CULTURAL RESOURCES REPORT COVER SHEET

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Title of Report: Cultural Resource Survey for the Port of Kalama Central Port Stormwater Pond Project, Cowlitz County, Washington

Date of Report: May 27, 2016

County: Cowlitz Section: 7 Township: 6 North Range: 2 West

Quad: *Kalama, WA-OR*, 7.5-minute, 1990

Acres: 3.7

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 #:

CULTURAL RESOURCE SURVEY FOR THE PORT OF KALAMA CENTRAL PORT STORMWATER POND PROJECT, COWLITZ COUNTY, WASHINGTON

Prepared for
Port of Kalama
Kalama, Washington

May 27, 2016

REPORT NO. 3652

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CULTURAL RESOURCE SURVEY FOR THE PORT OF KALAMA CENTRAL PORT STORMWATER POND PROJECT, COWLITZ COUNTY, WASHINGTON

PROJECT: Proposed construction of a stormwater pond

TYPE: Cultural resource survey

LOCATION: Section 7, Township 6 North, Range 2 West, Willamette Meridian

USGS QUADS: *Kalama, WA-OR,* 7.5-minute, 1990

COUNTY: Cowlitz

PROJECT AREA: 3.7 acres

AREA SURVEYED: 3.7 acres

FINDINGS: Archaeological Resources:

- No archaeological resources were present within the project area.

Historic Resources:

- No historic-period buildings or structures were present within the project area.

PREPARERS: Louis W. Fortin, Ph.D., R.P.A., and Eva L. Hulse, Ph.D., R.P.A.

INTRODUCTION

Archaeological Investigations Northwest, Inc. (AINW), conducted a cultural resource survey, including geoarchaeological test excavations, for the Port of Kalama (Port) Central Port Stormwater project in Cowlitz County, Washington. The proposed project includes the construction of a stormwater pond and infiltration system. Ground disturbance will not exceed a depth of 1.8 meters (m) (6.0 feet [ft]), and the staging of machinery and equipment will take place within the confines of the project area. The project area is located in Section 7 of Township 6 North, Range 2 West, Willamette Meridian (Figure 1). It consists of a graveled lot northwest of the Emerald Kalama Chemical warehouse at 1253 N 3rd Street, within the Port's Central Port area. This lot lies across two parcels owned by the Port: the northern part of parcel 41029 and the western part of parcel 41118.

The project is subject to Washington State Department of Archaeology and Historic Preservation (DAHP) review under the State Environmental Policy Act (SEPA), as well as the guidelines provided in Cowlitz County's Shoreline Management Master Program (Cowlitz-Wahkiakum Regional Planning Commission 1977). The project may also require a permit from the U.S. Army Corps of Engineers (USACE), making it subject to review under Section 106 of the National Historic Preservation Act of 1966. The work was completed by AINW staff meeting the professional qualification standards of the Secretary of the Interior's Standards and

Guidelines for Archaeology and Historic Preservation. The study was performed to meet the standards of the DAHP.

The project area was surveyed for cultural resources by AINW and geoarchaeological test excavations were conducted on May 11, 2016. The geoarchaeological test excavations were excavated to a minimum depth of 3.0 m (10 ft) in order to identify the boundary between fill and native soil. This depth exceeds the proposed excavation depth for the stormwater pond. During the monitoring, native soil or sediment was not encountered in two of the seven test pits; in the remaining five test pits, it was encountered at a depth of approximately 3 m (10 ft) below the surface. Both the pedestrian survey and subsurface monitoring revealed no historic or prehistoric archaeological resources. If construction excavation does not exceed a depth 3 m (10 ft) below the surface, no archaeological resources will be encountered during the stormwater pond's construction. Therefore, AINW recommends no additional archaeological work, and no additional monitoring during the construction of the stormwater pond and infiltration system.

ENVIRONMENTAL SETTING

The project area is located approximately 1.8 kilometers (km) (1.1 miles [mi]) southeast of the Columbia River confluence with the Kalama River (Figure 1). The northern extent of Sandy Island is located 0.8 km (0.5 mi) west by southwest of the project area. The southern extent of Cottonwood Island and Carrolls Channel are located approximately 4.1 km (2.6 mi) north.

The project area is within the Puget Trough physiographic province, which ranges from Washington's border with Canada to the north to the border with Oregon to the south (Franklin and Dyrness 1973:16). The Willapa Hills and the Cascade Range respectively mark the western and eastern boundaries of the southern half of the province. The Puget Trough province is generally composed of Tertiary rock formations and Eocene basalt flows (Franklin and Dyrness 1973:17). Surface sediments in the current project area are composed of Quaternary-age alluvium as well as dune sand, loess, and artificial fill (Phillips 1987; Washington State Department of Natural Resources [WSDNR] 2013). The bedrock of the surrounding area that borders the project to the east is composed of Eocene-age andesite flows known as the Goble Volcanics (Orr and Orr 1996:321; Phillips 1987; WSDNR 2013), in addition to oceanic basalts containing zeolite minerals (Alt and Hyndman 1994:236).

The project is 3.5 km (2.2 mi) south of an area known as Kalama Gap, which is formed by the narrowing of the Columbia River floodplain by Carrolls Bluff and the hills of northeastern Columbia County near Rainier, Oregon. Kalama Gap played a role in shaping the landscape of the region as it was a major constriction of the Columbia River drainage during the late Pleistocene Missoula Floods (Allen et al. 2009:160). The floods were caused when glacial Lake Missoula repeatedly breached its ice dam, sending catastrophic floodwaters across the Channeled Scabland and down the Columbia River valley to the Pacific Ocean between 19,000 and 13,000 years before present (B.P.) (Benito and O'Connor 2003:624, 637). Kalama Gap temporarily impeded the flow of the floodwaters, causing ponding behind the narrowed flow channels and forcing water to backflood into the Willamette Valley as far south as Eugene, Oregon (Minervini et al. 2003). The project area currently lies at about 8.2 m (27 ft) above sea level (asl). The water during the Missoula flood events reached at least 122 m (400 ft) asl, completely inundating the area (Allen et al. 2009:182).

The project area lies within the *Tsuga heterophylla* vegetation zone, which is characterized by Douglas-fir, western hemlock, and western redcedar trees. Riparian flora

such as grasses, cottonwood, and willow are common along lakes and creeks in the area (Franklin and Dyrness 1973:72). The vegetation in the current project area includes some sporadic populations of scrub-shrub and weedy herbaceous plants. There are numerous streams, inlets, channels, and a larger slough to the north of the proposed project. Some of the streams or channels have been artificially created or enhanced.

In general, the soils for this area consist of river alluvium, silty clay loams, and loamy fine sand (U.S. Department of Agriculture, Natural Resources Conservation Service 2006). The project area consists of one soil type; Pilchuck loamy fine sand. Pilchuck soils are excessively to somewhat excessively drained and are formed in a gravelly and sandy alluvium. They are found on flood plains and have slopes ranging from 0% to 8%. These soils are covered by more than 750,000 cubic yards of dredge material from the Columbia River.

CULTURAL SETTING

The project area is within the Northwest Coast culture area, which extends along the Pacific Ocean from southwest Alaska to northern California. More specifically, the project is within the southern coast sub-area, which includes areas south of Vancouver Island (Ames and Maschner 1999:16, 19).

Pre-contact

The earliest prehistoric populations in the southern Northwest Coast have been documented based on rare finds of fluted projectile points (Avey n.d.; LeTourneau 2010; Meltzer and Dunnell 1987:64; Osborne 1956). The nearest to the project area were two fluted "Clovis" points found separately, west of Olympia, approximately 105 km (65 mi) north of the project area (Osborne 1956:41, 42). Evidence of Clovis technologies throughout North America has been tightly dated to between 11,050 and 10,800 radiocarbon years B.P. (Waters and Stafford 2007). A growing body of evidence demonstrates that pre-Clovis cultures were established in the West as well (Jenkins et al. 2012; Waters et al. 2011). The time period encompassing Clovis cultures in the Northwest Coast area is typically referred to as the Paleoindian Period.

Paleoindian and subsequent Archaic Period archaeological sites are rare in this region, and some speculate that sites of this age may be buried under deep Holocene sediments (Aikens 1993:190; Ames and Maschner 1999:67). Identified sites dating to these periods tend to be at elevations above the river floodplains (Pettigrew 1990:519-520). During the Archaic Period (12,450 to 6350 B.P.), there is evidence of increased specialization and sedentism in the form of winter villages and diverse stone tool assemblages.

Archaeological sites dating to the Archaic Period in this region include Gee Creek, Layser Cave, and Judd Peak Rockshelters. Numerous sites have been identified along Gee Creek in northwestern Clark County. One of the sites along Gee Creek, site 45CL632 approximately 33 km (20 mi) southeast of the project area, included numerous hearths, fire pits, and earth ovens dating to the Archaic Period (Punke et al. 2009). Rich deposits of faunal remains and stone tools were identified at Layser Cave (45LE223) and Judd Peak Rockshelters (45LE222), both located near the Cowlitz River approximately 90 km (56 mi) northeast of the current project area (Daugherty et al. 1987a, 1987b; Evans 2009; McClure 1986).

The Pacific Period dates from 6350 B.P. to historic-period times and reflects important social, economic, and subsistence changes including population growth, storage-based economies, heavy reliance on salmon fishing, and increased social stratification (Ames and

Maschner 1999). The nearest site of this period to the project area is the Trojan Site (35CO1), located approximately 1.4 km (0.9 mi) to the west on the west side of the Columbia River. Many artifacts and human remains were identified at the site, which was extensively excavated between 1968 and 1970. The artifacts included pestles, bowls, pipes, drills, awls, abraders, net weights, bone tools, projectile points, and cobble tools. The artifacts found suggest that the site was a residential site where fishing and hunting activities took place (Burtchard 1989:15; Warner and Warner 1975). Other well-documented Pacific Period sites in the region include site 45CL631 at Gee Creek and 45CL1 (Cathlapotle) on Lake River to the south; and 45LE172 on the Newaukum River, 45LE521 on Berwick Creek, and 45LE611 on the Chehalis River to the north (Ames et al. 1999; Foutch et al. 2012; Jermann 1980; Ozbun et al. 2008; Punke et al. 2009).

Native Peoples

The project area is located within lands historically occupied by both Salishan and Chinookan-speaking peoples. Southwestern Coast Salish comprises at least four languages, the southernmost of which is Cowlitz, spoken by people occupying the Lower Cowlitz River valley (Hajda 1990:503-505). Chinookan languages were spoken by peoples of the Lower Columbia River and consist of two main language branches, one of which (Upper Chinookan) is further divided into three dialects (Silverstein 1990:533). The current project area near Kalama is located within in an area likely utilized by people who spoke the Cowlitz language as well as the Chinookan Cathlamet and Multnomah dialects. Historical conflict, trading, and personal relationships between Cowlitz and Chinookan-speaking peoples have been documented (Boyd 2011:82; Hajda 1990:505; Silverstein 1990:534).

Ethnographic information indicates that the peoples of the Lower Columbia region lived in large villages that consisted of one or more plankhouses. Subsistence was based on seasonal availability and included seasonal runs of salmon, sturgeon, eulachon, and resident freshwater fish such as minnow and suckers. Birds, aquatic mammals, and terrestrial mammals (primarily deer and elk) were also part of the subsistence for peoples living in the Lower Columbia region. Plant foods were also seasonal and included berries, nuts, and roots and tubers such as wapato and camas (French and French 1998). Many resources were found along rivers, while others were available in the interior at upstream locations (Boyd and Hajda 1987). The Cowlitz harvested camas to trade with neighboring groups occupying areas where camas was less abundant (Hajda 1990:507). People moved to temporary camps or villages at hunting, fishing, and gathering locations based upon seasonal availability of resources, while maintaining permanent winter villages (Silverstein 1990).

One or two ethnographically documented villages were located where the Kalama River flows into the Columbia River, approximately 1.8 km (1.1 mi) northwest of the current project area. According to Silverstein (1990) and Hajda (1984), these villages were occupied by Chinookan-speaking peoples of the Cathlamet dialect. Hajda (1984:111-112) postulates that there was one main village at this location which may have been called “Callamak,” “Wakalama,” or “Cathlahaws” that had as many as nine houses. Silverstein (1990:534, 545) maps two villages at this location, one called “Tlakalama” or “Klakalama” and the other “Cath la haws.” The word “kalama” means “those of the rock” (Silverstein 1990:545).

The Chinook and Cowlitz ways of life were dramatically altered by diseases that preceded the arrival of Euroamericans to the area. Successive epidemics of smallpox, measles, malaria, and dysentery that spread upriver from the first contacts with Europeans and Euroamericans along the Pacific Coast in the late 1700s and early 1800s resulted in a demographic collapse (Boyd 1985; Silverstein 1990). Many surviving Cowlitz and Chinookan-speaking peoples relocated to reservations at Yakama, Warm Springs, and Grand Ronde after

treaties were negotiated in 1855, although not all families chose to relocate (French and French 1998:360).

Historic Background

Early explorers had visited the Kalama region by 1792 when William Broughton, part of the Vancouver Expedition, sailed the Columbia River between the Pacific Ocean and the west end of the Columbia River Gorge at the mouth of the Sandy River (Lamb 1984:112). Broughton named Coffin Rock (opposite side of the river from the project area) during his visit because he saw human remains in Native American canoes at this location (Moulton 1990:29; Urrutia 1998:19). The Lewis and Clark Expedition passed the project area on their way to the Pacific Ocean on November 6, 1805. William Clark writes that they passed "a long narrow Island," which may be Cottonwood Island (Moulton 1990:26), and "a high clift [*sic*] of Black rocks," which may be Carrolls Bluff (Moulton 1990:27).

Euroamericans began settling in the vicinity of Kalama in the mid-1800s (General Land Office [GLO] 1857a). Nineteenth-century maps depict the project area and the surrounding vicinity as Hensill's or Hensils Lake owned by Smith M. Hensill (GLO 1857a, 1863). To the south of the project area is a town labelled Davenport at the modern-day location of Kalama. The hills and drainages east of the Columbia River were labeled "Broken and Mountainous Unfit for Settlement or Cultivation" (GLO 1857b). Cottonwood Island was named such by 1857, likely due to the tree type common on the island (GLO 1857b). In addition to the Native etymology of the placename "Kalama," there is a local tradition linking the name to John Kalama, a Hawaiian who was stationed in the area by the Hudson's Bay Company in the 1830s (U.S. National Park Service 2009).

The first settlers in the vicinity of the project area were the Hensill, Rockey, Davenport, and Dray families who were granted land under the Donation Land Claim (DLC) Act of 1850. This act entitled many settlers within Oregon Territory (which at the time included present-day Washington State) to claim up to 640 acres of land (Bergquist 1957:28). Joseph and Calvin Dray were issued 97.83 acres in 1863 under DLC Nos. 40 and 41; James Rockey received 321.8 acres under DLC No. 38; J. Davenport received 160 acres under DLC No. 43; and Smith M. Hensill received 534.55 acres under DLC No. 39 (Bureau of Land Management 1871). Hensill's property encompasses the entire project area including the northern half of Section 7 of Township 6 North, Range 1 West.

Northern Pacific built the first railroad on the Washington side of the Columbia River in the 1870s (Asay 1991). The company's decision to build its headquarters at Kalama initiated the larger settlement and development there (Urrutia 1998:93). The railroad was completed between Kalama and Tacoma by 1873. Kalama became the company's western headquarters for its transcontinental railroad at that time (*Railway* 1999). Burlington Northern Santa Fe Railway operates the current railroad after Northern Pacific's merger with four other railroad companies in 1970 (*Railway* 1999).

The area afforded high quality resources for logging and mill industries which would dominate this region throughout the twentieth century. The Monticello Convention, which created Washington Territory, was held in Cowlitz County in 1852. Kalama was the Cowlitz County seat between 1906 and 1922 (Urrutia 1998:137-138).

The Port was organized in 1920 and initially consisted of 600 acres on the east side of the Columbia River (Urrutia 1998:157). A 1951 aerial photo shows the project area as an undeveloped, sparsely-wooded pastureland to the north of the Central Port industrial area (USGS 1951). The mid-summer riverbank appears to have lain about 60 m (197 ft) west of

where it is today, placing the entire project area on pastureland. Hensils Lake was no longer present.

The Pacific Highway was completed in 1923, and by 1960, Interstate 5 followed a similar route as a result of the Federal-Aid Highway Act of 1956. The USACE began dredging the Columbia River to improve navigation when the Rivers and Harbors Act of 1962 was passed. Dredge deposits were placed on the Port of Kalama shoreline between 1962 and 1969 to create a 5.5-m (18-ft) tall, 182-m (600-ft) long berm of sand, rocks, and logs to help reduce periodic flooding (Urrutia 1998:185). A 1970 aerial photo shows that much of the current fill cap had been emplaced by this time, and the shoreline was bermed and straightened within the project area (USGS 1970).

The eruption of Mt. St. Helens on May 18, 1980, caused a huge flow of ash and debris to flow down the Toutle River, into the Cowlitz River, and into the Columbia River just downstream from the Port (Urrutia 1998:198). The volcanic debris brought ship traffic in the Columbia River to a halt, prompting the USACE to initiate extensive dredging. These dredging activities deposited large amounts of sand onto the current project area allowing the Port to develop the existing BHP Steel Port Facility on top of dredge materials and maintain the area north of the current project area for wildlife (Urrutia 1998:198). This development within the project area is visible when comparing the U.S. Geological Survey (USGS) maps (USGS 1953, 1990).

PREVIOUS CULTURAL RESOURCE STUDIES

AINW conducted a review of records and reports held by DAHP that are available through the Washington Information System for Architectural and Archaeological Records Data (WISAARD) online database. Materials in the AINW library, including historical maps and published secondary sources, were also reviewed to determine if archaeological or historic-period resources have been identified within or near the project area and to determine if surrounding areas have been surveyed.

No archaeological sites or historic-period resources have been recorded within the project area, and the area has not previously been surveyed for cultural resources. A total of four cultural resource surveys have occurred within a 1.6-km (1-mi) radius of the project area. The nearest cultural resource survey is approximately 1.05 km (0.65 mi) northeast of the project area and was conducted by Larson Anthropological Archaeological Services Limited in 2000. Their cultural resource survey and subsurface testing identified no new archaeological resources (Forsman et al. 2000).

Other cultural resource surveys include a survey for the East Port regional forcemain completed by AINW in 2014 approximately 1.48 km (0.92 mi) north by northeast of the project area (Walker and Borth 2014). The survey identified no new archaeological resources, and recorded the Meeker Drive Bridge as a historic resource. The bridge was constructed in 1952 and was recommended to be not eligible for listing in the NRHP.

In 2006, Plateau Archaeological Investigations conducted a survey for a cellular tower approximately 1.4 km (0.9 mi) northwest of the project area (Harder and Hannum 2006). Their cultural resource survey and subsurface testing identified no new archaeological resources.

In 2007, Leslie Schwab performed a historic resource inventory survey of downtown Kalama. Her survey of First Street identified and recorded 15 historic buildings, none of which have a determination of eligibility for the NRHP (Schwab 2007).

The nearest previously recorded cultural resource to the project area is a prehistoric lithic scatter (45CW246) located approximately 1.6 km (1.0 mi) to the north (Figure 2). The site consists of several cryptocrystalline silicate tertiary flakes along the north bank of the Kalama River. However, the site was disturbed by modern camping activity and riverbank erosion (Kramer 2003).

The Kalama River Bridge crossing has been recorded and determined to be eligible for listing in the NRHP (Holstine 2013). The bridge is located 1.4 km (0.9 mi) north of the current project area. The closest registered property is the St. Joseph's Catholic Church located 1.8 km (1.2 mi) southeast of the project area in Kalama, and it is listed in the Washington Register of Historic Places (Karnofski 1979).

The WISAARD archaeological predictive model designates this area as "Survey Highly Advised: Very High Risk," indicating a high probability of prehistoric archaeological resources within the project area below a cap of dredge materials. The ethnographic information and archaeological resources discussed above support this designation. However, active alluvial erosion and deposition along the Kalama River and Columbia River, Columbia River dredge and fill activities (see Harder and Hannum 2006:7; Musil 2000:2), and events such as the eruption of Mt. St. Helens and its effect on the rivers all suggest that finding intact and/or relatively shallow archaeological deposits within the project area would be unlikely. Historic-period use of the general region since the mid-1800s has been well-documented, but the same natural and artificial impacts to the project area have likely affected those potential deposits. No evidence of buildings, structures, or use of the exact project area has been found in historic documents. This indicates that the types of historic-period resources that may be found would likely be isolated artifacts or artifacts related to the nearby railroad built in the 1870s.

ARCHAEOLOGICAL FIELD SURVEY METHODS AND FINDINGS

The archaeological pedestrian survey and geoarchaeological testing was conducted on May 11, 2016, by AINW Supervising Archaeologist Louis Fortin, Ph.D., R.P.A., and Senior Georchaeologist Eva Hulse, Ph.D., R.P.A. The project was managed by Dr. Hulse and Senior Archaeologist Terry Ozbun, M.A., R.P.A.

Field Methods

The pedestrian survey was conducted by two AINW archaeologists using transects spaced 10 to 15 m (33 to 49.5 ft) apart to cover the project area (Figure 2). Geoarchaeological testing took place at seven test pit locations (test pits TP-1 through TP-7) (Figure 2).

The mechanical test excavations were conducted by Port maintenance staff using a Caterpillar 312C excavator with a ½-yard bucket (Photo 1). The test pits were placed approximately 50 m (164 ft) apart, with adjustments to accommodate vehicle access and buried utilities. During mechanical excavation, AINW archaeologists were located a safe distance from excavation operations while maintaining line of sight with the removal of sediment to determine if archaeological resources were present. Depth measurements were collected using a hand-held tape measure to determine when the target depth of 3 m (10 ft) below the surface had been reached. A Trimble Geo XT Global Positioning System unit, aerial maps, and USGS quadrangle maps were used for orientation and to map the position of geoarchaeological test pits (Photo 2).

Samples of native soil were retrieved from the test pits by Port maintenance staff using the excavator bucket, and screened by AINW through nested 6.4- and 3.2-millimeter (¼- and ⅛-in) mesh hardware cloth. The sediments within the test pits were documented using standard lithostratigraphic terminology, and the depth to native soil was recorded. The pits were backfilled by Port maintenance staff after excavation was completed and the sediments had been inspected.

Findings

The project area is crossed by unpaved access roads, and gravelly, sandy sediment is visible across the surface (Photos 3 and 4). The project area lies on a fill cap that has an average surface elevation of about 8.2 m (27 ft) asl. This area has been previously used to store lumber, and the surface features a series of thinly-vegetated gravel platforms and drainage swales. Apart from these swales, the terrain is relatively level across the project area. As observed during the pedestrian survey, the project area had 75% to 100% ground surface visibility (Photos 3 and 4). No prehistoric or historic-period artifacts were observed on the ground surface during survey.

Within the test pits, three general strata were observed (Photos 5 and 6): the uppermost gravel fill, an intermediate layer of sandy dredge fill, and the underlying native soil. No prehistoric or historic-period artifacts were observed within the sediments. The uppermost 0.9 m (3 ft) is dark grayish brown (10YR 4/2) gravel fill characterized by 2- to 5-cm (0.75- to 2-in) angular gravels supported by a matrix of loose, granular, sandy silt. In test pits TP-3 through TP-6, this gravelly layer caps a deeper gravel fill layer containing abundant wood fragments and modern debris, which reaches a depth of about 1.5 m (5 ft) below the surface. The lower boundary of the gravel layer(s) was abrupt and smooth.

Across all seven test pits, below the gravel fill layers, sandy dredge fill extends to an average depth of 3.2 m (10.5 ft) below the surface. The sandy fill is a loose, single grain, poorly-sorted fine to coarse sand containing large wood fragments (Photo 7), 15-cm (6-in) angular stones, and some metal debris. It was very dark greenish gray (Gley 1 3/N) in color down to the water table, which was encountered at about 2.4 m (8.5 ft) below the surface (Photo 8); below this point, oxygen-reduced conditions had darkened the sediment to black (Gley 1 2.5/N). The lower boundary of the dredge fill layer, when present, was abrupt and smooth.

Native sediment or soil was encountered at a depth of about 3 m (10 ft) below the surface in five of the seven test pits (Table 1). Test pits TP-2 and TP-7 contained dredge fill to the base of the pit at 3.2 m (10.5 ft) below the surface. Native soil, with evidence of sediment weathering and organic matter accumulation, was present at a depth of 3 m (10 ft) below the surface in test pits TP-3, TP-4, and TP-6. Here, black (Gley 1 2.5/N), friable to firm, subangular to angular blocky, very fine sandy silt and silty very fine sand was observed, in association with common roots and rootlets. In test pits TP-1 and TP-5, the sediment showed little evidence of soil formation, and was a black (Gley 1 2.5/N), friable to firm, subangular blocky silty very fine sand with no rootlets or other inclusions, apart from some modern debris observed in the screen in test pit TP-1.

TABLE 1

TEST PIT EXCAVATIONS

TEST PIT	DEPTH OF EXCAVATION	REASON FOR TERMINATION	DEPTH TO NATIVE SOIL
TP-1	3.5 m (11.5 ft)	Reached target depth	3 m (10 ft)
TP-2	3.2 m (10.5 ft)	Reached target depth	not present
TP-3	3.2 m (10.5 ft)	Reached target depth	3 m (10 ft)
TP-4	3.2 m (10.5 ft)	Reached target depth	3 m (10 ft)
TP-5	3.3 m (11 ft)	Reached target depth	3 m (10 ft)
TP-6	3.2 m (10.5 ft)	Reached target depth	3 m (10 ft)
TP-7	3.2 m (10.5 ft)	Reached target depth	not present

Interpretations

The sandy dredge fill dates to between 1951 and 1970, and likely was emplaced during the large Port berm construction project between 1962 and 1969 (Urrutia 1998; USGS 1951, 1970). Below this, native soil was recorded at an elevation of 5.1 m (17 ft) asl, which corresponds to a depth of 3 m (10 ft) beneath the modern surface. The native soil reflects a vegetated wetland environment, with a fine-grained slackwater deposit stabilized by patchy wetland plants. Closer to the modern riverbank, no native soil was encountered. This reflects a drop-off in elevation at the former edge of the river, now filled. The historic riverbank itself was not encountered, but may be preserved within the project area at a depth of about 5.1 m (17 ft) below the surface; this depth corresponds to the elevation of the un-filled riverbank near the mouth of the Kalama River, which sits just above the waterline at 3 m (10 ft) asl.

As a comparison, north of the project area, an adjacent undeveloped lowland area varies in elevation from 3.5 to 4.5 m (12 to 15 ft) asl. This is slightly lower than the buried land surface beneath the fill within the project area. Indeed, the lowlands north of the project area are a remnant of the former Hensils Lake (GLO 1857a). The project area is located south of an arm of the former Hensils Lake within the lake basin, on what may have been slightly higher ground. The historic-period buried native soils within the project area indicate a low, wetland landform that would have been unsuitable for human settlement. Significant prehistoric or historic-period archaeological resources are unlikely to be present within the upper portion of the buried surface beneath the fill.

SUMMARY AND RECOMMENDATIONS

AINW conducted a cultural resource survey for the Port's Stormwater Pond project. The study was conducted for the Port to meet DAHP standards for SEPA review, as well as Section 106 standards in anticipation of a USACE permit. Pedestrian survey of the 3.7-acre project area identified no archaeological resources on the ground surface. Archaeological monitoring of the seven geoarchaeological test pits identified native soil at a depth of 3 m (10 ft) below the surface, beneath a layer of dredge fill. During the test excavations, no archaeological resources were identified.

The fill cap within the project area has an average thickness of 3 m (10 ft), and ground disturbing activities that do not exceed this depth will not impact buried archaeological sites. Moreover, the low-relief, waterlogged terrain buried beneath the fill cap would have been unsuitable for human settlement, and the uppermost native soils here have a low probability of retaining archaeological sites. **No additional archaeological work is recommended, and no monitoring is recommended** during construction within the project area. If construction work will exceed a depth of 3.2 m (10.5 ft) below the surface, or if the project will extend outside of the project area investigated in this report, additional cultural resource studies may be needed.

If archaeological resources are inadvertently encountered during construction, all ground-disturbing activity near the find should be halted and the DAHP should be promptly notified to ensure compliance with relevant state and federal laws and regulations. If evidence of burials is encountered, all ground-disturbing activity in the vicinity should be halted immediately, and the Cowlitz County Coroner and law enforcement must be contacted. If the coroner determines the remains are non-forensic, then the DAHP will be contacted and will take jurisdiction over the remains.

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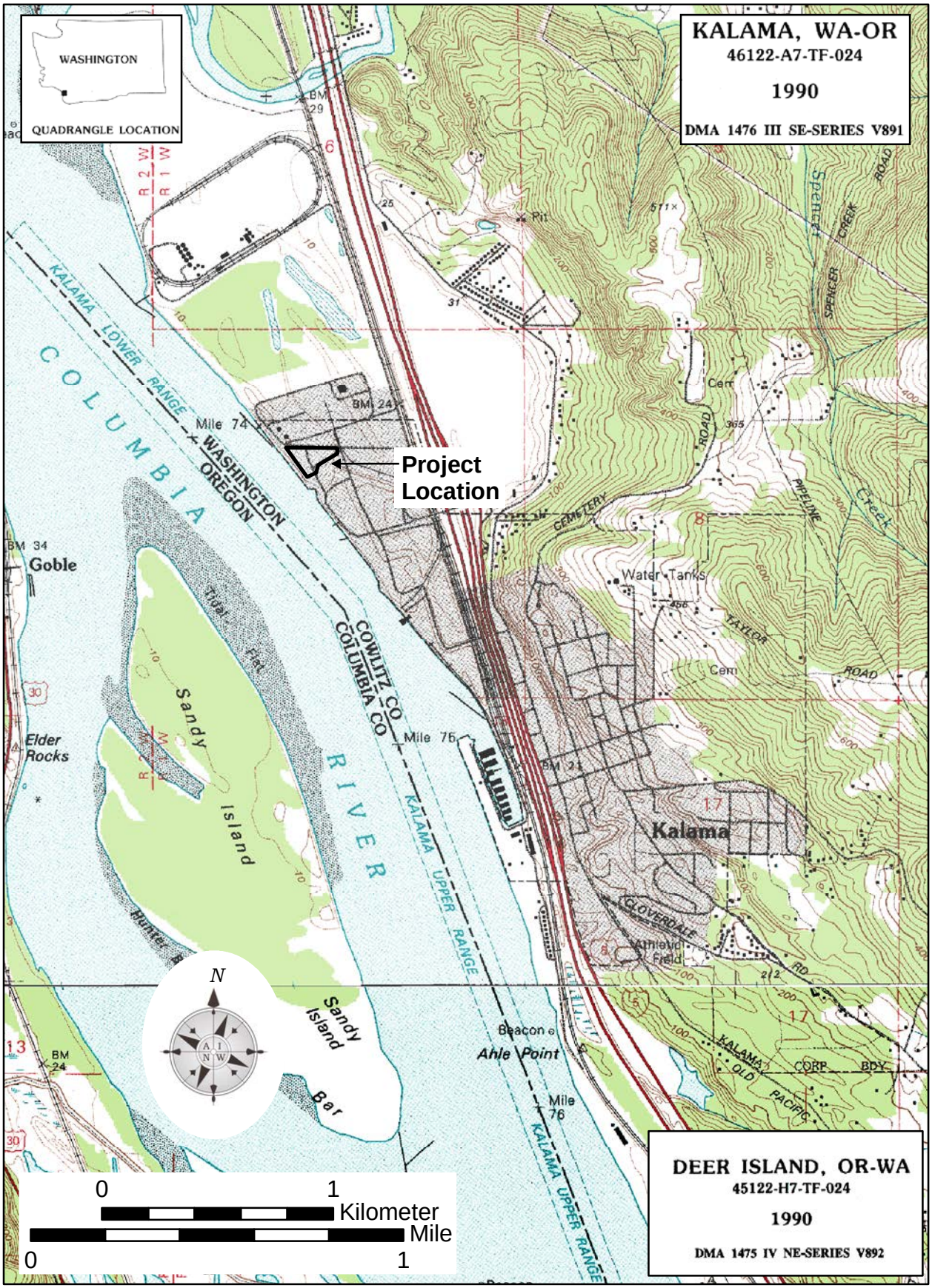

Figure 1. Location of the proposed Port of Kalama Central Port Stormwater Pond project.

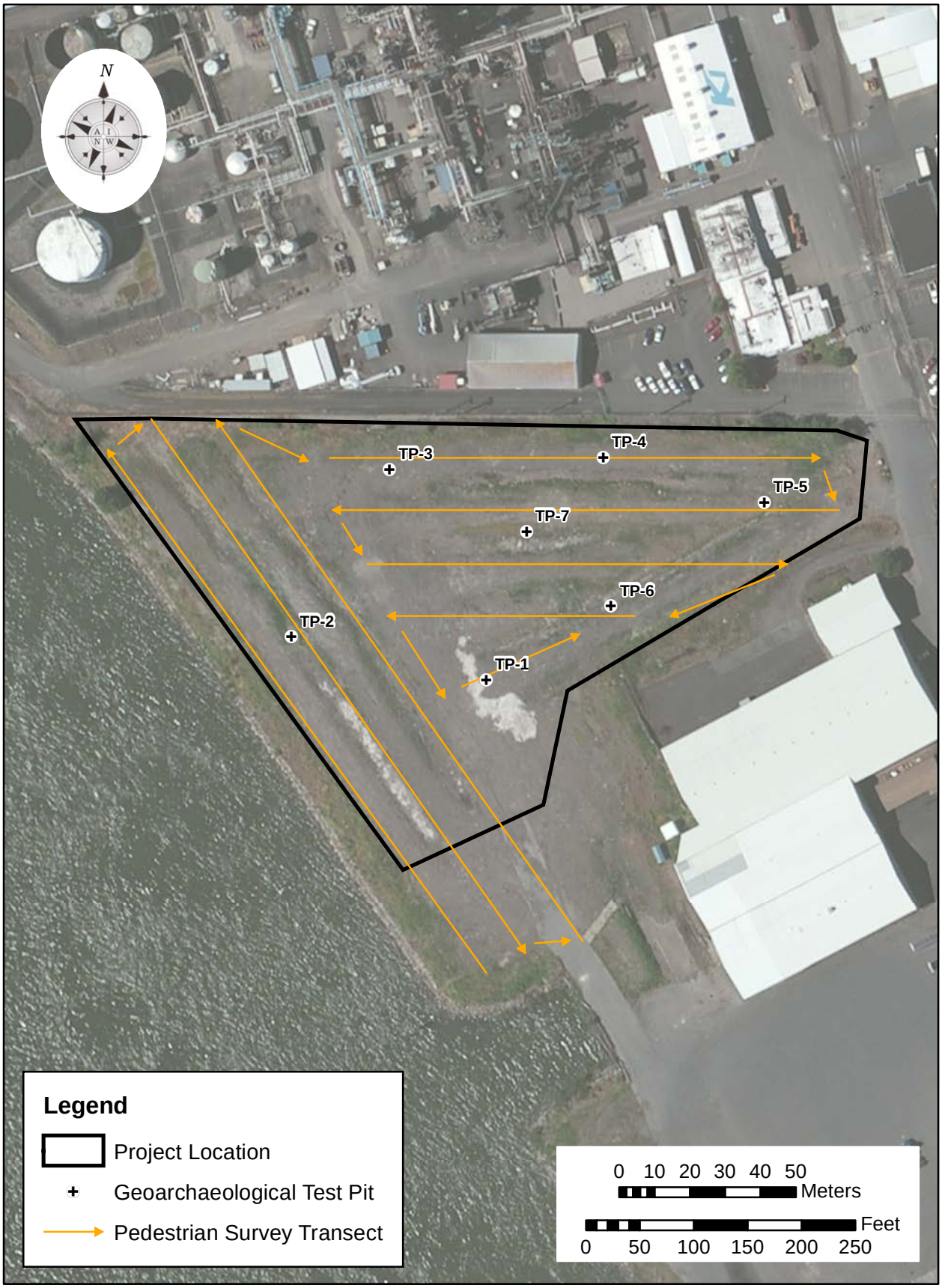

Figure 2. Project location showing archaeological pedestrian transects and test pit locations.

Photo 1. Caterpillar 312C excavator with ¼-yard bucket used for excavating. The view is towards the west-southwest.


Photo 2. Trimble Geo XT in use to map geoarchaeological test pit. The view is towards the northeast.


Photo 3. Overview of the project area from the eastern boundary after excavation of test pits. The view is towards the west.


Photo 4. Overview of the project area from the northwestern boundary. The view is towards the east-southeast.

Photo 5. Profile of test pit TP-3 to a depth of 3.2 m (10.5 ft). The view is towards the south.

Photo 6. Profile of test pit TP-7 to a depth of 3.2 m (10.5 ft). The view is towards the south.

Photo 7. Profile of test pit TP-5 with presence of wood debris. The view is towards the west.

Photo 8. Overview of test pit TP-2 with water at the bottom of the test pit. The view is down and towards the northeast.