unseen	mixed	trace charcoal mottled	yes	no	Modern glass and charcoal throughout the first ~75 cm.
27	2	120-180	Shovel	reddish-brown	structureless	Unseen	C		no	no	Terminated at groundwater.
28	1	0-46	Shovel	light brown	granular/crumb moderate fine	clear wavy	A	organics mottled oxidized	yes	no	Ap horizon formed in alluvium with common rootlets, plastic wrapper debris.
28	2	46-135	Shovel, Auger	grayish-brown	structureless	clear wavy	B	mottled oxidized	no	no	Floodplain alluvium.
28	3	135-150	Shovel, Auger	gray	angular blocky weak medium	clear wavy	B	mottled oxidized	no	no	Floodplain alluvium.
28	4	150-200	Auger	dark gray	structureless	no horizon	B	groundwater	no	no	Floodplain alluvium. Terminated at desired depth.
29	1	0-65	Shovel, Auger	light brown	granular/crumb moderate medium	diffuse irregular	A	trace charcoal organics	yes	no	Lots of modern debris from former residence.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
29	2	65-170	Shovel, Auger	brown	granular/crumb moderate medium	diffuse irregular	B	mottled	yes	no	Some modern debris.
29	3	170-200	Shovel, Auger	gleyed	subangular blocky moderate medium	no horizon	C	organics groundwater mottled oxidized	no	no	Terminated at desired depth.
30	1	0-40	Shovel	light brown	granular/crumb moderate fine	clear smooth	A	mottled oxidized	yes	no	Modern glass fragment in the top ~20cmbs.
30	2	40-60	Shovel	brown	granular/crumb weak fine	clear smooth	A		no	no	
30	3	60-90	Shovel	dark brown	structureless	Unseen	C		no	no	
30	4	90-190	Auger	grayish-brown	structureless	Unseen	mixed		no	no	Mix of clay and gleyed silt and sand at 110cmbs. Terminated at desired depth.
31	1	0-83	Shovel, Auger	light brown	subangular blocky moderate medium	clear smooth	A	abundant charcoal organics mottled	yes	no	Modern debris 0- 40 cm.
31	2	83-147	Shovel, Auger	brown	angular blocky strong medium	no horizon	C	trace charcoal mottled oxidized	no	no	Very compact, auger not effective. Terminated at dense/impassable soils.
32	1	0-34	Shovel	light brown	granular/crumb moderate fine	diffuse wavy	A	organics	yes	no	Ap horizon formed in alluvium with common rootlets to small roots.
32	2	34-100	Shovel, Auger	light brown	subangular blocky moderate medium	clear wavy	B	mottled oxidized	no	no	Floodplain alluvium.
32	3	100-165	Auger	brown	structureless	clear wavy	B	mottled oxidized	no	no	Floodplain alluvium.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
32	4	165-180	Auger	gray	angular blocky weak medium	clear wavy	B	mottled oxidized	no	no	Floodplain alluvium.
32	5	180-205	Auger	gray	structureless	no horizon	C		no	no	Floodplain alluvium. Terminated at desired depth.
33	1	0-38	Shovel	light brown	granular/crumb moderate fine	clear wavy	A	organics	no	no	Ap horizon formed in alluvium with common rootlets.
33	2	38-70	Shovel	light brown	subangular blocky moderate medium	clear wavy	B	mottled oxidized	no	no	very compact floodplain alluvium.
33	3	70-125	Shovel, Auger	brown	structureless	clear wavy	B	mottled oxidized	no	no	Floodplain alluvium.
33	4	125-155	Shovel, Auger	gray	structureless	no horizon	B	organics	no	no	Floodplain alluvium, woody obstruction. Terminated at log/root/organic obstruction.
34	1	0-48	Shovel	light brown	granular/crumb moderate fine	clear wavy	A	organics mottled oxidized	no	no	Ap horizon formed in alluvium with common rootlets.
34	2	48-105	Shovel	brown	structureless	no horizon	B	organics	no	no	Floodplain alluvium, woody obstruction. Terminated at log/root/organic obstruction.
35	1	0-36	Shovel	light brown	granular/crumb moderate fine	diffuse wavy	A	organics	yes	no	Ap horizon formed in alluvium with common rootlets. Some modern trash.
35	2	36-55	Shovel	light brown	granular/crumb moderate fine	clear wavy	B	mottled oxidized	no	no	Very compact floodplain alluvium.
35	3	55-125	Shovel, Auger	grayish-brown	structureless	clear wavy	B	mottled oxidized	no	no	Floodplain alluvium.
35	4	125-160	Auger	grayish-brown	subangular blocky weak medium	no horizon	B	organics mottled oxidized	no	no	Floodplain alluvium with some woody debris. Terminated at log/root/organic obstruction.
36	1	0-90	Auger	light brown	granular/crumb strong medium	diffuse smooth	A		no	no	
36	2	90-145	Auger	reddish-brown	structureless	clear smooth	C	mottled	no	no	
36	3	145-170	Auger	light gray	prismatic weak medium	Unseen	B	mottled	no	no	Silt increases with depth.
36	4	170-210	Auger	reddish-brown	structureless	Unseen	B		no	no	Terminated at desired depth.
37	1	0-109	Shovel, Auger	light brown	granular/crumb moderate medium	diffuse irregular	A	organics	no	no	Probe located near apple tree.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
37	2	109-183	Shovel, Auger	brown	granular/crumb moderate medium	clear wavy	B	mottled oxidized	no	no	
37	3	183-190	Shovel, Auger	reddish-brown	granular/crumb weak fine	diffuse wavy	B	oxidized	no	no	
37	4	190-200	Shovel, Auger	brown	subangular blocky moderate coarse	no horizon	C	mottled	no	no	Terminated at desired depth.
38	1	0-127	Shovel, Auger	light brown	granular/crumb strong medium	clear irregular	A		no	no	
38	2	127-208	Shovel, Auger	brown	subangular blocky moderate medium	no horizon	B	mottled	no	no	Terminated at desired depth.
39	1	0-20	Auger	brown	granular/crumb moderate fine	abrupt smooth	A		no	no	
39	2	20-40	Auger	brown	structureless	very abrupt smooth	C		no	no	
39	3	40-100	Shovel	light brown	granular/crumb strong fine	Unseen	B		no	no	
39	4	100-140	Auger	grayish-brown	structureless	Unseen	mixed		no	no	
39	5	140-210	Auger	dark brown	structureless	Unseen	C		no	no	Terminated at desired depth.
40	1	0-163	Shovel, Auger	light brown	granular/crumb moderate medium	diffuse irregular	A	mottled oxidized	no	no	Probe located at east end of a leveled pasture area.
40	2	163-191	Shovel, Auger	reddish-brown	granular/crumb weak fine	clear smooth	B	groundwater mottled oxidized	no	no	Sandy layer distinct in the auger.
40	3	191-213	Shovel, Auger	gleyed	granular/crumb moderate medium	diffuse irregular	C	groundwater	no	no	Moist. Terminated at desired depth.
41	1	0-90	Shovel	light brown	granular/crumb moderate fine	abrupt smooth	A		no	no	
41	2	90-150	Auger, Shovel	reddish-brown	structureless	Unseen	C		no	no	
41	3	150-200	Auger, Shovel	dark brown	structureless	Unseen	C		no	no	Terminated at desired depth.
42	1	0-40	Shovel	light brown	granular/crumb moderate fine	clear wavy	A	organics	no	no	Ap horizon formed in alluvium with common rootlets.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
42	2	40-58	Shovel	light brown	subangular blocky moderate medium	clear wavy	B	mottled oxidized	no	no	Very compact floodplain alluvium.
42	3	58-160	Shovel, Auger	grayish-brown	subangular blocky weak medium	clear wavy	B	mottled oxidized	no	no	Bedded floodplain/wetland alluvium.
42	4	160-180	Auger	gray	subangular blocky weak medium	clear wavy	B	mottled oxidized	no	no	Floodplain alluvium.
42	5	180-210	Auger	gray	structureless	no horizon	B	mottled oxidized	no	no	Floodplain alluvium. Terminated at desired depth.
43	1	0-47	Shovel	light brown	granular/crumb moderate fine	clear wavy	A	organics	no	no	Ap horizon formed in alluvium with common rootlets.
43	2	47-80	Shovel	light brown	subangular blocky weak medium	clear wavy	B	mottled oxidized	no	no	Floodplain alluvium.
43	3	80-140	Shovel, Auger	grayish-brown	subangular blocky moderate medium	clear wavy	B	mottled oxidized	no	no	Floodplain/wetland alluvium.
43	4	140-190	Auger	gray	structureless	clear wavy	B	mottled oxidized	no	no	Floodplain alluvium.
43	5	190-205	Auger	gray	subangular blocky weak medium	no horizon	B	mottled oxidized	no	no	Floodplain alluvium. Terminated at desired depth.
44	1	0-31	Shovel	light brown	subangular blocky moderate fine	clear wavy	A	organics	no	no	Ap horizon formed in alluvium with common rootlets.
44	2	31-49	Shovel	light brown	subangular blocky moderate medium	clear wavy	B	mottled oxidized	no	no	Floodplain alluvium.
44	3	49-58	Shovel	grayish-brown	subangular blocky moderate medium	clear wavy	B	mottled oxidized	no	no	Floodplain/wetland alluvium.
44	4	58-75	Shovel	light gray	subangular blocky moderate medium	no horizon	B	mottled oxidized	no	no	Very compact floodplain alluvium. Terminated at dense/impassable soils.
45	1	0-30	Shovel	light brown	granular/crumb weak fine	abrupt smooth	A	organics	no	no	
45	2	30-90	Shovel	brown	structureless	no horizon	B		no	no	Increased moisture content with depth. Old agricultural roots throughout. Terminated at desired depth.
46	1	0-21	Auger	light brown	granular/crumb no ped grade fine	clear wavy	A	organics	no	no	Ap horizon formed in alluvium with common rootlets.
46	2	21-70	Shovel	brown	granular/crumb moderate fine	clear wavy	B	mottled oxidized	no	no	Floodplain alluvium.
46	3	70-145	Shovel, Auger	grayish-brown	subangular blocky weak medium	clear wavy	B	mottled oxidized	no	no	Floodplain/wetland alluvium.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
46	5	145-190	Shovel, Auger	gray	structureless	no horizon	B	mottled oxidized	no	no	Floodplain alluvium. Terminated at desired depth.
47	1	0-29	Shovel	light brown	subangular blocky moderate medium	clear wavy	A	organics	yes	no	Ap horizon formed in alluvium with common rootlets.
47	2	29-57	Shovel	light gray	subangular blocky moderate medium	clear wavy	B	mottled oxidized	no	no	Very compact floodplain alluvium.
47	3	57-120	Shovel, Auger	grayish-brown	subangular blocky moderate medium	clear wavy	B	mottled oxidized	no	no	Floodplain/wetland alluvium.
47	4	120-200	Auger	gray	structureless	no horizon	B	mottled oxidized	no	no	Floodplain alluvium. Terminated at desired depth.
48	1	0-40	Shovel	light brown	granular/crumb moderate fine	clear smooth	A		no	no	
48	2	40-55	Shovel	brown	structureless	diffuse smooth	B		no	no	
48	3	55-90	Shovel	brown	structureless	no horizon	B		no	no	
48	4	90-150	Auger	dark brown	structureless	no horizon	B		no	no	
48	5	150-190	Auger	gleyed	structureless	no horizon	C		no	no	Terminated at desired depth.
49	1	0-24	Shovel	light brown	granular/crumb weak fine	clear wavy	A	organics	no	no	Ap horizon formed in alluvium with common rootlets.
49	2	24-75	Shovel	grayish-brown	subangular blocky weak medium	clear wavy	B	mottled oxidized	no	no	Floodplain alluvium.
49	3	75-100	Shovel	grayish-brown	subangular blocky moderate medium	no horizon	B	mottled oxidized	no	no	Floodplain/wetland alluvium. Terminated at dense/impassable soils.
50	1	0-29	Shovel	light brown	granular/crumb weak fine	clear wavy	A	organics	no	no	Ap horizon formed in alluvium with common rootlets.
50	2	29-95	Shovel	grayish-brown	subangular blocky weak medium	clear wavy	B	mottled oxidized	no	no	Floodplain alluvium.
50	3	95-140	Auger	reddish-brown	subangular blocky moderate medium	no horizon	B	mottled oxidized	no	no	Floodplain/wetland alluvium, very oxidized and compact from 125cmbs. Terminated at dense/impassable soils.
51	1	0-25	Shovel	light brown	granular/crumb moderate fine	clear smooth	A		no	no	
51	2	25-75	Shovel	brown	structureless	no horizon	B		no	no	
51	3	75-110	Shovel	dark brown	structureless	clear smooth	C		no	no	

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
52	1	0-24	Shovel	light brown	structureless	clear wavy	A	organics	no	no	Ap horizon formed in alluvium with common rootlets.
52	2	24-90	Shovel	grayish-brown	granular/crumb moderate fine	clear wavy	B	mottled oxidized	no	no	Floodplain alluvium.
52	3	90-175	Shovel, Auger	grayish-brown	subangular blocky moderate medium	clear wavy	B	mottled oxidized	no	no	Floodplain/wetland alluvium.
52	4	175-200	Auger	gray	structureless	no horizon	B	mottled oxidized	no	no	Floodplain alluvium. Terminated at desired depth.
53	1	0-31	Shovel	light brown	subangular blocky weak fine	clear wavy	A	organics	no	no	Ap horizon formed in alluvium with common rootlets.
53	2	31-75	Shovel	light brown	subangular blocky weak medium	clear wavy	B	mottled oxidized	yes	no	Floodplain alluvium, with one clear glass fragment at ~50cmbs.
53	3	75-130	Auger	grayish-brown	subangular blocky moderate medium	no horizon	B	mottled oxidized	no	no	Floodplain/wetland alluvium, very oxidized and compact at 125cmbs. Terminated at dense/impassable soils.
54	1	0-51	Shovel	light brown	subangular blocky moderate medium	clear wavy	A	organics	no	no	Ap horizon formed in alluvium with common rootlets.
54	2	51-77	Shovel	gray	structureless	clear wavy	B		no	no	Floodplain alluvium.
54	3	77-84	Shovel	light gray	granular/crumb weak fine	clear wavy	B	mottled oxidized	no	no	Floodplain/wetland alluvium, buried surface between floods.
54	4	84-105	Shovel	gray	structureless	no horizon	B		no	no	Floodplain alluvium. Terminated at poor/no recovery.
55	1	0-58	Shovel	light brown	subangular blocky weak fine	abrupt wavy	A	organics	yes	no	Ap horizon formed in alluvium with common rootlets, 1 clear glass fragment.
55	2	58-175	Shovel, Auger	gray	structureless	diffuse wavy	B	organics	no	no	Floodplain alluvium with some organic debris.
55	3	175-220	Auger	grayish-brown	structureless	no horizon	B	organics mottled oxidized	no	no	Floodplain alluvium, becomes siltier at depth, with some organic debris. Terminated at desired depth.
56	1	0-38	Shovel	light brown	subangular blocky moderate medium	clear wavy	A	organics	yes	no	Ap horizon formed in alluvium with common rootlets, 1 amber glass fragment.
56	2	38-190	Shovel, Auger	grayish-brown	structureless	clear wavy	B		no	no	Floodplain alluvium.
56	3	190-210	Shovel, Auger	gray	subangular blocky weak medium	no horizon	B	mottled oxidized	no	no	Floodplain alluvium. Terminated at desired depth.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
57	1	0-50	Shovel	light brown	granular/crumb moderate fine	diffuse irregular	A		no	no	
57	2	50-110	Shovel	brown	granular/crumb weak fine	no horizon	B		no	no	
57	3	110-180	Auger	reddish-brown	structureless	no horizon	C		no	no	Terminated at desired depth.
58	1	0-25	Shovel	light brown	structureless	clear wavy	A	organics	no	no	Ap horizon formed in alluvium with common rootlets.
58	2	25-85	Shovel	brown	subangular blocky weak medium	clear wavy	B	mottled oxidized	no	no	Floodplain alluvium.
58	3	85-140	Shovel, Auger	grayish-brown	subangular blocky moderate medium	clear wavy	B	mottled oxidized	no	no	Floodplain/wetland alluvium, very oxidized.
58	4	140-205	Auger	grayish-brown	structureless	no horizon	B	mottled oxidized	no	no	Floodplain alluvium becomes more gray below 185cmbs. Terminated at desired depth.
59	1	0-178	Shovel	light brown	granular/crumb moderate medium	clear wavy	A	trace charcoal mottled	no	no	Probe located in large rhubarb field.
59	2	178-185	Shovel	reddish-brown	granular/crumb weak fine	diffuse irregular	B	oxidized	no	no	
59	3	185-220	Shovel	brown	granular/crumb weak fine	no horizon	C	mottled oxidized	no	no	Terminated at desired depth.
60	1	0-140	Auger, Shovel	light brown	granular/crumb strong medium	clear wavy	A		yes	no	Hard, compact soil, 2 clear modern glass fragments.
60	2	140-180	Auger	grayish-brown	subangular blocky moderate medium	no horizon	B	mottled oxidized	no	no	Terminated at desired depth.
61	1	0-70	Shovel	light brown	granular/crumb weak fine	clear smooth	A		no	no	
61	2	70-110	Shovel, Auger	dark brown	prismatic moderate medium	Unseen no horizon topography	B	mottled oxidized	no	no	
61	3	110-195	Auger	reddish-brown	structureless	Unseen no horizon topography	C	oxidized	no	no	Terminated at desired depth.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
62	1	0-30	Shovel	light brown	granular/crumb weak fine	clear wavy	A		no	no	Plow zone with alluvium and fine roots.
62	2	30-110	Shovel	grayish-brown	granular/crumb moderate fine	clear wavy	B	mottled oxidized	no	no	Alluvium.
62	3	110-190	Shovel	grayish-brown	subangular blocky moderate medium	clear wavy	B	mottled oxidized	no	no	Alluvium. Terminated at desired depth.
63	1	0-144	Shovel	light brown	granular/crumb moderate medium	clear wavy	A	mottled	no	no	Modern debris.
63	2	144-177	Shovel	brown	subangular blocky moderate medium	diffuse irregular	B	mottled oxidized	no	no	
63	3	177-190	Shovel	brown	With mulch-like wood pieces moderate fine	no horizon	B	organics mottled oxidized	no	no	Terminated at poor/no recovery.
64	1	0-60	Shovel	light brown	granular/crumb moderate fine	no horizon	A		no	no	
64	2	60-100	Shovel	light gray	structureless	very abrupt smooth	C		no	no	Terminated at dense/impassable soils.
65	1	0-50	Shovel	light brown	granular/crumb moderate fine	clear smooth	A	mottled	no	no	
65	2	50-100	Shovel	light gray	structureless	clear smooth	C		no	no	Terminated at desired depth.
66	1	0-10	Shovel	light brown	subangular blocky moderate medium	clear smooth	A		no	no	Plow zone in rhubarb field. Very dry, compact soil.
66	2	10-100	Shovel	grayish-brown	granular/crumb moderate medium	clear wavy	A	mottled oxidized	no	no	Alluvium.
66	3	100-175	Auger	grayish-brown	granular/crumb weak fine	clear smooth	B		no	no	
66	4	175-200	Auger	grayish-brown	subangular blocky moderate medium	no horizon	B	mottled oxidized	no	no	Terminated at desired depth.
67	1	0-85	Shovel	light brown	granular/crumb moderate medium	clear smooth	A	mottled	no	no	

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
67	2	85-200	Shovel, Auger	reddish-brown	structureless	Unseen no horizon topography	C		no	no	Terminated at desired depth.
68	1	0-17	Shovel	light brown	structureless	clear wavy	A	organics	no	no	Ap horizon formed in alluvium with common rootlets.
68	2	17-75	Shovel	light brown	subangular blocky weak medium	clear wavy	B	mottled oxidized	no	no	Slightly compact floodplain alluvium.
68	3	75-110	Shovel	gray	structureless	no horizon	B	mottled oxidized	no	no	Loose floodplain alluvium. Terminated at poor/no recovery.
69	1	0-152	Shovel	light brown	granular/crumb strong medium	diffuse irregular	A		no	no	
69	2	152-187	Shovel	brown	subangular blocky moderate medium	no horizon	B	mottled oxidized	no	no	Terminated at dense/impassable soils.
70	0	0-70	Shovel	grayish-brown	structureless	very abrupt smooth	A		no	no	
70	2	70-120	Shovel	light gray	structureless	clear wavy	C		no	no	Minor clay inclusion.
70	3	120-200	Shovel	gray	structureless	clear smooth	C		no	no	Terminated at desired depth.
71	1	0-21	Shovel	brown	structureless	diffuse smooth	A	organics	no	no	Floodplain alluvium.
71	2	21-207	Shovel, Auger	grayish-brown	structureless	no horizon	B	organics mottled oxidized	no	no	Floodplain alluvium. Terminated at desired depth.
72	1	0-27	Shovel	brown	structureless	diffuse smooth	A	organics	no	no	Floodplain alluvium.
72	2	27-160	Shovel, Auger	grayish-brown	structureless	clear wavy	B	organics mottled oxidized	no	no	Bedded floodplain/wetland alluvium. Auger from 95cmbs.
72	3	160-203	Auger	dark gray	structureless	no horizon	B	groundwater	no	no	Floodplain alluvium. Terminated at desired depth.
73	1	0-30	Shovel	grayish-brown	structureless	diffuse irregular	A		no	no	
73	5	30-120	Shovel	grayish-brown	structureless	diffuse broken	B		no	no	
73	3	120-200	Shovel	dark gray	structureless	abrupt wavy	C		no	no	Terminated at desired depth.
74	1	0-43	Shovel	brown	structureless	clear wavy	A	organics	no	no	Floodplain alluvium.
74	2	43-130	Shovel, Auger	grayish-brown	structureless	clear wavy	B	organics mottled oxidized	no	no	Bedded floodplain/wetland alluvium.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
74	3	130-211	Auger	grayish-brown	structureless	no horizon	B	groundwater	no	no	Floodplain alluvium. Terminated at desired depth.
75	1	0-33	Shovel	brown	structureless	clear wavy	A	organics	yes	no	Floodplain alluvium, plastic weed barrier fragments, common roots.
75	2	33-130	Shovel, Auger	grayish-brown	structureless	clear wavy	B	organics mottled oxidized	no	no	Floodplain/wetland alluvium, common roots and oxidation mottling.
75	3	130-200	Auger	grayish-brown	structureless	no horizon	B	groundwater mottled oxidized	no	no	Floodplain alluvium, top 20cm very oxidized, water at ~185cmbs, silt increases with depth.
76	1	0-30	Shovel	grayish-brown	granular/crumb weak fine	clear irregular	A		no	no	
76	2	30-120	Shovel	grayish-brown	structureless	abrupt smooth	B	oxidized	no	no	
76	3	120-200	Shovel	gray	structureless	no horizon	C	oxidized	no	no	Terminated at desired depth.
77	1	0-34	Shovel	brown	structureless	clear wavy	A	organics	no	no	Floodplain alluvium, common roots.
77	2	34-120	Shovel, Auger	grayish-brown	structureless	clear wavy	B	organics mottled oxidized	no	no	Bedded floodplain/wetland alluvium, common roots.
77	3	120-213	Auger	gray	structureless	no horizon	B	groundwater	no	no	Bedded floodplain alluvium, water at 190cmbs. Terminated at desired depth.
78	1	0-36	Shovel	brown	structureless	clear wavy	A	organics	yes	no	Floodplain alluvium, common roots, plastic weed barrier fragments.
78	2	36-115	Shovel, Auger	grayish-brown	structureless	clear wavy	B	organics mottled oxidized	no	no	Floodplain/wetland alluvium, common roots .
78	3	115-207	Auger	gray	structureless	no horizon	B	groundwater oxidized	no	no	Bedded floodplain alluvium, very oxidized at upper boundary, water at 190cmbs. Terminated at desired depth.
79	1	0-37	Shovel	brown	structureless	clear wavy	A	organics	no	no	Floodplain alluvium, common roots.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
79	2	37-115	Shovel, Auger	grayish-brown	structureless	clear wavy	B	organics mottled oxidized	no	no	Floodplain alluvium, common roots.
79	3	115-210	Auger	gray	structureless	no horizon	B	groundwater	no	no	Floodplain alluvium, water at 170cmts. Terminated at desired depth.
80	1	0-30	Shovel	grayish-brown	granular/crumb weak fine	clear smooth	A		no	no	
80	2	30-120	Shovel	grayish-brown	granular/crumb moderate fine	clear smooth	B	mottled	no	no	
80	3	120-190	Shovel	dark gray	structureless	clear smooth	C	oxidized	no	no	Terminated at groundwater.
81	1	0-35	Shovel	brown	structureless	clear wavy	A	organics	no	no	Floodplain alluvium, common roots.
81	2	35-105	Shovel, Auger	grayish-brown	structureless	clear wavy	B	organics mottled oxidized	no	no	Floodplain/wetland alluvium, common roots, auger from 90cmts.
81	3	105-208	Auger	gray	structureless	no horizon	B	groundwater	no	no	Floodplain alluvium, common roots. Terminated at desired depth.
82	1	0-48	Shovel	brown	structureless	clear wavy	A	organics	no	no	Floodplain alluvium, common roots.
82	2	48-95	Shovel, Auger	grayish-brown	structureless	clear wavy	B	organics mottled oxidized	no	no	Floodplain alluvium, common roots, auger at 90 cmts.
82	3	95-210	Auger	gray	structureless	no horizon	B	groundwater mottled oxidized	no	no	Bedded floodplain alluvium, water at 170cmts.
83	1	0-20	Shovel	grayish-brown	granular/crumb moderate fine	clear smooth	A		no	no	
83	2	20-120	Shovel	brown	structureless	clear smooth	B	mottled oxidized	no	no	
83	3	120-160	Shovel	reddish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Terminated at groundwater.
84	1	0-39	Shovel	brown	structureless	clear wavy	A	organics	no	no	Floodplain/wetland alluvium, common roots .

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
84	2	39-165	Shovel, Auger	grayish-brown	structureless	clear wavy	B	organics mottled oxidized	no	no	Floodplain/wetland alluvium, common roots .
84	3	165-209	Auger	gray	structureless	no horizon	B	groundwater	no	no	Floodplain alluvium, water at 170cmbs. Terminated at desired depth.
85	1	0-41	Shovel	brown	structureless	clear wavy	A	organics	no	no	Floodplain/wetland alluvium, common roots.
85	2	41-191	Shovel, Auger	grayish-brown	structureless	no horizon	B	organics groundwater mottled oxidized	no	no	Bedded floodplain/wetland alluvium, common roots, oxidation mottling, water at 120cmbs. Terminated at desired depth.
86	1	0-30	Shovel	grayish-brown	granular/crumb weak fine	clear smooth	fill		no	no	
86	2	30-120	Shovel, Auger	brown	granular/crumb weak fine	clear smooth	b	trace charcoal oxidized	no	no	
86	3	120-200	Auger	grayish-brown	structureless	clear smooth	C	mottled oxidized	no	no	Terminated at desired depth.
87	1	0-40	Shovel	light brown	structureless	abrupt smooth	A	organics mottled	no	no	Plow zone. Silty sand.
87	2	40-52	Shovel	gray	structureless	abrupt smooth	B	oxidized	no	no	Sand layer above oxidized sediments.
87	3	52-170	Shovel	light gray	structureless	no horizon	C	oxidized	no	no	Oxidized silty sand. Terminated at poor/no recovery.
88	1	0-45	Shovel	light brown	structureless	clear smooth	A	organics mottled	no	no	Plow zone.
88	2	45-95	Shovel	light gray	structureless	clear smooth	B	oxidized	no	no	
88	3	95-200	Shovel	reddish-brown	structureless	no horizon	C	oxidized	no	no	Oxidized silty sand and sand layer with clayey sand pockets. Terminated at desired depth.
89	1	0-37	Shovel	light brown	structureless	clear smooth	A	organics mottled	yes	no	Plow zone.
89	2	37-105	Shovel	light gray	structureless	no horizon	B	oxidized	no	no	
89	3	105-195	Shovel	light gray	structureless	no horizon	B	oxidized	no	no	Sand with sandy clay pockets, mottled. Terminated at desired depth.
90	1	0-42	Shovel	brown	structureless no ped size	clear smooth	A	organics mottled	no	no	Plow zone. Silty sand.
90	2	42-190	Shovel	light gray	structureless	clear smooth	C	oxidized	no	no	Sand and silty sand, mottled. Terminated at desired depth.
91	1	0-35	Shovel	light brown	structureless	clear smooth	A		no	no	Plow zone, silty sand.
91	2	35-40	Shovel	light brown	structureless	clear smooth	B		no	no	

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
91	3	40-116	Shovel	light brown	structureless	clear smooth	B	oxidized	no	no	Oxidized silty clay. Terminated at desired depth.
91	4	116-180	Shovel	reddish-brown	structureless	clear smooth	B	oxidized	no	no	Terminated at desired depth.
92	1	0-30	Shovel	grayish-brown	granular/crumb ped grade no ped size	clear smooth	A		no	no	
92	2	30-120	Shovel	light brown	structureless	clear smooth	B	oxidized	no	no	
92	3	120-210	Shovel	dark brown	structureless	clear smooth	C		no	no	Terminated at desired depth.
93	1	0-30	Shovel	grayish-brown	granular/crumb weak fine	clear smooth	A		no	no	
93	2	30-120	Shovel	grayish-brown	structureless	clear smooth	B	oxidized	no	no	
93	3	120-200	Auger	brown	structureless	clear smooth	B	oxidized	no	no	Terminated at desired depth.
94	1	0-30	Shovel	grayish-brown	granular/crumb weak fine	clear smooth	A		no	no	
94	2	30-120	Shovel	grayish-brown	structureless	clear smooth	B	oxidized	no	no	
94	3	120-200	Shovel	reddish-brown	structureless	clear no horizon topography	B	oxidized	no	no	Terminated at desired depth.
95	1	0-30	Shovel	grayish-brown	granular/crumb weak fine	clear smooth	A		no	no	
95	2	30-120	Shovel, Auger	grayish-brown	granular/crumb weak fine	clear smooth	B	oxidized	no	no	
95	3	120-20	Auger	reddish-brown	structureless	abrupt smooth	B	oxidized	no	no	Terminated at desired depth.
96	1	0-51	Shovel	brown	structureless	clear wavy	A	organics	no	no	Floodplain/wetland alluvium, common roots .
96	2	51-194	Shovel, Auger	grayish-brown	structureless	no horizon	B	organics mottled oxidized	no	no	Floodplain/wetland alluvium, common roots . Terminated at desired depth.
97	1	0-33	Shovel	brown	structureless	clear wavy	A	organics	no	no	Floodplain/wetland alluvium, common roots .
97	2	33-203	Shovel, Auger	grayish-brown	structureless	no horizon	B	organics mottled oxidized	no	no	Floodplain/wetland alluvium, common roots . Terminated at desired depth.
98	1	0-33	Shovel	brown	structureless	clear wavy	A	organics	no	no	Floodplain/wetland alluvium, common roots .

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
98	2	33-180	Shovel, Auger	grayish-brown	structureless	clear wavy	B	organics mottled oxidized	no	no	Floodplain/wetland alluvium, common roots .
98	3	180-205	Auger	gray	structureless	no horizon	B		no	no	Floodplain alluvium. Terminated at desired depth.
99	1	0-34	Shovel	brown	structureless	clear wavy	A	organics	no	no	Floodplain/wetland alluvium, common roots .
99	2	34-204	Shovel, Auger	grayish-brown	structureless	no horizon	B	groundwater mottled oxidized	no	no	Bedded floodplain alluvium, oxidation mottling, water at 145cmbs. Terminated at desired depth.
100	1	0-36	Shovel	brown	structureless	clear wavy	A	organics	yes	no	Modern a horizon formed in floodplain alluvium, few roots, plastic weed barrier fragments, one small nail.
100	2	36-105	Shovel, Auger	grayish-brown	structureless	clear wavy	B	mottled oxidized	no	no	Floodplain/wetland alluvium, common roots .
100	3	105-180	Auger	grayish-brown	structureless	clear wavy	B	organics mottled oxidized	no	no	Floodplain/wetland alluvium, common roots .
100	4	180-208	Auger	gray	structureless	clear wavy	B	groundwater	no	no	Floodplain/wetland alluvium, common roots . Terminated at desired depth.
101	1	0-90	Shovel	light brown	structureless	no horizon	A		no	no	
101	2	90-200	Shovel, Auger	light gray	structureless	clear smooth	B	groundwater	no	no	Flood alluvium with fine sand. Terminated at desired depth.
102	1	0-30	Shovel	grayish-brown	granular/crumb weak fine	clear smooth	A	organics mottled oxidized	no	no	
102	5	30-120	Shovel	grayish-brown	granular/crumb weak fine	clear smooth	B	mottled oxidized	no	no	
102	3	120-200	Shovel	reddish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Terminated at desired depth.
103	1	0-50	Shovel	brown	structureless	clear smooth	A		yes	no	Modern Debris refuse and sewage/rot like odor.
103	2	50-90	Shovel	light gray	structureless	clear smooth	B	oxidized	yes	no	Terminated at .
104	1	0-30	Shovel	grayish-brown	granular/crumb weak medium	clear smooth	A	organics mottled oxidized	no	no	
104	2	30-120	Shovel	grayish-brown	granular/crumb weak fine	clear smooth	B	mottled oxidized	no	no	

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
104	3	120-200	Auger	reddish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Terminated at desired depth.
105	1	0-30	Shovel	grayish-brown	granular/crumb weak fine	clear smooth	A	organics mottled oxidized	yes	no	
105	2	30-120	Shovel, Auger	grayish-brown	granular/crumb weak fine	clear smooth	B	organics mottled oxidized	no	no	
105	3	120-200	Auger	reddish-brown	structureless	clear wavy	B	mottled oxidized	no	no	Terminated at desired depth.
106	1	0-40	Shovel	light brown	structureless	clear smooth	A		no	no	
106	2	40-150	Shovel, Auger	grayish-brown	structureless	clear smooth	B	oxidized	no	no	Floodplain alluvium.
106	3	150-200	Shovel, Auger	gray	structureless	clear smooth	B	oxidized	no	no	Terminated at desired depth.
107	1	0-34	Shovel	brown	structureless	clear wavy	A	organics	no	no	Floodplain/wetland alluvium, common roots .
107	2	34-204	Shovel, Auger	grayish-brown	structureless	no horizon	B	organics mottled oxidized	no	no	Bedded floodplain/wetland alluvium, oxidation mottling, few roots, auger from 100cmb. Terminated at desired depth.
108	1	0-35	Shovel	brown	structureless	clear wavy	A	organics	yes	no	Floodplain alluvium, common rootlets, 1 clear bottle glass fragment.
108	2	35-215	Shovel, Auger	grayish-brown	structureless	no horizon	B	groundwater mottled oxidized	no	no	Floodplain/wetland alluvium, common roots . Terminated at desired depth.
109	1	0-37	Shovel	brown	structureless	no horizon	A	organics	yes	no	Floodplain alluvium, some gravel from adjacent property.
109	2	37-57	Shovel	grayish-brown	structureless	clear wavy	B	organics mottled oxidized	no	no	Floodplain/wetland alluvium, common roots .
109	3	57-185	Shovel, Auger	gray	structureless	clear wavy	B	groundwater	no	no	Bedded floodplain alluvium, water at 145cmb.
109	4	185-197	Auger	grayish-brown	structureless	no horizon	B	groundwater mottled oxidized	no	no	Floodplain/wetland alluvium, common roots . Terminated at desired depth.
110	1	0-45	Shovel	light brown	structureless	diffuse smooth	A		no	no	
110	2	45-140	Shovel	brown	structureless	clear no horizon topography	B		no	no	
110	3	110-200	Shovel	grayish-brown	structureless	clear smooth	C		no	no	Terminated at desired depth.
111	1	0-35	Shovel	light brown	structureless	abrupt smooth	A		no	no	Plow zone.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
111	2	35-200	Shovel	grayish-brown	structureless	abrupt smooth	B	oxidized	no	no	80 cm of oxidized soil and alluvial sand deposits.
112	1	0-110	Shovel	light brown	structureless	clear smooth	A	oxidized	yes	no	Plow zone, modern glass fragments.
112	2	110-200	Shovel	gray	structureless	clear smooth	B	oxidized	no	no	Terminated at desired depth.
113	1	0-30	Shovel	grayish-brown	granular/crumb weak fine	clear smooth	A		no	no	
113	2	30-60	Shovel	brown	structureless	abrupt smooth	B		no	no	
113	3	60-120	Shovel, Auger	grayish-brown	granular/crumb weak fine	clear smooth	B	mottled oxidized	no	no	
113	4	120-200	Auger	dark brown	structureless	clear smooth	B	oxidized	no	no	Terminated at desired depth.
114	1	0-40	Shovel	brown	structureless	clear smooth	A		no	no	Plow zone.
114	2	40-180	Shovel	grayish-brown	structureless	clear smooth	B	oxidized	no	no	
114	3	180-200	Shovel	gray	structureless	clear smooth	C		no	no	Terminated at desired depth.
115	1	0-30	Shovel	grayish-brown	granular/crumb weak fine	clear smooth	A		no	no	
115	2	30-120	Shovel, Auger	grayish-brown	granular/crumb weak fine	clear smooth	B	oxidized	no	no	
115	3	120-200	Auger	reddish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Terminated at desired depth.
116	1	0-50	Shovel, Auger	light brown	structureless	clear smooth	A	trace charcoal oxidized	no	no	
116	2	50-160	Shovel, Auger	grayish-brown	structureless no ped grade	clear smooth	B	oxidized	no	no	
116	3	160-200	Auger	light gray	structureless	clear smooth	C		no	no	Terminated at desired depth.
117	1	0-30	Shovel	dark brown	structureless	diffuse irregular	A		no	no	
117	2	30-200	Shovel, Auger	gray	structureless	no horizon	B	mottled oxidized reduced	no	no	Terminated at desired depth.
118	1	0-35	Shovel	light brown	structureless	clear smooth	A		no	no	
118	2	35-130	Shovel	light gray	structureless	clear smooth	B	oxidized	no	no	
118	3	130-70	Shovel	gray	structureless	clear no horizon topography	C	oxidized	no	no	Terminated at desired depth.
119	1	0-50	Shovel	dark brown	structureless	diffuse wavy	A		no	no	
119	2	50-130	Shovel	gray	structureless	diffuse wavy	B		no	no	
119	3	130-180	Shovel	reddish-brown	structureless	no horizon	B	oxidized	no	no	Terminated at poor/no recovery.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
120	1	0-50	Shovel	light brown	structureless	no horizon	A		no	no	Plow zone.
120	2	50-200	Shovel	grayish-brown	structureless	clear smooth	B	oxidized	no	no	
121	1	0-50	Shovel	dark brown	structureless	diffuse wavy	A	common charcoal	no	no	
121	2	50-135	Shovel	reddish-brown	structureless	diffuse wavy	B	oxidized	no	no	Terminated at poor/no recovery.
122	1	0-100	Shovel	light brown	structureless	clear smooth	A		no	no	
122	2	100-130	Shovel	light gray	structureless	clear smooth	B	oxidized	no	no	
122	3	130-200	Auger	grayish-brown	structureless	clear smooth	B	oxidized	no	no	Terminated at desired depth.
123	1	0-45	Shovel	grayish-brown	structureless	clear smooth	A		no	no	Plow zone.
123	2	45-145	Shovel, Auger	reddish-brown	structureless	clear smooth	B	oxidized	no	no	
123	3	145-200	Shovel, Auger	light gray	structureless	clear smooth	B		no	no	Terminated at desired depth.
124	1	0-80	Shovel, Auger	grayish-brown	subangular blocky moderate medium	diffuse smooth	A	organics mottled oxidized	no	no	Auger at 75 cm.
124	2	80-120	Auger	reddish-brown	subangular blocky strong fine	no horizon	B	mottled oxidized	no	no	Compact floodplain alluvium. Terminated at dense/impassable soils.
125	1	0-130	Auger, Shovel	grayish-brown	structureless	clear smooth	A	oxidized reduced	no	no	
125	2	130-170	Auger	brown	structureless	clear smooth	B	oxidized	no	no	
125	3	170-200	Auger	gray	structureless	clear smooth	C		no	no	Terminated at desired depth.
126	1	0-40	Shovel, Auger	light brown	structureless	diffuse smooth	A		no	no	
126	2	40-150	Shovel, Auger	grayish-brown	granular/crumb no ped grade no ped size	clear smooth	B	oxidized reduced	no	no	
126	3	150-200	Auger	light gray	structureless	clear smooth	C		no	no	Terminated at desired depth.
127	1	0-50	Shovel	dark brown	structureless	diffuse wavy	A	trace charcoal	no	no	
127	2	50-135	Shovel	reddish-brown	structureless	diffuse wavy	B	oxidized	no	no	
127	3	135-200	Shovel	gray	structureless	no horizon	C		no	no	Terminated at desired depth.
128	1	0-140	Shovel, Auger	grayish-brown	granular/crumb weak fine	diffuse smooth	A	trace charcoal organics groundwater mottled oxidized	no	no	Disturbed, auger at 95 cm. Terminated at desired depth.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
128	2	140-190	Auger	grayish-brown	granular/crumb weak medium	no horizon	B	trace charcoal organics groundwater mottled oxidized	no	no	Disturbed, moisture with depth. Terminated at desired depth.
129	1	0-30	Shovel	dark brown	structureless	diffuse irregular	A		no	no	
129	2	30-150	Shovel, Auger	gray	structureless	no horizon	B	groundwater mottled oxidized reduced	no	no	Terminated at groundwater.
130	1	0-60	Shovel	brown	structureless	clear smooth	A		no	no	
130	2	60-100	Shovel	grayish-brown	structureless	clear smooth	B	groundwater oxidized	no	no	STP located in a low spot of project area making a meter sufficient rather than the standard 2. Terminated at groundwater.
131	1	0-90	Shovel, Auger	grayish-brown	subangular blocky moderate medium	clear smooth	A	trace charcoal organics mottled	no	no	Disturbed, many rootless, auger at 85 cmbs.
131	2	90-145	Auger	reddish-brown	subangular blocky strong fine	clear smooth	B	mottled oxidized	no	no	Heavy oxidation, common strong oxidized concretions.
131	3	145-168	Auger	dark gray	structureless	no horizon	C	groundwater	no	no	Floodplain alluvium, moist, groundwater at 168 cmbs. Terminated at groundwater.
132	1	0-30	Shovel	grayish-brown	structureless	diffuse wavy	A		no	no	
132	2	30-140	Shovel	gray	structureless	diffuse wavy	B	oxidized	no	no	
132	3	140-180	Shovel	reddish-brown	structureless	no horizon	B	groundwater oxidized	no	no	Terminated at groundwater.
133	1	0-40	Shovel	grayish-brown	structureless	diffuse wavy	A		no	no	
133	2	40-120	Shovel	gray	structureless	no horizon	B	groundwater oxidized	no	no	Terminated at groundwater.
134	1	0-50	Shovel	light brown	structureless	clear smooth	A	oxidized	no	no	
134	2	59-170	Shovel, Auger	reddish-brown	structureless	clear smooth	B	oxidized reduced	no	no	
134	3	170-200	Auger	grayish-brown	structureless	no horizon	C	groundwater	no	no	Terminated at desired depth.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
135	1	0-45	Shovel	grayish-brown	subangular blocky moderate fine	diffuse smooth	A	organics mottled	no	no	Disturbed.
135	2	45-120	Shovel	grayish-brown	subangular blocky weak medium	no horizon	B	groundwater mottled oxidized	no	no	Disturbed. Terminated at groundwater.
136	1	0-20	Shovel	brown	structureless	diffuse wavy	A		no	no	
136	2	20-70	Shovel	grayish-brown	structureless	diffuse wavy	B	oxidized	no	no	
136	3	70-130	Shovel	reddish-brown	structureless	abrupt wavy	B	oxidized	no	no	
136	4	130-150	Shovel	gray	structureless	no horizon	C	groundwater	no	no	Terminated at groundwater.
137	1	0-80	Shovel	light brown	structureless	clear smooth	A		no	no	
137	2	80-160	Shovel	reddish-brown	structureless	clear smooth	B	oxidized	no	no	
137	3	160-190	Auger	gray	structureless	clear smooth	C	groundwater	no	no	Terminated at desired depth.
138	1	0-28	Shovel	grayish-brown	subangular blocky weak fine	diffuse smooth	A	organics mottled	no	no	Plow zone, disturbed.
138	2	28-90	Shovel, Auger	gray	subangular blocky weak fine	abrupt smooth	B	trace charcoal organics mottled oxidized	no	no	bioturbation
138	3	90-100	Auger	reddish-brown	structureless	no horizon	B	groundwater oxidized	no	no	Dark red with oxidation, wet, alluvium. Terminated at groundwater.
139	1	0-110	Auger, Shovel	reddish-brown	structureless	clear smooth	A	oxidized	yes	no	Plow zone, disturbed, modern glass fragments.
139	2	110-140	Auger	grayish-brown	structureless	clear no horizon topography	B	groundwater	no	no	Terminated at groundwater.
140	1	0-50	Shovel	grayish-brown	subangular blocky weak medium	diffuse smooth	A	organics mottled	no	no	Plow zone, disturbed, roots.
140	2	50-100	Shovel, Auger	grayish-brown	subangular blocky weak fine	no horizon	B	organics groundwater mottled oxidized	no	no	Plow zone, disturbed, roots, auger at 80 cmbs. Terminated at groundwater.
141	1	0-110	Shovel	reddish-brown	structureless	clear smooth	A	oxidized	no	no	
141	2	110-130	Auger	grayish-brown	structureless	clear smooth	B	groundwater oxidized	no	no	Terminated at groundwater.
142	1	0-70	Shovel	light brown	structureless	clear smooth	A	mottled oxidized	no	no	

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
142	2	70-135	Shovel, Auger	reddish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvium floodplain. Terminated at groundwater.
143	1	0-90	Shovel	reddish-brown	structureless	clear smooth	A	oxidized	no	no	
143	2	90-140	Shovel, Auger	grayish-brown	structureless	clear smooth	B	groundwater oxidized	no	no	Terminated at groundwater.
144	1	0-30	Shovel	grayish-brown	subangular blocky weak medium	diffuse smooth	A	organics mottled	no	no	Sticky, ab horizon mix.
144	2	30-85	Shovel	grayish-brown	subangular blocky weak medium	no horizon	B	trace charcoal organics groundwater mottled oxidized	no	no	Sticky, groundwater at 75. Terminated at groundwater.
145	1	0-25	Shovel	grayish-brown	structureless	diffuse wavy	A	organics	no	no	Plowed layer.
145	2	25-140	Shovel	gray	structureless	no horizon	C	groundwater oxidized	no	no	Terminated at groundwater.
146	1	0-42	Shovel	dark brown	structureless	clear wavy	A	organics	no	no	Modern a horizon, common rootlets, few medium roots.
146	2	42-125	Shovel, Auger	grayish-brown	structureless	clear wavy	B	organics groundwater mottled oxidized	no	no	Floodplain/wetland alluvium, rootlets, water at 120cmbs, auger at 95cmbs.
146	3	125-185	Auger	gray	structureless	clear wavy	B		no	no	Floodplain alluvium, very oxidized at upper boundary.
146	4	185-195	Auger	grayish-brown	structureless	no horizon	C	groundwater mottled oxidized	no	no	Floodplain alluvium. Terminated at desired depth.
147	1	0-40	Shovel	grayish-brown	structureless	diffuse wavy	A	organics	no	no	
147	2	40-80	Shovel	gray	structureless	clear wavy	B		no	no	
147	3	80-120	Shovel	light gray	structureless	no horizon	B	groundwater oxidized	no	no	Terminated at groundwater.
148	1	0-40	Shovel	grayish-brown	structureless	diffuse wavy	A	organics	no	no	
148	2	40-110	Shovel	gray	granular/crumb weak medium	diffuse wavy	B	trace charcoal groundwater	no	no	
148	3	110-130	Shovel	reddish-brown	structureless	no horizon	B	groundwater oxidized	no	no	Terminated at groundwater.
149	1	0-30	Shovel	brown	subangular blocky moderate medium	clear smooth	A	organics	no	no	

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
149	2	30-120	Shovel, Auger	grayish-brown	subangular blocky weak medium	clear smooth	B	organics groundwater mottled oxidized	no	no	
149	3	120-150	Auger	reddish-brown	structureless	clear wavy	B	groundwater mottled oxidized	no	no	Terminated at groundwater.
150	1	0-30	Shovel	grayish-brown	subangular blocky moderate medium	clear smooth	A		yes	no	Modern debris.
150	2	30-120	Shovel	grayish-brown	granular/crumb weak fine	clear smooth	B	organics mottled oxidized	yes	no	
150	3	120-150	Auger	reddish-brown	structureless	clear wavy	B	groundwater mottled oxidized	no	no	Terminated at groundwater.
151	1	0-20	Shovel	other	granular/crumb moderate fine	clear smooth	Mixed	organics mottled	yes	no	Septic field. Terminated at .
152	1	0-35	Shovel	grayish-brown	subangular blocky weak medium	clear smooth	A	organics mottled	no	no	
152	2	35-80	Shovel	grayish-brown	structureless	diffuse smooth	B	mottled oxidized	no	no	
152	3	80-145	Shovel	reddish-brown	structureless	clear wavy	B	groundwater mottled oxidized	no	no	Terminated at groundwater.
153	1	0-30	Shovel	light brown	structureless	clear smooth	A	oxidized	no	no	
153	2	30-120	Shovel, Auger	reddish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvial floodplain. Oxidization increases with depth.
153	3	120-140	Auger	grayish-brown	structureless	clear smooth	B	groundwater oxidized	no	no	Terminated at groundwater.
154	1	0-26	Shovel	brown	structureless	clear wavy	A	organics	no	no	Plow zone with common rootlets.
154	2	26-90	Shovel	grayish-brown	structureless	clear wavy	B	organics groundwater mottled oxidized	no	no	Floodplain/wetland alluvium, few rootlets, water at 90cms.
154	2	90-195	Shovel, Auger	gray	structureless	no horizon	B	groundwater mottled oxidized	no	no	Bedded floodplain alluvium, silt lenses. Terminated at desired depth.
155	1	0-50	Shovel	light brown	structureless	clear smooth	A		no	no	
155	2	50-70	Shovel	reddish-brown	structureless	clear smooth	B	oxidized	no	no	
155	3	70-80	Shovel	grayish-brown	structureless	clear smooth	C	groundwater	no	no	Terminated at groundwater.
156	1	0-31	Shovel	brown	structureless	clear wavy	A	organics	no	no	Plow zone with common rootlets.
156	2	31-64	Shovel	grayish-brown	structureless	clear wavy	B	organics mottled oxidized	no	no	Floodplain/wetland alluvium, oxidation mottling, few rootlets.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
156	3	64-150	Shovel, Auger	gray	structureless	no horizon	B	groundwater mottled oxidized	no	no	Floodplain alluvium, water at 105cmbs, auger from 100cmbs. Terminated at cave in.
157	1	0-31	Shovel	brown	structureless	clear wavy	A	organics	no	no	Plow zone with common rootlets.
157	2	31-63	Shovel	grayish-brown	structureless	clear wavy	B	organics mottled oxidized	no	no	Floodplain/ wetland alluvium, oxidation mottling, few rootlets.
157	3	63-120	Shovel, Auger	dark gray	structureless	no horizon	B	groundwater	no	no	Floodplain alluvium, water at 95cmbs, auger from 90cmbs. Terminated at poor/no recovery.
158	1	0-80	Shovel	light brown	structureless	clear smooth	A	oxidized	yes	no	Disturbed, modern debris.
158	2	80-90	Shovel	light gray	structureless	clear smooth	B	groundwater reduced	no	no	STP terminated due to ground water at 90cm. Terminated at groundwater.
159	1	0-120	Shovel	grayish-brown	structureless	diffuse smooth	A	mottled oxidized	no	no	Alluvium floodplain.
159	2	120-185	Auger	gray	structureless	clear smooth	B	groundwater reduced	no	no	Alluvium floodplain, terminated due to ground water at 185cm. Terminated at groundwater.
160	1	0-34	Shovel	brown	structureless	clear wavy	A	organics	no	no	Plow zone with common rootlets.
160	2	34-95	Shovel, Auger	grayish-brown	structureless	clear wavy	B	organics mottled oxidized	no	no	Floodplain/wetland alluvium, oxidation mottling, few rootlets.
160	3	95-135	Auger	dark gray	structureless	no horizon	B	groundwater	no	no	Floodplain alluvium, water at 100cmbs, auger from 90cmbs. Terminated at poor/no recovery.
161	1	0-50	Shovel	light brown	structureless	no horizon	B	groundwater	yes	no	Ground water 50cm. Terminated at groundwater.
162	1	0-29	Shovel	brown	structureless	clear wavy	A	organics	yes	no	Plow zone with common rootlets.
162	2	29-95	Shovel	grayish-brown	structureless	clear wavy	B	organics groundwater mottled oxidized	no	no	Floodplain/wetland alluvium, few rootlets, water at 90cmbs, auger from 90cmbs.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
162	3	95-190	Auger	gray	structureless	no horizon	B	groundwater mottled oxidized	no	no	Bedded floodplain/wetland alluvium. Terminated at desired depth.
163	1	0-30	Shovel	grayish-brown	subangular blocky weak medium	clear smooth	A	mottled	no	no	
163	2	30-120	Shovel	0	granular/crumb weak medium	clear smooth	B	mottled reduced	no	no	
163	3	120-140	Auger	reddish-brown	structureless	clear wavy	C	groundwater mottled oxidized	no	no	Terminated at groundwater.
164	1	0-50	Shovel	grayish-brown	structureless	diffuse wavy	A	organics	no	no	
164	2	50-90	Shovel	gray	granular/crumb weak medium	clear smooth	B		no	no	
164	3	90-110	Shovel, Auger	gray	structureless	no horizon	B	groundwater oxidized	no	no	Terminated at groundwater.
165	1	0-40	Shovel	light brown	structureless	clear smooth	A		no	no	
165	2	40-120	Shovel	reddish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvial floodplain.
165	3	120-150	Auger	grayish-brown	structureless	clear smooth	C	groundwater oxidized	no	no	Alluvial floodplain. Terminated at groundwater.
166	1	0-38	Shovel	brown	structureless	clear wavy	A	organics	no	no	Plow zone with common rootlets.
166	2	38-85	Shovel	grayish-brown	subangular blocky weak fine	clear wavy	B	organics mottled oxidized	no	no	Low energy floodplain alluvium, few rootlets.
166	3	85-192	Shovel, Auger	gray	structureless	no horizon	B	groundwater mottled oxidized	no	no	Floodplain alluvium, water at 90cmbs, auger from 90cmbs. Terminated at desired depth.
167	1	0-69	Shovel	brown	structureless	clear wavy	A	organics	yes	no	Fill, common rootlets to small roots, 1 small clear glass fragment.
167	2	69-130	Shovel, Auger	grayish-brown	subangular blocky weak fine	clear wavy	B	organics groundwater mottled oxidized	no	no	Floodplain alluvium, few rootlets, water at 130cmbs, auger from 90cmbs.
167	3	130-198	Auger	gray	structureless	no horizon	B	groundwater mottled oxidized	no	no	Bedded floodplain alluvium, silt increases with depth. Terminated at desired depth.
168	1	0-40	Shovel	light brown	structureless	diffuse smooth	A		no	no	Roots.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
168	2	40-160	Shovel, Auger	grayish-brown	structureless	clear smooth	B	groundwater mottled oxidized reduced	no	no	Terminated at groundwater.
169	1	0-40	Shovel	light brown	structureless	diffuse smooth	A		no	no	
169	2	40-130	Shovel, Auger	reddish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvial floodplain.
169	3	130-140	Auger	grayish-brown	structureless	clear smooth	C	groundwater oxidized	no	no	Alluvial floodplain. Terminated at groundwater.
170	1	0-30	Shovel	grayish-brown	subangular blocky moderate medium	clear smooth	A		no	no	
170	2	30-90	Shovel	grayish-brown	subangular blocky weak fine	clear smooth	B	groundwater mottled	no	no	
170	3	90-130	Shovel, Auger	reddish-brown	structureless	clear wavy	B	groundwater mottled oxidized	no	no	Terminated at groundwater.
171	1	0-25	Shovel	grayish-brown	structureless	clear wavy	A	organics	no	no	
171	2	25-80	Shovel	gray	granular/crumb weak medium	diffuse wavy	B	trace charcoal	no	no	
171	3	80-140	Shovel	grayish-brown	structureless	no horizon	B	groundwater oxidized	no	no	Terminated at groundwater.
172	1	0-37	Shovel	brown	structureless	clear wavy	A	organics	no	no	Plow zone with common rootlets.
172	2	37-81	Shovel	grayish-brown	structureless	clear wavy	B	organics mottled oxidized	no	no	Floodplain alluvium, few rootlets.
172	3	81-165	Shovel, Auger	gray	structureless	clear wavy	B	groundwater mottled oxidized	no	no	Floodplain alluvium, water at 90cms, auger from 90cms.
172	4	165-175	Auger	gray	angular blocky moderate medium	no horizon	B	organics groundwater mottled oxidized	no	no	Floodplain alluvium, few rootlets. Terminated at dense/impassable soils.
173	1	0-30	Shovel	grayish-brown	subangular blocky moderate fine	abrupt smooth	A	organics mottled	no	no	
173	2	30-120	Shovel, Auger	gleyed	subangular blocky moderate medium	clear smooth	B	organics mottled oxidized	no	no	
173	3	12-150	Auger	reddish-brown	structureless	clear no horizon topography	B	groundwater mottled oxidized	no	no	Terminated at groundwater.
174	1	0-43	Shovel	brown	structureless	clear wavy	A	organics	no	no	Plow zone with common rootlets.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
174	2	43-95	Shovel, Auger	grayish-brown	structureless	clear wavy	B	organics groundwater mottled oxidized	no	no	Floodplain alluvium, few rootlets, auger from 90cmbs, water at 95cmbs.
174	3	95-130	Auger	gray	structureless	clear wavy	B	groundwater mottled oxidized	no	no	Floodplain alluvium.
174	3	130-175	Auger	gray	structureless	no horizon	B	organics groundwater mottled oxidized	no	no	Floodplain alluvium, few rootlets. Terminated at groundwater.
175	1	0-39	Shovel	brown	structureless	clear wavy	A	organics	no	no	Plow zone with common small roots.
175	2	39-95	Shovel, Auger	grayish-brown	structureless	clear wavy	B	organics mottled oxidized	no	no	Floodplain alluvium, few rootlets. Terminated at 90cmbs.
175	3	95-165	Auger	gray	structureless	no horizon	B	organics groundwater mottled oxidized	no	no	Floodplain alluvium. Terminated at desired depth.
176	1	0-30	Shovel	grayish-brown	subangular blocky moderate medium	clear smooth	A		no	no	
176	2	30-150	Shovel, Auger	light gray	subangular blocky moderate medium	clear smooth	B	groundwater mottled oxidized	no	no	
176	3	150-180	Auger	reddish-brown	subangular blocky moderate fine	no horizon	B	groundwater mottled oxidized	no	no	Groundwater. Terminated at groundwater.
177	1	0-35	Shovel	grayish-brown	structureless	clear smooth	A	organics	no	no	Plow zone.
177	2	35-90	Shovel	gray	granular/crumb weak medium	clear wavy	B	trace charcoal organics mottled oxidized	no	no	
177	3	90-110	Shovel	gray	structureless	no horizon	B	groundwater	no	no	Terminated at groundwater.
178	1	0-30	Shovel	grayish-brown	structureless	no horizon	A	organics	no	no	
178	2	30-140	Shovel	grayish-brown	structureless	very abrupt smooth	B	trace charcoal oxidized	no	no	
178	3	140-150	Shovel	gray	structureless	no horizon	C		no	no	Terminated at groundwater.
179	1	0-35	Shovel	brown	granular/crumb weak medium	clear smooth	A		no	no	Plow zone.
179	2	35-140	Shovel	brown	subangular blocky moderate fine	clear smooth	B	trace charcoal mottled oxidized	no	no	
179	3	140-170	Auger	dark gray	structureless	no horizon	C	groundwater reduced	no	no	Floodplain alluvium. Terminated at groundwater.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
180	1	0-30	Shovel	light brown	structureless	clear smooth	A	trace charcoal oxidized	no	no	Plow zone.
180	2	30-95	Shovel	reddish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Floodplain alluvium.
180	3	95-140	Auger	light gray	structureless	clear smooth	C	groundwater oxidized reduced	no	no	Floodplain alluvium. Terminated at groundwater.
181	1	0-32	Shovel	brown	granular/crumb weak fine	clear wavy	A	organics	no	no	Plow zone with common small roots.
181	2	32-100	Shovel, Auger	grayish-brown	subangular blocky weak fine	clear wavy	B	organics groundwater mottled oxidized	no	no	Floodplain alluvium, water at 90cmbs, auger from 90cmbs.
181	3	100-200	Auger	gray	structureless	no horizon	B	groundwater mottled oxidized	no	no	Bedded floodplain alluvium. Terminated at desired depth.
182	1	0-29	Shovel	brown	structureless	clear wavy	A	organics	no	no	Plow zone with common small roots.
182	2	29-135	Shovel, Auger	grayish-brown	subangular blocky weak medium	clear wavy	B	organics groundwater mottled oxidized	no	no	Bedded floodplain alluvium, few rootlets, auger from 90cmbs, water at 80cmbs.
182	3	135-150	Auger	gray	angular blocky weak medium	no horizon	B	organics groundwater mottled oxidized	no	no	Bedded floodplain alluvium. Terminated at dense/impassable soils.
183	1	0-120	Auger, Shovel	reddish-brown	structureless	diffuse smooth	B	mottled oxidized	no	no	Plow zone with common small roots.
183	2	120-165	Auger	light gray	structureless	clear smooth	C	groundwater mottled oxidized reduced	no	no	Floodplain alluvium. Terminated at groundwater.
184	1	0-35	Shovel	grayish-brown	subangular blocky moderate medium	clear smooth	A	organics	no	no	
184	2	35-120	Shovel, Auger	light gray	subangular blocky moderate medium	clear smooth	B	groundwater mottled	no	no	
184	3	120-160	Auger	light gray	structureless	clear smooth	B	groundwater mottled oxidized	no	no	Terminated at groundwater.
185	1	0-29	Shovel	brown	structureless	clear wavy	A	organics	no	no	Plow zone with common small roots.
185	2	29-95	Shovel, Auger	grayish-brown	subangular blocky weak fine	clear wavy	B	organics groundwater mottled oxidized	no	no	Floodplain alluvium, few rootlets, water at 85cmbs, auger from 90cmbs.
185	3	95-165	Auger	grayish-brown	structureless	clear wavy	B	groundwater mottled oxidized	no	no	Floodplain alluvium.
185	4	165-190	Auger	gray	angular blocky moderate medium	no horizon	B	organics groundwater mottled oxidized	no	no	Floodplain alluvium.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
186	1	0-30	Shovel	light brown	structureless	clear smooth	A		no	no	Plow zone.
186	2	30-125	Shovel	grayish-brown	structureless	diffuse smooth	B	mottled oxidized	no	no	Alluvial floodplain.
186	3	125-140	Auger	light gray	structureless	clear smooth	C	groundwater reduced	no	no	Alluvial floodplain. Terminated at groundwater.
187	1	0-29	Shovel	brown	structureless	clear wavy	A	organics	no	no	Plow zone with common small roots.
187	2	29-95	Shovel, Auger	grayish-brown	granular/crumb weak fine	clear wavy	B	groundwater mottled oxidized	no	no	Floodplain alluvium, few rootlets, water at 90cmbs, auger from 90cmbs .
187	3	95-135	Shovel, Auger	dark gray	structureless	clear wavy	B	groundwater mottled oxidized	no	no	Alluvial floodplain.
187	4	135-150	Auger	gray	angular blocky weak medium	no horizon	B	organics groundwater mottled oxidized	no	no	Alluvial floodplain. Terminated at dense/impassable soils.
188	1	0-35	Shovel	grayish-brown	subangular blocky moderate medium	clear smooth	A	organics	no	no	
188	2	35-120	Shovel	grayish-brown	subangular blocky weak medium	clear wavy	B	groundwater mottled oxidized	no	no	
188	3	120-130	Auger	dark gray	structureless	no horizon	B	groundwater	no	no	
188	4	130-150	Auger	gleyed	structureless	no horizon	C	groundwater mottled	no	no	Terminated at groundwater.
189	1	0-80	Shovel	reddish-brown	structureless	diffuse smooth	B	mottled oxidized	no	no	Plow zone.
189	2	80-120	Shovel, Auger	grayish-brown	structureless	clear smooth	C	groundwater oxidized reduced	no	no	Terminated at groundwater.
190	1	0-56	Shovel	brown	granular/crumb weak fine	clear wavy	A	organics	yes	no	Plow zone and fill, common rootlets, modern debris.
190	2	56-125	Shovel, Auger	grayish-brown	angular blocky weak fine	clear wavy	B	organics groundwater mottled oxidized	no	no	Low energy floodplain alluvium, oxidation mottling, few rootlets, water at 125cmbs, auger from 95cmbs.
190	3	125-190	Auger	gray	structureless	no horizon	B	organics groundwater mottled oxidized	no	no	Alluvial floodplain. Terminated at desired depth.
191	1	0-63	Shovel	brown	granular/crumb weak fine	clear wavy	A	organics	no	no	Plow zone and fill, common rootlets, modern debris.
191	2	63-115	Shovel, Auger	grayish-brown	subangular blocky weak fine	clear wavy	B	organics groundwater mottled oxidized	no	no	Floodplain alluvium, few rootlets, auger from 90cmbs, water at 95cmbs.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
191	3	115-175	Auger	gray	structureless	clear wavy	B	groundwater mottled oxidized	no	no	Bedded floodplain alluvium, oxidation mottling..
191	3	175-205	Auger	dark gray	angular blocky weak medium	no horizon	B	organics groundwater mottled oxidized	no	no	Alluvial floodplain. Terminated at desired depth.
192	1	0-35	Shovel	grayish-brown	subangular blocky moderate medium	clear smooth	A	organics	no	no	
192	2	35-70	Shovel	grayish-brown	subangular blocky weak fine	clear smooth	B	groundwater mottled	no	no	
192	3	70-150	Shovel, Auger	dark gray	structureless	clear wavy	C	groundwater oxidized	no	no	Terminated at groundwater.
193	1	0-29	Shovel	brown	granular/crumb weak fine	clear wavy	A	organics	no	no	Plow zone with common small roots.
193	2	29-95	Shovel	grayish-brown	subangular blocky weak fine	clear wavy	B	organics groundwater mottled oxidized	no	no	Floodplain alluvium, few rootlets, water at 80cms, auger from 90cms..
193	3	95-165	Auger	gray	structureless	clear wavy	B	groundwater mottled oxidized	no	no	Bedded floodplain alluvium.
193	3	165-175	Auger	dark gray	subangular blocky weak medium	no horizon	B	groundwater mottled oxidized	no	no	Floodplain alluvium. Terminated at dense/impassable soils.
194	1	0-30	Shovel	grayish-brown	granular/crumb weak medium	clear smooth	A	organics	no	no	Plow zone.
194	2	30-120	Shovel, Auger	grayish-brown	granular/crumb weak fine	clear wavy	B	trace charcoal oxidized	no	no	
194	3	120-140	Auger	gray	structureless	no horizon	B	groundwater oxidized	no	no	Groundwater. Terminated at groundwater.
195	1	0-30	Auger	light brown	structureless	clear smooth	A		no	no	Plow zone.
195	2	30-110	Auger, Shovel	grayish-brown	structureless	clear smooth	B	trace charcoal mottled oxidized	no	no	Alluvial floodplain.
195	3	110-150	Auger	light gray	structureless	clear smooth	C	groundwater oxidized	no	no	Alluvial floodplain. Terminated at groundwater.
196	1	0-35	Shovel	grayish-brown	subangular blocky moderate medium	clear smooth	A	organics mottled	no	no	
196	2	35-120	Shovel, Auger	grayish-brown	subangular blocky moderate medium	clear smooth	B	groundwater mottled oxidized	no	no	
196	3	120-180	Auger	grayish-brown	structureless	clear smooth	C	groundwater mottled oxidized	no	no	Terminated at groundwater.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
197	1	0-30	Shovel	brown	structureless	diffuse wavy	A	organics	yes	no	Grassy field. Modern trash.
197	2	30-80	Shovel	grayish-brown	structureless	no horizon	B	groundwater oxidized	no	no	Disturbed loam mixed with gray alluvial sand. Groundwater at 70 cm. Terminated at groundwater.
198	1	0-30	Shovel	light brown	structureless	clear smooth	A		no	no	Plow zone.
198	2	39-95	Shovel	grayish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvial floodplain.
198	3	95-130	Auger	light gray	structureless	clear smooth	C	groundwater mottled oxidized reduced	no	no	Alluvial floodplain. Terminated at groundwater.
199	1	0-20	Shovel	brown	structureless	diffuse wavy	A	organics	no	no	Grassy field.
199	2	20-80	Shovel	grayish-brown	structureless	diffuse wavy	B	groundwater oxidized	no	no	
199	3	80-120	Shovel	grayish-brown	structureless	no horizon	C	groundwater oxidized	no	no	Disturbed loam with gray alluvial sand mixed in. Groundwater at 80cm. Terminated at desired depth.
200	1	0-20	Shovel	light brown	structureless	clear smooth	A		no	no	Plow zone.
200	2	20-65	Shovel	grayish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvial floodplain.
200	3	65-95	Shovel	light gray	structureless	clear smooth	C	groundwater mottled oxidized reduced	no	no	Ground water at 95cm. Terminated at groundwater.
201	1	0-40	Shovel	light brown	structureless	diffuse smooth	A	trace charcoal	no	no	Plow zone.
201	2	40-120	Shovel, Auger	grayish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvial floodplain.
201	3	120-149	Auger	light gray	structureless	clear smooth	C	groundwater mottled oxidized reduced	no	no	Alluvial floodplain. Terminated at groundwater.
202	1	0-25	Shovel	brown	structureless	diffuse wavy	A	organics	no	no	Grassy field.
202	2	25-55	Shovel	grayish-brown	structureless	diffuse wavy	B	groundwater mottled oxidized	no	no	

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
202	3	55-110	Shovel	grayish-brown	structureless	no horizon	B	groundwater mottled oxidized	no	no	Groundwater at 80 cm. Terminated at desired depth.
203	1	0-40	Shovel	light brown	structureless	clear smooth	A	trace charcoal	no	no	Plow zone.
203	2	40-110	Shovel, Auger	grayish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvial floodplain.
203	3	110-1160	Auger	light gray	structureless	clear smooth	C	groundwater mottled oxidized	no	no	Alluvial floodplain. Terminated at groundwater.
204	1	0-10	Shovel	brown	structureless	no horizon	Fill	organics	no	no	Grass field, in foot print of house compacted construction gravel. Rocky obstruction. Terminated at gravel/cobble obstruction.
205	1	0-50	Shovel	light brown	structureless	clear smooth	A	trace charcoal oxidized	no	no	
205	2	50-130	Shovel	reddish-brown	structureless	clear smooth	B	trace charcoal mottled oxidized	no	no	Alluvial floodplain.
205	3	130-160	Auger	light gray	structureless	clear smooth	C	groundwater oxidized reduced	no	no	Heavy oxidization within horizon C. Terminated at groundwater.
206	1	0-25	Shovel	brown	structureless	diffuse wavy	A	organics	no	no	Grass field.
206	2	25-115	Shovel	grayish-brown	structureless	no horizon	B	groundwater mottled oxidized	no	no	Groundwater at 100 cm. Terminated at desired depth.
207	1	0-40	Shovel	light brown	structureless	clear smooth	A		yes	no	Some modern debris, plow zone.
207	2	40-140	Shovel, Auger	grayish-brown	structureless	clear smooth	B	trace charcoal groundwater mottled oxidized	no	no	Alluvial floodplain. Terminated at groundwater.
208	1	0-25	Shovel	grayish-brown	structureless	diffuse wavy	A	organics	no	no	Grass roots.
208	2	25-85	Shovel	gray	structureless	diffuse wavy	B	oxidized	no	no	
208	3	85-145	Shovel	gray	structureless	no horizon	B	groundwater oxidized	no	no	Groundwater. Terminated at groundwater.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
209	1	0-30	Shovel	light brown	structureless	clear smooth	A		no	no	Plow zone.
209	2	30-120	Shovel, Auger	grayish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvial floodplain.
209	3	120-160	Auger	light gray	structureless	clear smooth	C	groundwater mottled reduced	no	no	Alluvial floodplain. Terminated at groundwater.
210	1	0-40	Auger, Shovel	light brown	structureless	abrupt smooth	A	trace charcoal organics mottled	yes	no	Plow zone, modern glass fragments.
210	2	40-140	Auger, Shovel	gray	structureless	no horizon	B	groundwater oxidized	no	no	Groundwater at 105 cmbs. Terminated at groundwater.
211	1	0-30	Shovel	grayish-brown	structureless	clear wavy	A	trace charcoal organics	yes	no	
211	2	30-120	Shovel, Auger	gray	subangular blocky weak medium	clear wavy	B	trace charcoal oxidized	no	no	
211	3	120-140	Auger	gray	structureless	no horizon	C	groundwater oxidized	no	no	Terminated at groundwater.
212	1	0-40	Auger	brown	subangular blocky moderate medium	no horizon	Fill	organics	no	no	Fill. Terminated at gravel/cobble obstruction.
213	1	0-40	Shovel	grayish-brown	subangular blocky moderate medium	clear wavy	Fill	organics mottled	no	no	
213	2	40-120	Shovel	gray	structureless	clear smooth	B	oxidized	no	no	
213	3	120-140	Auger	gray	structureless	no horizon	B	groundwater oxidized	no	no	Terminated at groundwater.
214	1	0-40	Auger	brown	structureless	diffuse wavy	A	organics	no	no	Grassy field.
214	2	40-70	Auger	grayish-brown	structureless	diffuse wavy	B	trace charcoal groundwater mottled oxidized	no	no	
214	3	70-130	Auger	grayish-brown	structureless	no horizon	C	groundwater mottled oxidized	no	no	Disturbed with gray alluvial sand. Groundwater at 90 cm. Terminated at groundwater.
215	1	0-30	Shovel	light brown	structureless	diffuse smooth	A		no	no	Plow zone.
215	2	30-120	Shovel, Auger	grayish-brown	structureless	clear smooth	B	groundwater mottled oxidized	no	no	Alluvial floodplain. Terminated at groundwater.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
216	1	0-30	Shovel	light brown	structureless	diffuse smooth	A		no	no	Plow zone.
216	2	30-80	Shovel	grayish-brown	structureless	clear smooth	B	groundwater mottled	no	no	Alluvial floodplain. Terminated at groundwater.
217	1	0-30	Shovel	brown	structureless	diffuse wavy	A	organics	no	no	Grassy field.
217	2	30-80	Shovel	grayish-brown	structureless	no horizon	B	trace charcoal groundwater oxidized	no	no	Groundwater at 45cm. Terminated at groundwater.
218	1	0-25	Shovel	brown	structureless	diffuse wavy	A	organics	no	no	Grassy field.
218	2	25-100	Shovel	grayish-brown	structureless	no horizon	B	organics groundwater oxidized	no	no	Groundwater at 60cm. Terminated at groundwater.
219	1	0-30	Shovel	light brown	structureless	diffuse smooth	A		no	no	Plow zone.
219	2	30-100	Shovel	grayish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvial floodplain.
219	3	100-115	Shovel	light gray	structureless	clear smooth	B	groundwater mottled oxidized reduced	no	no	Alluvial floodplain. Terminated at groundwater.
220	1	0-30	Auger, Shovel	brown	structureless	diffuse wavy	A	organics	no	no	Grassy field.
220	2	30-60	Auger, Shovel	grayish-brown	structureless	diffuse wavy	B	groundwater mottled oxidized	no	no	
220	3	60-100	Auger, Shovel	grayish-brown	structureless	no horizon	B	groundwater mottled oxidized	no	no	Groundwater at 65 cm. Terminated at groundwater.
221	1	0-30	Shovel	grayish-brown	granular/crumb moderate fine	clear wavy	A	organics	no	no	
221	2	30-110	Auger	gray	granular/crumb moderate medium	abrupt smooth	B	oxidized	no	no	
221	3	110-130	Auger	light gray	structureless	no horizon	B	groundwater oxidized	no	no	Terminated at groundwater.
222	1	0-50	Shovel	grayish-brown	subangular blocky weak medium	diffuse smooth	A	organics	no	no	Plow zone, disturbed, many rootlets, sticky with depth.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
222	2	50-115	Shovel, Auger	grayish-brown	subangular blocky moderate medium	no horizon	B	groundwater mottled oxidized	no	no	Floodplain alluvium, very sticky, auger at 90 cm, water table at 110 cmbs. Terminated at groundwater.
223	1	0-30	Shovel	grayish-brown	subangular blocky weak fine	diffuse smooth	A	organics	yes	no	Plow zone, 1 clear flat glass fragment.
223	2	30-100	Shovel, Auger	light gray	subangular blocky moderate medium	clear smooth	B	mottled oxidized	no	no	Disturbed , auger at 90 cm.
223	3	100-120	Auger	reddish-brown	granular/crumb weak fine	clear smooth	B	oxidized	no	no	
223	4	120-130	Auger	light gray	subangular blocky weak fine	no horizon	C	groundwater	no	no	Groundwater at 125 cmbs. Terminated at groundwater.
224	1	0-50	Shovel	brown	structureless	diffuse wavy	A	organics	yes	no	
224	2	50-100	Shovel	gray	granular/crumb weak fine	clear irregular	B	trace charcoal organics oxidized	no	no	
224	3	100-120	Auger	gray	structureless	no horizon	B	trace charcoal organics groundwater oxidized	no	no	Terminated at groundwater.
225	1	0-40	Shovel	light brown	structureless	clear smooth	A	trace charcoal	yes	no	Plow zone.
225	2	40-90	Shovel	grayish-brown	structureless	clear smooth	B	tephra mottled oxidized	no	no	Alluvial floodplain.
225	3	90-150	Shovel, Auger	gray	structureless	clear smooth	C	groundwater mottled oxidized reduced	no	no	Alluvial floodplain. Terminated at groundwater.
226	1	0-30	Shovel	grayish-brown	subangular blocky weak medium	diffuse smooth	A	trace charcoal organics	yes	no	Modern debris.
226	2	30-70	Shovel	grayish-brown	subangular blocky moderate medium	diffuse smooth	B	common charcoal organics	yes	no	Modern glass bottle fragment.
226	3	70-106	Shovel, Auger	light gray	subangular blocky moderate fine	no horizon	C	groundwater oxidized	no	no	Oxidized clay, auger at 80 cmbs, sticky, water table at 100 cmbs. Terminated at groundwater.
227	1	0-40	Shovel	light brown	structureless	clear smooth	A		no	no	Plow zone.
227	2	40-140	Shovel, Auger	grayish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvial floodplain.
227	3	140-150	Auger	gray	structureless	clear smooth	C	trace charcoal groundwater reduced	no	no	Alluvial floodplain. Terminated at groundwater.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
228	1	0-40	Shovel	light brown	structureless	clear smooth	A		no	no	Plow zone.
228	2	40-120	Shovel, Auger	grayish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvial floodplain.
228	3	120-160	Auger	gray	structureless	clear smooth	B	groundwater reduced	no	no	Alluvial floodplain. Terminated at groundwater.
229	1	0-30	Shovel	light brown	structureless	diffuse smooth	A		no	no	Plough layer.
229	2	30-120	Shovel, Auger	reddish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvial floodplain.
229	3	120-150	Auger	gray	structureless	clear smooth	B	groundwater mottled reduced	no	no	Alluvial floodplain. Terminated at groundwater.
230	1	0-30	Shovel	brown	structureless	diffuse wavy	A	organics	no	no	Grassy field.
230	2	30-130	Shovel	grayish-brown	structureless	no horizon	C	trace charcoal groundwater mottled oxidized	no	no	Groundwater at 110cm. Terminated at groundwater.
231	1	0-40	Shovel	light brown	structureless	clear smooth	A	trace charcoal	no	no	Plow zone.
231	2	40-140	Shovel, Auger	grayish-brown	structureless	clear smooth	B	groundwater mottled oxidized	no	no	Alluvial floodplain. Terminated at groundwater.
232	1	0-30	Shovel, Auger	brown	structureless	diffuse wavy	A	trace charcoal organics	no	no	Grassy field.
232	2	30-50	Shovel, Auger	grayish-brown	structureless	diffuse wavy	B	common charcoal groundwater mottled oxidized	no	no	
232	3	50-110	Shovel, Auger	grayish-brown	structureless	no horizon	B	trace charcoal groundwater mottled oxidized	no	no	Groundwater at 80 cm. Terminated at groundwater.
233	1	0-35	Shovel, Auger	brown	structureless	diffuse wavy	A	organics	no	no	Grassy field.
233	2	35-150	Shovel, Auger	grayish-brown	structureless	no horizon	C	groundwater mottled oxidized	no	no	Groundwater at 115 cm. Terminated at groundwater.
234	1	0-30	Shovel, Auger	brown	structureless	diffuse wavy	A	organics	no	no	Grassy field.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
234	2	30-135	Shovel, Auger	grayish-brown	structureless	no horizon	C	groundwater mottled oxidized	no	no	Alluvial floodplain. Terminated at groundwater.
235	1	0-30	Shovel, Auger	brown	structureless	diffuse wavy	A	trace charcoal organics	no	no	Grassy field.
235	2	30-80	Shovel, Auger	grayish-brown	structureless	diffuse wavy	B	trace charcoal groundwater mottled oxidized	no	no	Alluvial floodplain.
235	3	80-135	Shovel, Auger	gray	structureless	no horizon	B	groundwater	no	no	Gray alluvium. Groundwater at 115 cm. Terminated at groundwater.
236	1	0-40	Auger	grayish-brown	structureless	clear wavy	A	organics	no	no	Plow zone.
236	2	40-120	Shovel	gray	structureless	clear smooth	B	oxidized	no	no	Alluvial floodplain.
236	3	120-140	Auger	gray	structureless	no horizon	B	groundwater oxidized	no	no	Groundwater . Terminated at groundwater.
237	1	0-30	Shovel, Auger	brown	structureless	diffuse wavy	A	organics	no	no	Grassy field .
237	2	30-60	Shovel, Auger	grayish-brown	structureless	diffuse wavy	B	groundwater mottled oxidized	no	no	Alluvial floodplain.
237	3	60-120	Shovel, Auger	grayish-brown	structureless	no horizon	B	groundwater mottled oxidized	no	no	Alluvial floodplain. Terminated at groundwater.
238	1	0-50	Shovel	grayish-brown	subangular blocky no ped grade medium	diffuse smooth	A	organics	no	no	Alluvial floodplain.
238	2	50-85	Shovel	grayish-brown	subangular blocky moderate medium	no horizon	B	organics groundwater oxidized	no	no	Alluvial floodplain. Terminated at groundwater.
239	1	0-40	Shovel	light brown	structureless	clear smooth	A	trace charcoal	yes	no	Plow zone.
239	2	40-140	Shovel, Auger	grayish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvial floodplain.
239	3	149-160	Auger	light gray	structureless	clear smooth	C	groundwater reduced	no	no	Alluvial floodplain. Terminated at groundwater.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
240	1	0-47	Shovel	grayish-brown	subangular blocky weak medium	diffuse smooth	A	organics	yes	no	Plow zone, modern debris.
240	2	47-110	Shovel	grayish-brown	subangular blocky moderate medium	no horizon	B	organics groundwater mottled oxidized	no	no	Alluvial floodplain. Terminated at groundwater.
241	1	0-30	Shovel	light brown	structureless	clear smooth	A		no	no	Plow zone.
241	2	30-120	Shovel, Auger	grayish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvial floodplain.
241	3	120-130	Auger	gray	structureless	clear smooth	C	groundwater mottled reduced	no	no	Alluvial floodplain. Terminated at groundwater.
242	1	0-40	Shovel	light brown	structureless	clear smooth	A		no	no	Plow zone.
242	2	40-100	Shovel	grayish-brown	structureless	clear smooth	B	groundwater mottled oxidized	no	no	Alluvial floodplain. Terminated at groundwater.
243	1	0-40	Shovel	grayish-brown	subangular blocky weak medium	diffuse smooth	A	trace charcoal organics	no	no	Plow zone.
243	2	40-90	Shovel	grayish-brown	subangular blocky weak medium	diffuse smooth	B	trace charcoal organics mottled oxidized	no	no	
243	3	90-130	Shovel, Auger	gray	structureless	no horizon	C	groundwater mottled oxidized	no	no	Alluvial floodplain. Terminated at groundwater.
244	1	0-30	Shovel, Auger	brown	structureless	diffuse wavy	A	trace charcoal organics	no	no	Grassy field.
244	2	30-140	Shovel, Auger	grayish-brown	structureless	no horizon	B	groundwater mottled oxidized	no	no	Alluvial floodplain. Terminated at groundwater.
245	1	0-30	Shovel, Auger	brown	structureless	diffuse wavy	A	organics	yes	no	Grassy field. Modern debris.
245	2	30-70	Shovel, Auger	grayish-brown	structureless	diffuse wavy	B	groundwater mottled oxidized	no	no	Alluvial floodplain.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
245	3	70-150	Shovel, Auger	grayish-brown	structureless	no horizon	C	groundwater mottled oxidized	no	no	Alluvial floodplain. Terminated at groundwater.
246	1	0-35	Shovel, Auger	brown	structureless	diffuse wavy	A	trace charcoal organics	no	no	Grassy field.
246	2	35-60	Shovel, Auger	grayish-brown	structureless	diffuse wavy	B	groundwater mottled oxidized	no	no	Alluvial floodplain.
246	3	60-140	Shovel, Auger	grayish-brown	structureless	no horizon	B	groundwater mottled oxidized	no	no	Alluvial floodplain. Terminated at groundwater.
247	1	0-40	Shovel	grayish-brown	structureless	clear smooth	A	organics	no	no	Plow zone.
247	2	40-110	Shovel, Auger	gray	granular/crumb weak fine	clear smooth	B	organics oxidized	no	no	
247	3	110-140	Auger	light gray	structureless	no horizon	B	groundwater oxidized	no	no	Terminated at groundwater.
248	1	0-30	Shovel, Auger	brown	structureless	diffuse wavy	A	organics	no	no	Grassy field.
248	2	30-70	Shovel, Auger	grayish-brown	structureless	diffuse wavy	B	groundwater mottled oxidized	no	no	
248	3	70-140	Shovel, Auger	grayish-brown	structureless	no horizon	B	groundwater mottled oxidized	no	no	Terminated at groundwater.
249	1	0-30	Shovel	light brown	structureless	diffuse smooth	A	trace charcoal	no	no	Plow zone.
249	2	30-80	Shovel	grayish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvial floodplain.
249	3	80-90	Shovel	gray	structureless	clear smooth	C	reduced	no	no	Alluvial floodplain. Terminated at groundwater.
250	1	0-35	Shovel	grayish-brown	subangular blocky weak fine	diffuse smooth	A	trace charcoal organics	no	no	Disturbed horizons, sticky, rootlets.
250	2	35-90	Shovel	grayish-brown	subangular blocky moderate fine	no horizon	B	trace charcoal organics groundwater oxidized	no	no	Disturbed B horizon, ater table at 80 cmbs. Terminated at groundwater.
251	1	0-30	Shovel	light brown	structureless	clear smooth	A		no	no	Plow zone.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
251	2	30-130	Shovel, Auger	grayish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvial floodplain .
251	3	130-140	Auger	gray	structureless	clear smooth	B	groundwater reduced	no	no	Alluvial floodplain. Terminated at groundwater.
252	1	0-50	Shovel	grayish-brown	subangular blocky weak fine	diffuse smooth	A	organics	no	no	Disturbed, sticky, organic rich, plow zone.
252	2	50-87	Shovel	grayish-brown	subangular blocky moderate fine	no horizon	B	organics groundwater oxidized	no	no	Disturbed, sticky, water table at 80 cmbs. Terminated at groundwater.
253	1	0-30	Shovel	light brown	structureless	clear smooth	A		no	no	Plow zone.
253	2	30-80	Shovel	grayish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvial floodplain.
253	3	80-100	Shovel	gray	structureless	clear smooth	C	groundwater reduced	no	no	Alluvial floodplain. Terminated at groundwater.
254	1	0-30	Shovel, Auger	brown	structureless	diffuse wavy	A	common charcoal organics	no	no	Grassy field .
254	2	30-60	Shovel, Auger	grayish-brown	structureless	diffuse wavy	B	common charcoal groundwater mottled oxidized	no	no	Alluvial floodplain.
254	3	60-130	Shovel, Auger	grayish-brown	structureless	no horizon	B	groundwater mottled oxidized	no	no	Alluvial floodplain. Terminated at groundwater.
255	1	0-30	Shovel, Auger	brown	structureless	diffuse wavy	A	trace charcoal organics	no	no	Grassy field.
255	2	30-110	Shovel, Auger	grayish-brown	structureless	no horizon	B	groundwater mottled oxidized	no	no	Alluvial floodplain. Terminated at groundwater.
256	1	0-50	Shovel	grayish-brown	structureless	diffuse wavy	A	organics	no	no	Plow zone.
256	2	50-85	Shovel	gray	granular/crumb moderate medium	diffuse wavy	B	oxidized	no	no	
256	3	85-90	Shovel	dark gray	structureless	no horizon	B	groundwater	no	no	Terminated at groundwater.
257	1	0-30	Shovel	light brown	structureless	clear smooth	A		no	no	Plow zone.
257	2	30-100	Shovel	dark gray	structureless	clear smooth	B	groundwater reduced	no	no	Alluvial floodplain. Terminated at groundwater.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
258	1	0-40	Shovel	grayish-brown	granular/crumb weak fine	clear irregular	A	organics	no	no	
258	1	40-80	Shovel	gray	structureless	clear wavy	B	oxidized	no	no	
258	3	80-130	Auger	gray	structureless	no horizon	B	groundwater oxidized	no	no	Terminated at groundwater.
259	1	0-30	Shovel	grayish-brown	subangular blocky weak fine	diffuse smooth	A	organics	no	no	Disturbed, sticky, plow zone.
259	2	30-95	Shovel, Auger	grayish-brown	subangular blocky strong fine	clear smooth	B	organics oxidized	no	no	Alluvial floodplain.
259	3	95-108	Auger	dark gray	structureless	no horizon	B	groundwater	no	no	Alluvial floodplain. Terminated at groundwater.
260	1	0-30	Shovel, Auger	brown	structureless	no horizon	A	trace charcoal organics	yes	no	Grassy field. Modern debris w.
260	2	30-90	Shovel, Auger	grayish-brown	structureless	diffuse wavy	B	groundwater mottled oxidized	no	no	
260	3	90-130	Shovel, Auger	light gray	structureless	no horizon	C	groundwater mottled oxidized	no	no	Disturbed alluvium. Terminated at groundwater.
261	1	0-30	Shovel	grayish-brown	subangular blocky moderate fine	diffuse smooth	A	organics	yes	no	Plow zone, modern debris.
261	2	30-95	Shovel, Auger	grayish-brown	subangular blocky moderate medium	clear smooth	B	organics oxidized	no	no	Auger at 85 cmbs.
261	3	95-105	Auger	dark gray	structureless	no horizon	C	groundwater	no	no	Alluvial sand, water table at 100 cmbs. Terminated at groundwater.
262	1	0-30	Shovel	grayish-brown	subangular blocky weak fine	diffuse smooth	A	trace charcoal organics	no	no	Disturbed, plow zone, sticky.
262	2	30-94	Shovel	grayish-brown	subangular blocky moderate fine	no horizon	B	trace charcoal organics groundwater oxidized	no	no	Water table at 85 cmbs. Terminated at groundwater.
263	1	0-30	Shovel	grayish-brown	subangular blocky weak fine	diffuse smooth	A	trace charcoal organics	yes	no	Modern debris, disturbed.
263	2	30-85	Shovel	grayish-brown	subangular blocky moderate fine	no horizon	B	organics groundwater oxidized	no	no	Water table at 80 cmbs. Terminated at groundwater.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
264	1	0-30	Shovel	light brown	structureless	diffuse smooth	A	trace charcoal	yes	no	Plow zone.
264	2	30-130	Shovel, Auger	grayish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvial floodplain.
264	3	130-150	Auger	light gray	structureless	clear smooth	C	groundwater	no	no	Alluvial floodplain. Terminated at groundwater.
265	1	0-25	Shovel, Auger	brown	structureless	diffuse wavy	A	trace charcoal organics	no	no	Grassy field.
265	2	25-100	Shovel, Auger	grayish-brown	structureless	diffuse wavy	B	trace charcoal groundwater mottled oxidized	no	no	Alluvial floodplain.
265	3	100-135	Shovel, Auger	grayish-brown	structureless	no horizon	B	groundwater mottled oxidized	no	no	Groundwater at 125 cm. Terminated at groundwater.
266	1	0-30	Shovel	light brown	structureless	diffuse smooth	A	trace charcoal	no	no	Plow zone.
266	2	30-130	Shovel, Auger	grayish-brown	structureless	clear smooth	B	mottled oxidized	no	no	Alluvial floodplain.
266	3	130-150	Auger	gray	structureless	clear smooth	C	groundwater reduced	no	no	Alluvial floodplain. Terminated at groundwater.
267	1	0-25	Shovel, Auger	brown	structureless	diffuse wavy	A	trace charcoal organics	no	no	Grassy field .
267	2	25-85	Shovel, Auger	grayish-brown	structureless	clear wavy	B	trace charcoal groundwater mottled oxidized	no	no	Alluvial floodplain.
267	3	85-125	Shovel, Auger	grayish-brown	structureless	no horizon	B	groundwater mottled oxidized	no	no	Alluvial floodplain. Terminated at groundwater.
268	1	0-25	Shovel, Auger	brown	structureless	diffuse wavy	A	organics	no	no	Grassy field .
268	2	25-80	Shovel, Auger	grayish-brown	structureless	diffuse wavy	B	groundwater mottled oxidized	no	no	Alluvial floodplain.
268	3	80-140	Shovel, Auger	reddish-brown	structureless	diffuse wavy	B	groundwater mottled oxidized	no	no	Alluvial floodplain.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
268	4	140-155	Shovel, Auger	grayish-brown	structureless	no horizon	C	groundwater oxidized	no	no	Alluvial floodplain. Terminated at groundwater.
269	1	0-40	Shovel	light brown	structureless	diffuse smooth	A	trace charcoal	no	no	Plow zone.
269	2	40-90	Shovel	light brown	structureless	clear smooth	B	trace charcoal mottled	no	no	Plow zone.
269	3	90-140	Shovel, Auger	gray	structureless	clear smooth	C	groundwater reduced	no	no	Alluvial floodplain. Terminated at groundwater.
270	1	0-20	Shovel, Auger	brown	structureless	diffuse wavy	A	trace charcoal organics	no	no	Grassy field.
270	2	20-100	Shovel, Auger	grayish-brown	structureless	diffuse wavy	B	groundwater mottled oxidized	no	no	Alluvial floodplain.
270	3	100-200	Shovel, Auger	grayish-brown	structureless	no horizon	B	groundwater mottled oxidized	no	no	Alluvial floodplain. Terminated at desired depth.
271	1	0-40	Shovel	light brown	structureless	diffuse smooth	A		no	no	Plow zone.
271	2	40-50	Shovel	gray	structureless	clear smooth	B	reduced	no	no	Pocket of coarse gray sand.
271	3	50-160	Shovel, Auger	grayish-brown	structureless	clear smooth	B	mottled oxidized reduced	no	no	
271	4	160-200	Auger	gray	structureless	clear smooth	C	groundwater reduced	no	no	Alluvial floodplain. Terminated at desired depth.
272	1	0-35	Shovel	grayish-brown	structureless	clear wavy	A	organics	yes	no	Rodent burrow.
272	2	35-120	Shovel, Auger	gray	granular/crumb moderate medium	clear wavy	B	trace charcoal oxidized	no	no	Alluvial floodplain.
272	3	120-150	Auger	gray	structureless	no horizon	B	groundwater oxidized	no	no	Terminated at groundwater.
273	1	0-60	Auger	grayish-brown	granular/crumb weak fine	clear wavy	A	organics mottled	yes	no	
273	2	60-110	Shovel	grayish-brown	granular/crumb weak fine	clear wavy	B	oxidized	no	no	
273	3	110-140	Auger	gray	structureless	no horizon	B	groundwater oxidized	no	no	Terminated at groundwater.
274	1	0-30	Shovel	grayish-brown	subangular blocky moderate medium	clear smooth	A	organics mottled	no	no	
274	2	30-12	Shovel	grayish-brown	subangular blocky moderate medium	clear smooth	B	groundwater mottled	yes	no	
274	3	120-170	Auger	grayish-brown	structureless	clear wavy	B	groundwater mottled oxidized	no	no	Terminated at groundwater.

HOLE	LAYER	DEPTH (cm)	TOOL	COLOR	PEDS	BOTTOM BOUNDARY	SOIL HORIZON	SPECIAL FEATURES	MODERN DEBRIS	CULTURAL	COMMENTS
275	1	0-30	Shovel	brown	subangular blocky moderate coarse	abrupt smooth	A		yes	no	Modern debris.
275	2	30-120	Shovel, Auger	grayish-brown	granular/crumb weak fine	diffuse irregular	B	oxidized	yes	no	Modern debris at upper bundry
275	3	120-150	Auger	reddish-brown	structureless	clear wavy	B	groundwater mottled oxidized	no	no	Terminated at groundwater.

Appendix D

Inadvertent Discovery Plan

Final

FREEMAN LOGISTICS DEVELOPMENT PROJECT, PIERCE COUNTY, WASHINGTON

Cultural Resources Inadvertent Discovery Plan

Prepared for
Vector Development LLC

May 2022



Final

FREEMAN LOGISTICS DEVELOPMENT

Cultural Resources Inadvertent Discovery Plan

Prepared for
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1. INTRODUCTION

This Inadvertent Discovery Plan (IDP) has been prepared at the request of the Washington State Department of Archaeology and Historic Preservation (DAHP). It was developed for use during ground-disturbing construction for the Freeman Logistics Development Project (Project) in Pierce County, Washington. The Project is located near the City of Puyallup, approximately a quarter mile north of the Puyallup River, in Sections 17 and 20 of Township 20 North, Range 4 East on the Puyallup 7.5' series topographic map (Figure 1, Figure 2).

This IDP has been developed for use by Vector Development Group (Vector) during ground-disturbing construction for the Project. The IDP establishes protocols to be implemented if archaeological resources are inadvertently discovered during ground-disturbing construction associated with the Project.

This IDP provides a generalized approach to identifying, protecting, and resolving inadvertent discoveries of cultural resources that may be eligible for inclusion in the National Register of Historic Places (NRHP). It serves as the plan for responding to any inadvertent discoveries of buried archaeological resources (Section 6) and human remains (Section 8). This plan provides guidance to the Vector Project Manager to:

- Comply with applicable state laws and regulations.
- Provide direction and communication protocols to project personnel, the Project Manager, DAHP, and affected Tribes, as needed, should an inadvertent discovery occur.

Implementing the terms of this IDP is the responsibility of the Vector Project Manager.

2. REGULATORY ENVIRONMENT

Some development projects within the State of Washington are subject to Chapter 43.21C of the Revised Code of Washington (RCW) – the State Environmental Policy Act (SEPA). SEPA requires that Historic and Cultural Preservation be considered as part of the environmental review process. The local authority administering this SEPA action is the City of Puyallup (City). The City oversees/reviews cultural resources within its jurisdiction in cooperation with the DAHP.

Additional laws that apply to archaeological projects conducted within the State of Washington include: Archaeological Sites and Resources (RCW 27.53), Indian Graves and Records (RCW 27.44), Human Remains (RCW 68.50), and Abandoned and Historic Cemeteries and Historic Graves (RCW 68.60).

3. PROJECT LOCATION

The Project Area is approximately 20.8 acres and is currently split between single-family residential and agricultural use. Project construction will occur across the entire Project Area. Following demolition of existing buildings and structures, the Project Area will be graded. General surface grading for buildings and parking lots will typically require less than 1 meter (3.3 feet) of excavation, although, in some cases, building foundations and utilities may extend up to 2 meters (6.6 feet) below surface (bs). It is located on Pierce County tax parcel numbers 0420174075, 0420201039, 0420201066, 0420201034, 0420201052, 0420201045, 0420201040, 0420205016, 0420201042, 0420201027, 0420201101, 0420205017, and 0420205003.

4. PROJECT DESCRIPTION

The Project Area is currently used for residential and agricultural purposes. As a part of Project construction, the existing structures within the Project Area will be demolished. The Project will result in the construction of two new warehouse structures, Building A (approximately 330,000 square feet) and Building B (102,000 square feet). In addition to the two buildings, the facility will include 202 parking spaces. The Project Area will be graded across its extent and supporting infrastructure, such as revisions to the existing roadways, and utilities will be constructed.

5. CULTURAL RESOURCES IN PROJECT AREA

A background literature review and cultural resources assessment, including updated background research and both surface and subsurface archaeological survey, was conducted across the Project Area (Berger 2020; Ostrander et al. 2022). No cultural or historic resources were identified during the background review and cultural resources assessment.

6. INADVERTENT DISCOVERY OF POTENTIAL CULTURAL RESOURCES

If any human remains are discovered, all work will immediately cease. See Section 8.

6.1 Resources Not Requiring DAHP Documentation

The following materials are presumed not significant and would not require recording:

- Isolated (single) cans or bottles
- Materials less than 50 years old
- Abandoned utilities

6.2 Resources Requiring DAHP Documentation

The following materials that are older than 50 years, if encountered, are presumed to require recording. These are broadly divided into two categories. The first category includes cultural resources associated with the precontact-era, and the second category includes cultural resources associated with the historic-era.

- Precontact-era cultural resources may include, but are not limited to:
 - Stone tools and flaking debris.
 - Concentrations of shell or non-sawed bone fragments.
 - Charcoal concentrations and darkened earth.
 - Fire-modified rock or unaltered cached rock piles.
 - Wooden posts (house posts, food drying racks).
 - Basketry or fiber objects (cedar twine ropes, woven mats, cedar twine fishing nets).
- Historic-era cultural resources may include, but are not limited to:
 - Low-fired and bisque ceramics with subdued colors, or blue/pink willow-like design; thick-bodied pieces, indicating crockery.
 - Non-tempered glass, violet-colored glass, stopper-topped glass jars or bottles, press-capped (cork gasket liner) heavy-walled soda bottles (not twist-top, thin-walled), zinc and vitreous glass-lidded glass canning jars with colored body.
 - Miscellaneous fragments of metal (or plated) clothing closures (buttons, hooks, eyes, and suspender fittings).
 - Sawed animal bone.
 - Bakelite, celluloid, glass, and shell buttons (but no nylon or polystyrene).
 - Enameled ironware.
 - Punch-opened and solder-sealed beverage cans, solder-sealed food tins, general lack of thin-walled aluminum and welded steel cans.
 - Rock-picker piles collected by farmers and agricultural equipment or implements.
 - Older automotive parts.
 - Knob-and-tube electrical insulators.
 - Residential structural remains, such as historic building foundations or privies.

7. PROCEDURES FOR NOTIFICATION

Prior to beginning construction, the contractor shall review this IDP.

If human remains are observed, the contractor will follow the procedures detailed in Section 8. If potentially significant cultural resources are observed (see Section 6.2), the contractor will temporarily suspend further ground disturbance and immediately contact the Project Archaeologist (see Section 10). The contractor will provide the Project Archaeologist with photographs and descriptions.

Based on the provided information, the Project Archaeologist will recommend that the following notification procedure be followed:

1. The discovery is less than 50 years old, and, therefore, is non-archaeological. In this case, the contractor shall be allowed to continue work without restriction.
2. The discovery is older than 50 years, but no additional documentation is feasible at the time (for example, in a deep boring). In this case, the Project Manager shall ensure that clear photos are taken of any artifacts or features, and that cultural materials are reburied. The Project Manager shall provide copies of notes and photos to the Project Archaeologist. The DAHP shall confirm that the Project Archaeologist's determination and approach are acceptable before the contractor resumes ground disturbance.
3. The discovery is older than 50 years and additional documentation is needed (for example, in an open pit). In this case, the Project Manager shall protect the discovery location until the Project Archaeologist is able to conduct an on-site investigation. The purpose of the on-site investigation shall be to collect information needed communicate and coordinate with regulatory agencies.

8. INADVERTENT DISCOVERY OF HUMAN REMAINS

If any human remains are inadvertently discovered, all work adjacent to the discovery shall cease immediately. A 50-foot work stoppage area shall be established around the discovery. Vehicles, equipment, and unauthorized personnel shall not be permitted to traverse or enter the discovery site.

The Project Manager will be notified by the contractor or subcontractor responsible for the discovery without delay. If the Project Manager is unsure if the material is human remains, they will contact the Project Archaeologist. Once the discovery is confirmed as human remains, or is suspected as such by the Project Archaeologist, the Project Manager will then notify the Pierce County Medical Examiner and local law enforcement via the non-emergency telephone number without delay. Personnel making the discovery shall not leave the discovery unattended prior to the arrival of local law enforcement or county medical examiner/coroner.

The following text is the DAHP's preferred language regarding the inadvertent discovery of human skeletal remains to be used in the development of inadvertent discovery protocols (DAHP 2021):

If ground disturbing activities encounter human skeletal remains during the course of construction, then all activity will cease that may cause further disturbance to those remains. The area of the find will be secured and protected from further disturbance until the State provides notice to proceed. 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 of whether those remains are forensic or non-forensic. If the county medical examiner/coroner determines the remains are non-forensic, then they will report that finding to the DAHP who will then take jurisdiction over the remains. The DAHP will notify any appropriate cemeteries and all affected tribes of the find. The State Physical Anthropologist will make a determination of whether the remains are Indian or Non-Indian and report that finding to any appropriate cemeteries and the affected tribes. The DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

9. REFERENCES

Berger, M.

- 2020 *Cultural Resources Overview for the Freeman Road Logistics Project, Puyallup, Pierce County, Washington*. Cultural Resource Consultants LLC, Technical Memo 2011H-1. December 7, 2020.

Department of Archaeology and Historic Preservation (DAHP)

- 2021 Recommended Inadvertent Human Remains Discovery Language. Electronic document, <https://dahp.wa.gov/archaeology/human-remains/recommended-inadvertent-human-remains-discovery-language>, accessed October 11, 2021.

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- 2022 *Cultural Resources Assessment Report for the Freeman Logistics Development Project*. Prepared by Environmental Science Associates for Vector Development Group. On File, Washington State Department of Archaeology and Historic Preservation, Olympia, Washington.

10.CONTACT INFORMATION

The Vector Project Manager will finalize this section prior to the start of construction.

Project Archaeologist

Tom Ostrander, Archaeologist
Environmental Science Associates (ESA)
Office: 206-789-9658
Cell: 206 -909-6631

Vector Project Manager

NAME
CLIENT/PROPONENT
Office: xxx-xxx-xxxx
Cell: xxx-xxx-xxxx

Pierce County Medical Examiner

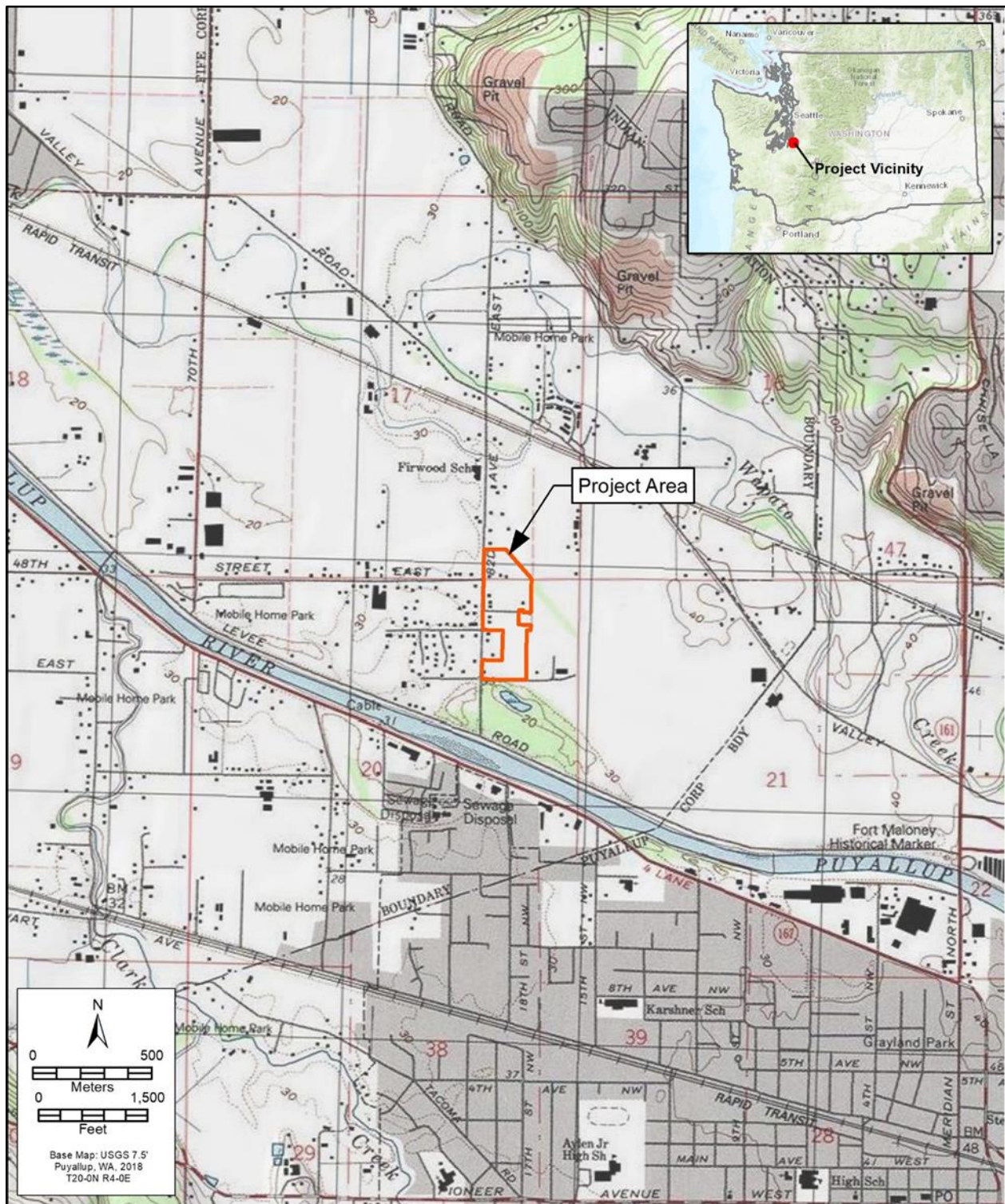
Office: (253) 798-6494

Pierce County Sherriff (non-emergency number)

Office: (253) 798-3278

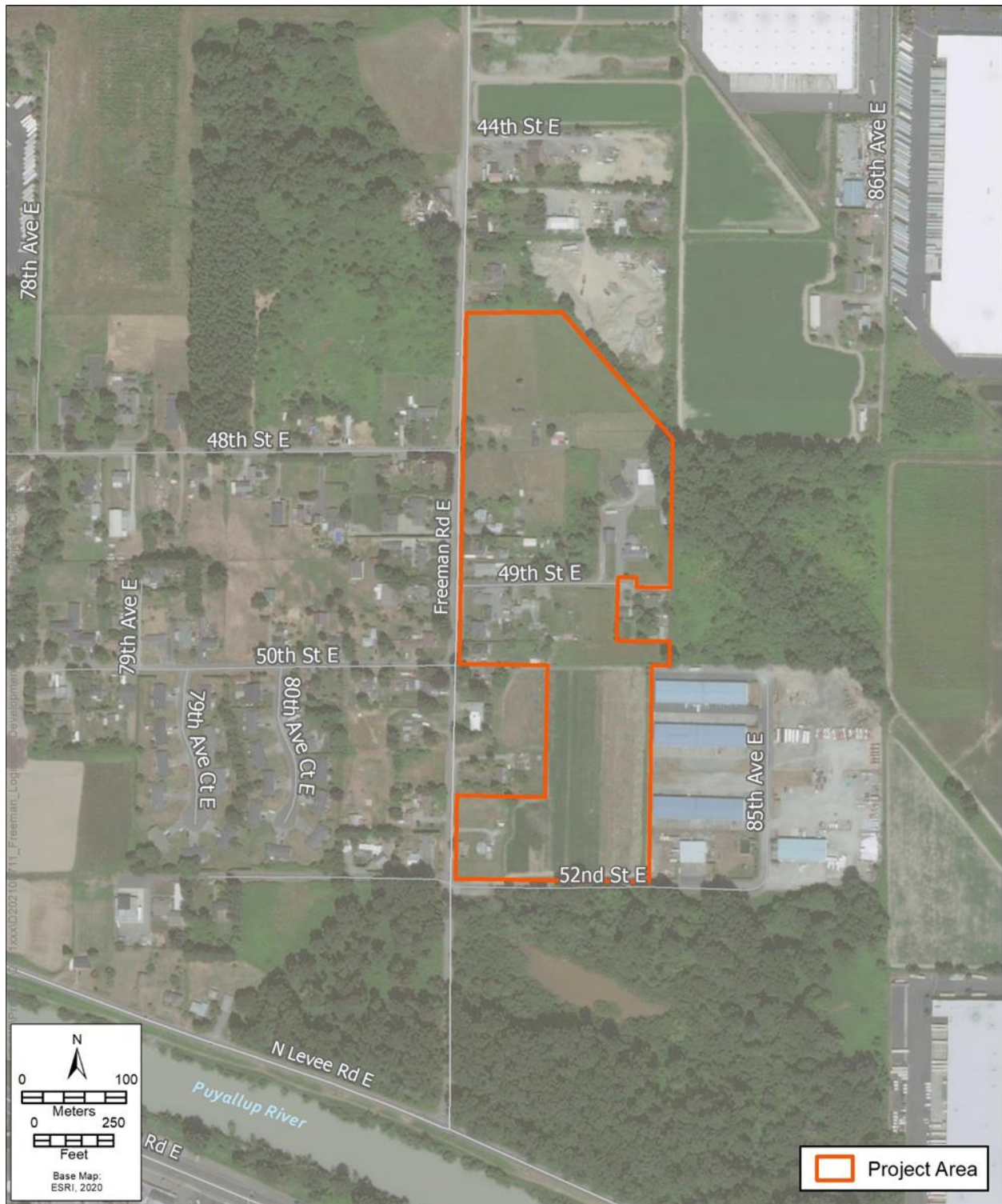
Contractor (TBD)

NAME, TITLE
COMPANY
Office: xxx-xxx-xxxx
Cell: xxx-xxx-xxxx



Prepared by ESA

Figure 1
Location of the Freeman Logistics Development Project



Prepared by ESA

Figure 2
Aerial View of the Project Area