US Army Corps
of Engineers
Alaska District

ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

Interim Removal Action – Petroleum Contaminated Soil
Haines-Fairbanks Pipeline Milepost 17.7 Project
Formerly Used Defense Site (FUDS) F10AK1016-14

August 2020

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FINDING OF NO SIGNIFICANT IMPACT

In accordance with the National Environmental Policy Act of 1969, as amended, the Alaska District, U.S. Army Corps of Engineers (Corps) has assessed the environmental effects of the following Action:

Interim Removal Action
Petroleum Contaminated Soil
Haines-Fairbanks Pipeline Milepost 17.7
Formerly Used Defense Site (FUDS) – F10AK1016-14
Haines, Alaska

The proposed action will remove petroleum-contaminated soils from the pipeline release source area at the Haines-Fairbanks Pipeline Milepost 17.7 (PMP 17.7) Formerly Used Defense Site, located near Haines Highway Milepost 15.5, north of Haines, Alaska.

This action has been evaluated for its effects on significant resources, including fish and wildlife, wetlands, threatened or endangered species, water and air quality, historic properties, and cultural resources. No significant short-term or long-term adverse effects were identified.

This Corps action complies with the National Historic Preservation Act, the Endangered Species Act, the Clean Water Act, the Magnuson-Stevens Fishery Conservation and Management Act, and the National Environmental Policy Act. The Corps incorporates by reference the analyses performed for the issuance of Nationwide Permit No. 38, "Cleanup of Hazardous and Toxic Waste." The completed environmental assessment supports the conclusion that the action does not constitute a major Federal action significantly affecting the quality of the human and natural environment. An environmental impact statement is therefore not necessary for the proposed interim removal action at the Haines Fairbanks Pipeline Milepost 17.7 FUDS.

09/01/2020

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EXECUTIVE SUMMARY

This Environmental Assessment (EA) report evaluates the potential environmental consequences that may result from alternatives proposed to address fuel-contaminated soils and groundwater at the Haines-Fairbanks Pipeline Milepost 17.7 (PMP 17.7) Formerly Used Defense Site, located near Haines Highway Milepost 15.5, north of Haines, Alaska. Petroleum, oil, and lubricants (POL) contamination at the site is being removed under the authority of the Defense Environmental Restoration Program (DERP), United States Code, Title 10, Section 2701, et seq. The DERP provides authority to clean up petroleum contamination if it poses an imminent and substantial endangerment to public health, welfare or the environment.

Fuel was released from the Haines-Fairbanks Pipeline at PMP 17.7 through a rupture due to corrosion in 1968. Although partial remediation of the fuel contaminants occurred shortly after the release, remaining contamination has been identified in the soils and groundwater through sampling performed by the U.S. Army Corps of Engineers, Alaska District (USACE). Until 2018, the contamination was understood to be confined to the soils and groundwater in the immediate project area shown in Figure 2 of this EA and was being actively monitored by the USACE. Results from groundwater and surface water sampling in 2019 identified a contaminated groundwater seep located near the Chilkat River Slough, a tributary to the Chilkat River.

The proposed action is needed to reduce soil and groundwater contaminant concentrations below levels that pose an imminent and substantial risk to human health, welfare, or the environment. The interim soil removal action will result in removal of contaminated soil from the source area (most contaminated portion of the site) in a timely manner, and represents a step in the cleanup process, rather than a final remedial decision for the project.

The objectives of the interim removal action are to reduce the potential for direct contact between recreational users and contaminated soil, as well as to reduce the groundwater contaminant concentrations to protect potential ecological receptors. The USACE has developed a No Action Alternative and three action alternatives to meet these objectives, each of which is evaluated in this EA. Under the selected alternative, Alternative 4, the USACE will excavate and treat up to 17,500 tons of fuel-contaminated soil exceeding Alaska Department of Environmental Conservation (ADEC) default Method Two Cleanup Levels from the source area and use in-situ treatment methods to accelerate the natural attenuation of residual contamination. The excavated areas will be backfilled with clean soil. Up to 1 million gallons of groundwater may be treated through a granular activated carbon filtration system. USACE will dispose of excavated materials at a licensed waste facility outside of the Haines area.

The interim removal action will more quickly address the majority of soil contamination that remains in the source area compared to postponing cleanup until additional data collection and analysis are completed to support a final cleanup decision for the entire site. Removal of the proposed source area soil contamination should result in rapid reductions in groundwater contaminant concentrations at the site and reduce risks to ecological receptors. This interim removal action represents a timely step toward reducing the remaining contamination and is not intended as a final cleanup decision for the project. After this interim removal action is completed, additional investigation will be conducted to determine if unacceptable risks to human health or the environment remain at the site based on State of Alaska environmental regulations in 18 AAC 75. If unacceptable risks remain, a final cleanup solution will be

proposed, made available to the public for comment, and implemented after full consideration of comments.

This EA evaluates the range of natural, recreational, and cultural resources and land uses that could be affected by the alternatives, including the No Action Alternative. Although potentially adverse impacts were identified for some resource categories, potential impacts are not considered significant.

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ACRONYMS

ACS	U.S. Census American Community Survey
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
ADOT&PF	Alaska Department of Transportation and Public Facilities
ADPOR	Alaska Department of Natural Resources Division of Parks and Outdoor Recreation
ADT	Annual Daily Traffic
AKEPIC	Alaska Exotic Plants Information Clearinghouse
AQI	Air Quality Index
ARPA	Archeological Resources Protection Act
AP&T	Alaska Power and Telephone
bgs	below ground surface
BLM	Bureau of Land Management
BMPs	Best Management Practices
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CDO	Community Database Online
CEMML	Center for Environmental Management of Military Lands
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cfs	cubic feet per second
CIV	Chilkat Indian Village
COPC	Contaminant of Potential Concern
CSIS	Alaska Department of Commerce, Community, and Economic Development, the Community Subsistence Information System
CWA	Clean Water Act
DERP	Defense Environmental Restoration Program
District	U.S. Army Corps of Engineers, Alaska District
DOD	Department of Defense
DRO	Diesel range organics
EA	Environmental Assessment
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
EPP	Environmental Protection Plan
ESA	Endangered Species Act
FHWA	Federal Highway Administration
FUDS	Formerly Used Defense Sites
GAC	Granular activated carbon
GRO	Gasoline range organics
HFP	Haines-Fairbanks Pipeline
ICs	Institutional Controls
IPEC	Inside Passage Electric Cooperative
Magnuson-Stevens	Federal Magnuson-Stevens Fishery Conservation and Management Act
MHTA	Mental Health Trust Authority
NAVD	North American Vertical Datum
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NRCS	National Resources Conservation Service

NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
NWP	Nationwide Permit
PAH	Polycyclic Aromatic Hydrocarbons
$PM_{2.5}$	Fine particulate matter
PM_{10}	Coarse particulate matter
PMP	HFP Milepost
Preserve	Alaska Chilkat Bald Eagle Preserve
POL	Petroleum, oils, and lubricants
RCRA	Resource Conservation Recovery Act
ROW	Right of Way
SHPO	State Historic Preservation Office
SPLP	Synthetic Precipitation Leaching Procedure
SWPPP	Stormwater Pollution Prevention Plan
TAH	Total aromatic hydrocarbon
TAqH	Total aqueous hydrocarbon
TMDL	Total maximum daily load
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bicycle Route
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1 INTRODUCTION

The Haines-Fairbanks Pipeline (HFP) is a decommissioned petroleum-product pipeline that once extended from Haines to Fairbanks, Alaska. The HFP was designed to supply fuel for Department of Defense (DOD) sites. The portion of the pipeline between Haines and the border with Canada was decommissioned in 1972. Portions of the former pipeline are now part of the DOD's Formerly Used Defense Sites (FUDS) program.

The U.S. Army Corps of Engineers (USACE) executes the FUDS program. Congress created the FUDS program in the mid-1980's, and while the Army retains lead agency authority, the USACE executes the program pursuant to the Comprehensive Environmental Response, Compensation, and Liabilities Act, as amended (CERCLA) (USACE 2012). Although Petroleum, Oil and Lubricant (POL) contamination is excluded under CERCLA, the Defense Environmental Restoration Program (DERP) provides the FUDS program with authority to address POL contamination that poses an imminent and substantial endangerment to human health and the environment.

The USACE determined in 2002 that portions of the pipeline right-of-way were eligible for inclusion in the FUDS Program. A historical report that referenced multiple releases during pipeline operations was used in part to determine areas for investigation. The historical report identified the Haines-Fairbanks Pipeline Milepost 17.7 (PMP 17.7) site as one location where fuel had been released during operations (USACE 1972). The USACE investigated the PMP 17.7 site for contamination between 2006 and 2012 and found indications that fuel contamination was still present in concentrations exceeding regulatory levels. A FUDS project was approved to address the contamination in 2012.

This Environmental Assessment (EA) has been prepared under the National Environmental Policy Act (NEPA) to specifically evaluate the potential alternatives for remediating the contamination at PMP 17.7, which is located at Haines Highway milepost (MP) 15.5. Four alternatives have been evaluated, including the No Action Alternative (Alternative 1), Institutional Controls (Alternative 2), Source Excavation and Monitoring (Alternative 3), and Source Excavation, In-situ Treatment, and Monitoring (Alternative 4).

1.1 Historical Background

The HFP extends 626 miles from the town of Haines through the Canadian provinces of British Columbia and the Yukon Territory, through Tok, Alaska, and terminating in Fairbanks, Alaska (Figure 1). The pipeline route generally parallels the Haines Highway from Haines to Haines Junction, Yukon Territory. It then follows the Alaska Highway to Delta Junction, Alaska, continuing along the Richardson Highway to Fort Wainwright, Alaska. The 8-inch diameter pipeline was built to transport fuels from the port at Haines to military bases in interior Alaska (CEMML 2003).

The HFP, five pumping stations, and two bulk storage terminals were constructed from 1953-1955 by the U.S. military and began operation in 1956. Much of the pipeline was laid on the ground surface, although most of the 42 miles between the Haines Fuel Terminal and the Canadian border were buried. Four types of fuel were conveyed including diesel, automotive gas, jet fuel, and aviation gas. The vast majority of fuel transported through this pipeline was jet propulsion fuel No. 4 (JP-4) (CEMML 2003).

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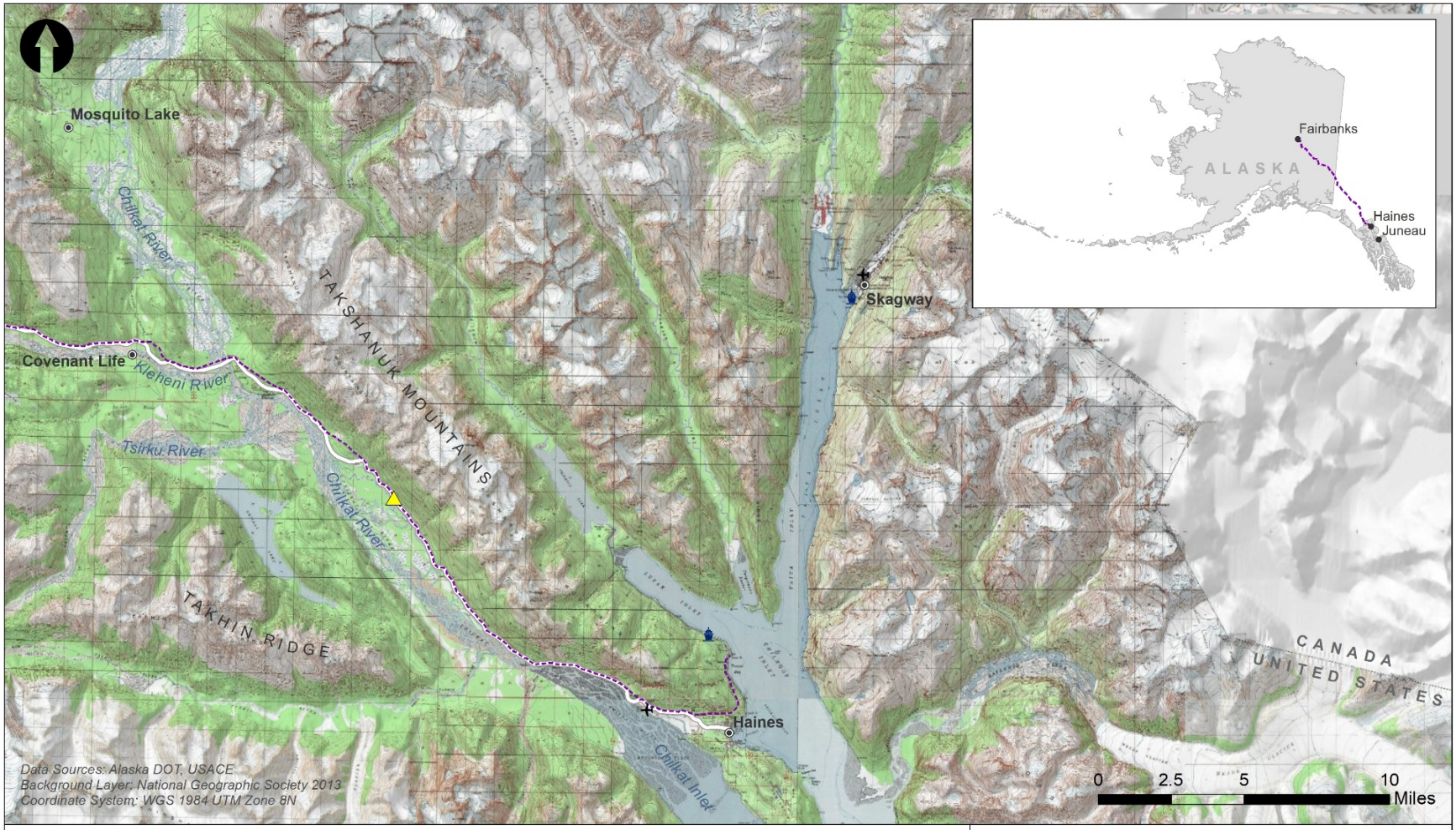

LEGEND

- Approximate pipeline route
- PMP 17.7
- Haines highway
- Town
- Town airports
- Ferry terminals

Alaska District
U.S. Army Corps of Engineers
Anchorage, AK

Project Location
Pipeline Milepost 17.7
Haines-Fairbanks Pipeline FUDS Alaska
Project #: F10AK1016-14

Figure 1	Date: December 2019

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The above-ground portion of the pipeline was plagued with leaks from corrosion, ice damage, and vandalism caused by bullet holes. Among many reported leaks was a corrosion leak in the buried portion of the HFP at PMP 17.7 that was reported in December of 1968. The leak had resulted in the loss of 33,600 gallons of fuel. The pipe was excavated and leaked fuel filled the trench. Fuel was subsequently pumped into a steel vault and burned off numerous times.

Constant leaks and maintenance requirements resulting from pipeline corrosion were ongoing at numerous locations and in 1970, a study by the U.S. Army Material Command concluded that the HFP was no longer needed. Between 1971 and 1979 the HFP was phased out and decommissioned (CEMML 2003).

The PMP 17.7 site is listed on the Alaska Department of Environmental Conservation (ADEC) Division of Spill Prevention and Response Program website under the name "Haines-Fairbanks Pipeline MP 17.7" with Hazard Identification (ID) #4426 and File ID #900.38.001.

1.2 Previous Actions

Multiple environmental investigations and cleanup activities have been conducted at the PMP 17.7 release site. Each are summarized below.

1968 – Initial spill of 33,600 gallons of fuel. Source excavation of the site was subsequently conducted and leaked fuels were burned off.

2006 – (USACE 2008, 2009) Soil core samples were collected by drilling boreholes in April 2006. Fuel contamination was identified by olfactory and visual methods; however, samples were not submitted for analytical testing. Fuel contamination was identified at a depth of five feet below ground surface (bgs) on the east side of the highway and at two feet bgs on the west side of the highway (USACE 2009). Four soil samples, five sediment samples, and two surface water samples were collected in May 2006 (USACE 2007). Sampling was focused within the pipe trench, although samples were also collected within and adjacent to the burn box. A "background" sediment/surface water sample on the west side of the highway was also collected. Except for one surface water sample, the trench samples did not indicate fuel contamination. The burn box samples indicated fuel contamination in sediment and surface water.

2007 – (USACE 2008) Soil gas sorber analysis conducted on each side of the highway and along the trenching spoils mound showed elevated soil gas contaminant concentrations in the central and northern portions of the site.

2012 – (USACE 2013) Twenty-one borings and ten temporary wells were installed on either side of the highway. Site contaminants of concern included gasoline range organics (GRO), diesel range organics (DRO), and benzene.

2014 – (USACE 2014) Twelve soil borings were drilled and 23 primary soil samples were collected in July 2014. Multiple compounds exceeded the migration to groundwater ADEC cleanup level in one or more samples including GRO, DRO, benzene-toluene-ethylbenzene-xylenes (BTEX), 1-methylnapthalene, and 2-methylnaphthalene. Eight permanent groundwater monitoring wells were installed and sampled. GRO, DRO, and benzene exceeded ADEC Table C Groundwater Cleanup Levels. Free product was identified in one well. In August 2014, five sediment and two surface water samples from the Chilkat River Slough were collected. No site contaminants were detected in any of the sediment or surface water samples from the slough.

2015 – (USACE 2018a) Groundwater samples were collected from eight permanent monitoring wells in November 2015 by USACE personnel. Sample results were consistent with the results of sampling completed in 2014. Five monitoring wells were impacted with GRO, DRO, and/or benzene concentrations exceeding ADEC Table C Groundwater Cleanup Levels. Free product was not observed in any of the wells during this effort.

2016 – (USACE 2018a) Eight permanent wells were sampled by USACE personnel in April/May 2016 and results were consistent with previous groundwater sampling events. No free product was observed in any of the wells during this effort. Four co-located sediment and surface water samples were collected within the flowing water on the east side of the slough. Site contaminants were not detected in the surface water or sediment samples. A groundwater seep in a gravel bar adjacent to the slough bank was observed to contain a biogenic sheen and a surface water and sediment sample was collected from the seep location (16HFP17-SW3). No site contaminants were detected from the seep sediment sample, however, the seep surface water sample exceeded ADEC Water Quality Standards for total aromatic hydrocarbon (TAH) and total aqueous hydrocarbon (TAqH) concentrations. The surface water sample exceeding ADEC surface water criteria was collected from a small area of ponded water in a gravel bar along the bank, and not directly from the slough itself (USACE 2017).

2018 – (USACE 2018b) All eight permanent wells were sampled in April 2017. Results were generally consistent with prior spring sampling efforts. Temporal trend analyses did not show increasing trends in contaminant levels over a five-year time period. GRO, DRO, and benzene concentrations appeared to uniformly decrease in 2017, as compared to results from the April 2016 groundwater sampling event. The only exception was the benzene concentration at 17-MW3, which increased slightly.

Five surface water samples were collected from the Chilkat River Slough as part of the effort. The surface water samples were analyzed for BTEX and polycyclic aromatic hydrocarbons (PAHs) in order to calculate TAH and TAqH values. None of the surface water samples exceeded the ADEC Surface Water Quality Standards criteria for TAH and TAqH and all BTEX and PAH results were non-detect.

2019 – (USACE 2019) Sampling of permanent wells completed in April 2019 showed continued detections of fuel-related contaminants in the project area. Exceedances of ADEC Table C Groundwater Cleanup Levels were reported for BTEX and naphthalene at five groundwater monitoring wells, GRO in four wells, and DRO in only one well. TAH and TAqH were detected above ADEC surface water quality standards in a seep sample collected from an exposed gravel bar next to the bank of the Chilkat River Slough.

1.3 Study Area Description

Haines is located on the western shore of the Lynn Canal, at the northern end of the Chilkat Peninsula between Chilkat and Chilkoot Inlets in Southeast Alaska, approximately 75 air miles northwest of Juneau (Figure 1). The PMP 17.7 site is located north of Haines along the Haines Highway at approximately MP 15.5 within the Alaska Department of Transportation and Public Facilities (ADOT&PF) Highway right-of-way. The relatively flat project site is approximately 2.45 acres, and encompasses herbaceous and forested wetland, riparian forest, and habitat disturbed by construction of the Haines Highway.

There are eight groundwater monitoring wells at the project site (17-MW1 through 17-MW8). Wells 17-MW1 through 17-MW3 are on the east side of the highway, and all other wells are on the west side. The pipeline runs to the east of the highway. The excavated area or trench that remains from the original

cleanup effort follows the toe of the hill slope to the south and ends at a green utility box near MP 15.5. Trenching spoils remain mounded on the highway side of the pipeline trench.

1.4 Purpose and Need for Action

The DERP provides the FUDS program with authority to address POL contamination that poses an imminent and substantial endangerment to human health and the environment. The proposed action is needed to reduce soil and groundwater contaminant concentrations below levels that pose an imminent and substantial risk to human health, welfare, or the environment.

Under ADEC cleanup regulations (18 AAC 75.345), contaminated groundwater must meet groundwater cleanup levels if the current uses or the reasonably expected potential future use of groundwater is a drinking water source. Regulation 18 AAC 75.350 defines groundwater as a drinking water source unless a series of demonstrations can be made to exclude it. In this case, although groundwater in the area is not currently used for drinking water, use of groundwater as a drinking water source in the future has not been excluded. Contaminants detected above ADEC's Migration to Groundwater Cleanup Levels in soil include GRO, DRO, BTEX, and PAHs, including 1-methylnapthalene, and 2-methylnaphthalene. Contaminants detected above ADEC's Table C Groundwater Cleanup Levels include GRO, DRO, BTEX, and naphthalene.

According to regulation (18 AAC 75.345), groundwater that is closely connected hydrologically to nearby surface water may not cause a violation of the water quality standard in 18 AAC 70 for surface water. Exceedances of ADEC's Surface Water Quality Standards were found in samples collected in 2016 and 2019 from a seep located on the bank of the Chilkat River Slough. Although contamination has been detected in a groundwater seep along the bank of the slough, the flowing Chilkat River Slough water is not currently impacted by the site contamination based on sediment and surface water samples collected in 2014, 2016, and 2017 all of which were below ADEC's Water Quality Standards.

The objectives of the proposed action are to remove as much of the soil contamination that exceeds ADEC's default Method Two Cleanup Levels as practicable in order to prevent contact between recreational users and contaminated soil, and to reduce groundwater contamination levels to protect potential receptors. These objectives will be accomplished by excavating soils from the most heavily contaminated area (source area) and through additional in-situ treatment of contaminated groundwater and soil.

The proposed project is designed to substantially reduce contamination that poses a risk to human health and the environment through an interim soil removal action within the source area and long-term in-situ treatment to remediate residual contamination from soil and groundwater. This interim soil removal action represents a timely and tangible step toward resolving ongoing contaminant issues, rather than a final remedial decision for the project, which will take years to reach and implement, as regulated by ADEC's contaminated sites cleanup process under 18 AAC 75, EPA guidance, and FUDS program policy Instead, the USACE seeks to perform a timely interim removal action to significantly reduce soil contamination and to address the current migration of contaminated groundwater to surface water in accordance with 18 AAC 75.330. After this interim removal action is complete, additional investigation will be conducted to determine if unacceptable risks to human health or the environment remain at the site. If unacceptable risks remain, a remedial decision will be proposed and made available to the public for comment. The USACE retains liability for the contamination until the site cleanup is considered

complete in accordance with ADEC regulation 18 AAC 75, DERP policy, and FUDS policy and guidance.

1.5 Public Scoping Comments and Resources of Concern

Under NEPA, action agencies are required to evaluate and disclose potential impacts to the human environment that may result from a proposed action. When preparing an EA, the agency has discretion as to the level of public involvement (CEQ 2007). Agencies may wait until they have prepared a draft EA before involving the public, or they may choose to hold meetings with the public prior to preparing the EA as a means of helping them to identify the areas of greatest concern.

The USACE conducted outreach to stakeholders including tribes, state and Federal agencies, and local citizens prior to developing the alternatives or preparing the EA. During the week of 15 July, 2019, representatives of the USACE Alaska District (District) provided an opportunity to meet with representatives of agencies, tribes, and other project stakeholders to collect information about public concerns, describe the planning process including the potential remediation alternatives, and coordinate with other public agencies regarding current and future uses of the project area. The USACE met with representatives from the Alaska Department of Fish and Game (ADF&G), ADEC, Alaska Department of Natural Resources (ADNR) Division of Parks and Outdoor Recreation (ADPOR), Alaska Department of Transportation and Public Facilities (ADOT&PF), National Marine Fisheries Service, the U.S. Fish and Wildlife Service (USFWS), the Takshanuk Watershed Council, the Lynn Canal Conservation, the Inside Passage Electric Cooperative (IPEC), and Alaska Power & Telephone (AP&T). The USACE also met with the Chilkat Indian Village Tribal Council in Klukwan. Substantive concerns identified during these meetings included:

- Potential impacts to subsistence resources
- Potential contaminant impacts on juvenile fish
- Potential for increased releases of contaminants during the excavation and treatment phase
- Difficulty in finding locations to process contaminated materials
- Potential impacts to fish habitat
- Timing of proposed action relative to actions proposed by other agencies

Additional public involvement activities are discussed in Section 5, Community Participation.

2 ALTERNATIVES

This section provides a review of the alternatives that were developed to address the contaminated area. The sections below provide (1) a discussion of constraints that limit the types and scope of alternatives possible, and (2) a description of each alternative evaluated for impacts.

2.1 Alternatives Constraints

2.1.1 Construction Accessibility

Although the construction area is easily accessible via the Haines Highway, construction vehicles will still face challenges when accessing the site for construction and off-site disposal. The Haines Highway is relatively narrow, with few shoulders, turnouts, or locations for trucks to turn around. It is unlikely that the construction site will be large enough to allow large trucks to turn around, therefore egress will likely occur in the same direction as access.

2.1.2 Chilkat River Slough Proximity

Contaminated areas are adjacent to the Chilkat River Slough. The local hydraulic gradient results in a groundwater flow direction toward the slough during periods with low water flows in the river. Due to the contaminants' proximity to an important surface water resource, some in-situ technologies for contaminant treatment are not recommended for use in this instance. Nutrients, bacterial colony augmentation, and surfactants are not proposed due to the potential for adverse water quality impacts to the slough and surrounding wetlands.

2.1.3 Contaminated Soil Accessibility and Extent

The extent of soil contamination expanded westward from the initial release site on the east side of the Haines Highway, passing beneath a portion of the Haines Highway toward the Chilkat River Slough. The site is bounded on the east by bedrock mountainside. The former pipeline, which presently encases buried electric, power, and fiber optic utility cables, also runs along the eastern boundary of the project area. Beginning in 2012, the USACE has worked to delineate the extent of contamination through routine groundwater and soil sampling. However, due to the inaccessibility of parts of the project location (underneath a highway), the USACE is unable to delineate the exact boundaries of the contamination. The alternatives discussed in this EA consider the maximum amount of source excavation practicable to meet the purpose and need of the proposed action.

The contaminated soils beneath the highway and utilidor are not recommended for excavation as part of this interim removal action due to the additional impacts, risks, and costs of temporarily moving the highway and utilities to access the soil for removal. Because the contaminants are water-soluble, they move through the groundwater from areas of high concentration to areas of low concentration until they reach a state of equilibrium. Therefore, by removing contamination in areas near the highway and utilidor, in-situ remedial techniques are designed to lower concentrations of contaminants throughout the affected area. They are the preferred method to remediate the soils in these inaccessible areas and are included in the evaluation of alternatives.

2.1.4 Roadway Improvements

ADOT&PF is planning to resurface and widen the highway near this location starting in 2021. Widening the highway would cover approximately five additional feet on either side of the existing roadway with

asphalt, making additional areas inaccessible for excavation to remove contaminated soils. For maximum effectiveness, the District is coordinating construction and access schedules with ADOT&PF to ensure proposed interim removal actions occur before the ADOT&PF construction project begins.

The USACE consulted with ADOT&PF while developing the alternatives for the proposed action. Preliminary coordination with ADOT&PF concluded that highway improvements will not require the removal of the highway, and there will be no opportunity for greater access to contaminated soils during the highway improvements construction process.

2.2 Alternatives Evaluated

NEPA recommends that a project proponent consider an array of alternatives that would meet the project goals and analyze the potential environmental impacts as well as the impacts that would result from taking no action. Several measures could be undertaken to achieve the interim remediation goals at PMP 17.7. The final array of alternatives considered included the No Action Alternative (Alternative 1), Institutional Controls (Alternative 2), Source Excavation and Monitoring (Alternative 3), and Source Excavation, In-situ Treatment, and Monitoring (Alternative 4).

2.2.1 Alternative 1 No Action Alternative

Under the No Action Alternative, all monitoring activity at the existing wells would cease, and no action would be taken to remediate the site. Monitoring wells would be decommissioned, involving the removal of 2-inch PVC pipe from the eight well sites using a drill rig. This alternative would not address the presence of near-surface POL contamination in soil within the source area. Concentrations of the contaminants of potential concern (COPCs) would likely remain above ADEC cleanup levels in soil and groundwater for decades under the No Action Alternative.

2.2.2 Alternative 2 Institutional Controls and Monitored Natural Attenuation

Institutional controls (IC) are designed to help minimize the potential for human exposure to contamination. ICs offer a means to reduce or eliminate exposure of contaminants to humans without excavation or treatment. Components of the IC alternative could include (1) the installation of signage to provide warnings of contamination to those passing through the project area, (2) deed restrictions or other measures to ensure that owners and operators of the land do not allow land uses that would increase human exposure to contaminants, and (3) long-term groundwater well monitoring. If groundwater monitoring indicates an increase in contaminant concentration or unacceptable plume migration in the future, this option would allow the USACE to reevaluate the need for engineered solutions to address contaminants. This alternative would not immediately reduce the volume of POL contamination, and concentrations of the COPCs would likely remain above ADEC cleanup levels in soil and groundwater for decades into the future.

2.2.3 Alternative 3 Source Excavation and Monitoring

Alternative 3 involves the implementation of engineered remediation solutions. Up to 17,500 tons of contaminated soils would be excavated, transported by truck or barge to a suitable disposal site, and treated to break down POL contaminants and clean the soil. Groundwater remaining in the excavated areas may be pumped into lined containment areas, treated to filter out POL contaminants, and discharged into local wetlands after ADEC cleanup levels have been achieved. Excavated areas would be backfilled with clean and geotechnically stable soils. Once the backfill was complete, USACE would perform

continued groundwater and surface water monitoring to evaluate post-removal contaminant concentration trends.

2.2.4 Alternative 4 Source Excavation, In-situ Treatment, and Monitoring (Preferred Alternative)

This alternative includes all the components described above for Alternative 3 and adds in-situ treatment methods to enhance the breakdown of the residual petroleum by microbial populations that are naturally present in the soil and groundwater. Manganese and iron are by-products of respiration from petroleum-degrading microbes, so their presence in elevated concentrations in the groundwater wells within the plume at PMP 17.7 since 2014 indicate that microbes capable of degrading petroleum are present. The subsurface at PMP 17.7 is generally anaerobic, meaning that the oxygen levels are low. Microbes are currently degrading the petroleum contamination through the relatively slow process of anaerobic respiration, but degradation will be faster under aerobic conditions, when oxygen is not the limiting factor.

Alternative 4 includes the addition of an oxygen-releasing compound (ORC) to the backfill material within the groundwater smear-zone and could also be introduced by injection into the smear zone in contaminated areas that are not excavated. The ORC will provide oxygen to facilitate the more rapid process of aerobic respiration by microbes, promoting faster cleanup of the remaining contamination through natural attenuation. Finely-ground activated carbon may also be added to the subsurface in specific areas to enhance degradation of the contamination by microbes and to prevent migration of the groundwater plume toward the slough. The activated carbon will aid bacterial colonization by providing a substrate for the bacteria to bind to and will also serve to help sorb the contamination dissolved in groundwater where it could be more efficiently consumed by the bacteria living on the carbon particles. Multiple environmental remediation companies sell injectable materials for remediation of petroleum contamination. The specific brands of ORC and activated carbon selected for in-situ treatment for this project have not been determined and will be based on effectiveness, availability, feasibility, and cost.

2.2.5 Source Treatment and Disposal Options

Under each of the engineered alternatives (Alternatives 3 and 4), materials excavated from the site will be transported to a licensed waste facility. The preferred method of treating excavated materials in the Draft EA was through landfarming or biopiles, which have been used successfully in Alaska to treat POL-contaminated soil. Comments from the public suggested that USACE had not fully considered the potential environmental impacts of the proposed landfarm location in the Draft EA. After considering all the comments received on the Draft EA, USACE determined that a suitable location for landfarming or biopiles could not be identified for this project within the Haines area and therefore the contaminated soil will be shipped to a licensed waste facility outside of Haines.

2.2.6 Alternatives Considered but Not Evaluated

The NEPA process requires that a project proponent assess a range of options to meet the project's described purpose and need but does not require the evaluation of every possible option. During the planning process, USACE considered an alternative that would have included removing a portion of the Haines Highway to excavate the soils beneath the highway. This alternative was not brought forward for evaluation because an extensive excavation of this kind is not needed to achieve the goals of the proposed action. The objectives of the proposed action are to remove as much of the soil contamination that exceeds ADEC’s default Method Two Cleanup Levels as practicable in order to prevent contact between

recreational users and contaminated soil, as well as to reduce groundwater contamination levels in order to protect potential receptors.

This EA does not contemplate a final cleanup decision, which will take multiple years to reach and implement as regulated by ADEC's contaminated sites cleanup process under 18 AAC 75, EPA guidance, and FUDS program policy. Instead, the USACE seeks to perform a timelier interim removal action to more quickly address the groundwater-to-surface water pathway at the slough and the contaminated soil near the surface that is a potential risk to human health in accordance with 18 AAC 75.330. The USACE retains liability for the contamination until the site cleanup is considered complete. If the proposed action does not achieve the project goals, the USACE will evaluate additional measures to remediate the POL contamination to the desired level.

Table 1. Summary of Alternatives

Alternatives	Alternative Components	Description
Alternative 1: No Action Alternative	1. Cease groundwater monitoring and decommission wells.	Existing wells would likely need to be decommissioned using a drill rig. No further action or water quality monitoring would occur at the site.
Alternative 2: Institutional Controls and Monitored Natural Attenuation	1. Engineering Controls (e.g., signage). 2. Administrative Controls (e.g., deed restrictions). 3. Groundwater and surface water monitoring.	Institutional controls would be implemented to minimize the potential for human health exposure risks. Alternative would likely include monitoring of groundwater monitoring wells and surface water as well as maintenance of the well network and engineering controls such as signage. The operational footprint would include existing well network and contaminant plume footprint. Limited heavy equipment operation required.
Alternative 3: Source Excavation and Monitoring	1. Contaminated soil excavation, transport, disposal/treatment. 2. Limited management and treatment of product and contaminated groundwater from source area excavations. 3. Backfill placement. 4. Replacement of monitoring wells within excavation source areas and installation of additional well(s) as needed between seep and western excavation area. 5. Groundwater and surface water monitoring.	Excavate up to 17,500 tons of contaminated soil on both sides of the highway. Manage and treat contaminated groundwater to excavate below water table as necessary. Backfill with clean geotechnically suitable soils. Monitor groundwater and surface water to determine effectiveness. Temporary soil stockpiles would be constructed within the proposed excavation areas to the extent practical. Construction of a stockpile pad/equipment laydown area would be needed outside of the excavation areas and would most likely be installed on the east side of the highway south of the proposed excavation.
Alternative 4: Source Excavation, In-situ Treatment, and Monitoring	Same as Alternative 3, with addition of in-situ treatment to remediate the remaining contaminated areas.	In addition to measures described for Alternative 3, install oxygen-releasing treatment materials into the excavation to promote enhanced aerobic biodegradation. The oxygen-releasing treatment materials could be mixed with activated carbon in the most contaminated areas to prevent contaminant migration and to promote biodegradation. Backfill with clean, geotechnically suitable materials.

LEGEND

- PMP17.7 Project Impact Area
- Excavation Area
- Staging Area
- Temporary Construction Lane
- Approximate DOT ROW (150 feet)

Alaska District
U.S. Army Corps of Engineers
Anchorage, AK

Project Area
Pipeline Milepost 17.7
Haines-Fairbanks Pipeline FUDS Alaska
Project #: F10AK1016-14

Figure 2	Date: December 2019

2.2.7 Preferred Alternative Description

2.2.7.1 Alternative 4: Source Excavation, In-Situ Treatment, and Monitoring

This alternative includes excavating both east and west of the highway to remove the source area for POL contaminants, as well as soils within the smear zone where contaminants are migrating laterally with groundwater flow. Based on the estimated extent of soil contamination, POL-contaminated soil will be removed from an area covering approximately 22,800 square feet to a depth up to 10 feet bgs, although the extent and depth of soil removed may increase or decrease depending on conditions found during excavation. As much as 17,500 tons of contaminated soil could be removed from the source area, depending on soil concentrations encountered during the excavation effort. Groundwater wells within the excavation footprint will be decommissioned prior to excavation. The excavation and overall construction footprints are shown in Figure 2.

If groundwater is pumped out of the excavated areas, it will be collected in lined containment areas to prevent seepage or leaks into the soils below. Collected water will be treated through a granular activated carbon (GAC) filtration station to remove contaminants and discharged once ADEC standards have been met. The specific procedures required for treating contaminated water on-site will be included in a site-specific work plan that will be submitted to ADEC for review and approval.

Once excavations are complete, an ORC treatment compound will be mixed with clean fill prior to backfilling excavated areas to promote enhanced aerobic biodegradation. Granular activated carbon (GAC, e.g. Plume Stop™) will be injected into the subsurface along the west side of the highway in the northern portion of the site near the slough, with the intent of treating any potentially remaining groundwater contamination that may migrate toward the Chilkat River Slough.

The excavated areas will be backfilled with clean, geotechnically stable, locally sourced soils. Groundwater wells will be reinstalled at this stage to allow for continued groundwater monitoring. The project team will determine if additional wells are needed at this time.

USACE will prepare a workplan and final report documenting the implementation of this alternative and submit them to ADEC for review and approval.

Treatment of Excavated Soils

USACE considered several potential landfarm locations and identified a potential landfarm location in the vicinity of the project area at approximately mile 26 of the Haines Highway. This site was evaluated in the Draft EA that was circulated for public review in February 2020, but was subsequently eliminated from consideration based on discussions between USACE and stakeholders who were concerned about the site's proximity to the Chilkat River, subsistence resources, Chilkat Indian Village (Klukwan), and the Bald Eagle Preserve.

Disposal Alternative

USACE will dispose of excavated materials at a licensed waste facility or permitted landfill outside of the Haines area. If a suitable licensed treatment facility with capacity to accept all of the contaminated soil is not available in southeast Alaska at the time the project is implemented, the contaminated soil will be shipped by barge to the Lower 48 for disposal at a permitted landfill.

Up to 1,750 dump truck loads will be needed to transport contaminated soil to a barge loading area in Haines for shipment. USACE will prepare a site-specific workplan for the project that will include procedures for shipment and disposal of the soils at a licensed waste facility and/or landfill for ADEC review and approval.

Measures to ensure that contaminated materials are not released during shipment will be developed as part of the Draft Interim Removal Action Work Plan. The Draft Interim Removal Action Work Plan will be submitted to ADEC for review and approval.

2.2.7.2 Construction Details

The construction activities associated with the interim removal action are expected to begin in the spring of 2021. Overall, the total estimated duration of construction is anticipated to be up to twelve weeks during spring, summer, and possibly fall of 2021.

Clearing and grubbing of vegetation along the edge of the Haines Highway and in the construction area will take approximately two weeks, and will likely require the removal of several large-diameter trees near the source area and smear zone area. Approximately 1 acre of grubbing and tree or brush clearing is anticipated in preparation of the excavation effort, with an additional 1.5 acres estimated for equipment movement and staging requirements. USACE's construction contractor will be required to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) and employ Best Management Practices (BMPs) to ensure that water and soils disturbed during construction will not enter area waterways.

Excavation of contaminated soils and groundwater treatment is estimated to require approximately ten weeks and involve several pieces of large machinery, listed below. Excavation backfill and application of treatment materials will also occur at this time. Treatment of over 1 million gallons of groundwater may be required during the excavation.

Excavated materials will be stockpiled within the proposed excavation areas to the extent practicable. Construction of a stockpile pad/equipment laydown area will be needed outside of the excavation areas and will most likely be installed on the west side of the highway south of the proposed excavation area. Temporary staging areas will be constructed adjacent to or near the project site, with the minimum footprint necessary. Staging areas will be removed after completion of the excavation effort. Site backfill and restoration will require up to two weeks.

A follow-on groundwater and surface water sampling event will take place in the fall of 2021. Groundwater and surface water monitoring is anticipated through 2024 to establish new trends for the site and to gauge the effectiveness of the interim removal action and in-situ treatment. These sampling events are planned to occur at least twice per year. Groundwater sampling results will be used to assess remaining risks at the site. If unacceptable risks remain, additional investigation and/or additional remedial actions may be necessary to address the remaining contamination.

Construction equipment and facilities likely to be required during construction include (along with the estimated number needed):

- Tracked hydraulic excavator (2)
- Loader with 5-cubic yard bucket (1)
- Side or end dump trucks (3-10)
- ½-ton trucks for contractor personnel (3)

- Connex container for tools and miscellaneous equipment (2)
- Skid-mounted granular activated carbon filtration station (1)
- Temporary lined soil staging cells, each approximately 2,500 square feet (2)
- Temporary lined water containment cells, each 5,000 square feet with capacity of 10,000 cubic feet (2)

Excavation will not encroach on the existing highway road prism. Clearing and grubbing will take place on the highway shoulder, but excavation and backfill will be completed only in areas sufficiently distant from the highway to ensure that the roadway embankment is not compromised.

One lane of the Haines Highway will be temporarily closed at various stages of site work, such as truck loading, equipment transport, etc. Both lanes may also require brief, temporary closure to allow construction vehicle access and egress, with flaggers managing traffic movement during such closures.

Upon completion of construction, clean topsoil will be spread over the excavated areas. The site will be recontoured to match existing topography to the extent practicable. Previously vegetated areas that are disturbed due to contaminated soil removal may require seeding with certified weed-free native seed mixture and fertilizer, based on applicable land management requirements.

2.2.7.3 Measures to Avoid or Minimize Impacts

Several measures have been identified throughout the impacts review sections that will avoid, minimize, or mitigate the impacts of the preferred alternative. These are summarized here by measures that apply generally and by resource category.

Air Quality	• Apply water from water trucks to excavation areas, access and haul roads, and staging areas as needed to control fugitive dust. • Trucks and heavy machinery will not idle unnecessarily during construction in order to limit emissions. • Construction workers will be provided with training and equipment needed to avoid impacts from volatilizing compounds.
Aesthetics and Visual Resources	• Minimize the area of disturbance and use minimum areas for staging, clearing, and grubbing. • Any trees removed over 4 inches in diameter will be bucked to 8-foot lengths and stacked onsite or at another suitable location for public use. All other cleared brush and smaller diameter trees shall be removed or chipped and spread. • Cleared and grubbed areas are to be recontoured when construction is complete and may be seeded, as needed.
Biological Resources	• Avoid removing dead snag trees to the extent practicable, as they provide valuable avian nesting habitat. • Clearing and grubbing shall not occur between April 15 and July 15 unless work areas have been surveyed and found to be free of nesting birds. • No construction within 660 feet of active bald eagle nests. • Soil movement will follow SWPP plans to ensure salmon spawning habitat is not affected by surface runoff and siltation.

Cultural Resources	• No cultural resources are known to be in the project area. However, coordination with the USACE archeologist during construction will ensure that any cultural resources unexpectedly encountered are adequately protected. • If cultural resources are inadvertently found, construction will immediately stop and not resume until approved by the USACE archeologist in coordination with the SHPO. All applicable laws and regulations will be followed.
Hazardous Waste	• Trucks and heavy machinery used for construction will take preventative measures to avoid introduction of additional contaminants into the area, primarily through the development of an Environmental Protection Plan (EPP). • Contaminated materials will be handled and transported in accordance with all EPA and ADEC requirements for such materials.
Land Use and Management Plans	• Land management stakeholders will be involved in the consultation and coordination phase of this study to ensure that no changes will result to land management plans.
Physical Resources	• The contractor will apply mulch or straw or reseed exposed soil areas to reduce erosion and dust after completing work within a given area. Seed must be certified invasive-weed free. • Sequence construction to minimize soil exposure and erosion potential. • All non-contaminated topsoil excavated shall be segregated and stockpiled on site for use during site backfill and/or revegetation. • The contractor shall backfill the excavation areas only after it is verified by analytical results that all contaminated soil has been removed or as approved by USACE. • Clean and geotechnically stable backfill material shall be used and sourced locally, as available. The contractor shall backfill the excavation in two-foot lifts and use the excavating equipment to compact the fill.
Public Health and Safety	• A traffic control plan will ensure no delay for emergency response vehicles through the construction area. • Contaminant concentrations in discharged water will be monitored to ensure they do not exceed ADEC standards.
Recreation	• The traffic control plan will ensure minimized delay for visitors to the area. • There will be no staging or construction areas in known recreation or recreation access locations.
Transportation and Traffic	• A traffic control plan will be presented in the planning documents for review and acceptance by ADOT&PF personnel. At a minimum, flaggers will be used if any general travel lanes are temporarily closed. • All temporary access roads will be removed unless otherwise authorized by ADOT&PF to remain in place. • The existing access road to the site may be cleared or widened only to the minimum extent necessary for vehicle and equipment access to the site.

Water Resources	• Prepare and implement a SWPPP and an erosion control plan. • Staging areas, storage sites (fuel, chemical, equipment, and materials), and potentially polluting activities will be identified and secured using methods identified in the SWPPP, in a manner that will preclude erosion into or contamination of the slough or wetland. • An EPP will be developed. • Heavy equipment will be regularly inspected and cleaned. • All non-emergency maintenance of equipment will be performed off-site. • All waste (solid waste, hazardous materials, etc.) will be disposed off-site as regulated by the state. • All equipment, materials, supplies, and waste will be removed from project site when complete. • Erosion control measures will be applied to construction, staging, and access areas (e.g., silt fence or straw wattle installed where needed).

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3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Air Quality

3.1.1 Affected Environment

3.1.1.1 Air Quality

Air quality is regulated under the Federal Clean Air Act (42 CFR 7401-7671 et seq.). The U.S. Environmental Protection Agency (EPA) sets Federal clean air standards, and delegates monitoring and enforcement of these standards to state enforcement agencies. In Alaska, air quality standards are enforced by the ADEC Division of Air Quality.

ADEC designates areas that do not meet air quality standards as non-attainment areas and applies restrictions on actions that can occur there. Areas that have previously not met air quality standards, but which are currently meeting the standards are referred to as maintenance areas. The air basin that includes the project area meets all air quality standards and is not designated as either a non-attainment area or a maintenance area.

ADEC monitors pollutants including PM_{10}, which is fine particulate matter that can impact the human respiratory system at levels above 100 ug/m^3, and $PM_{2.5}$, which are even smaller particulates that can affect the lungs and heart. Records kept by ADEC for Air Quality Index (AQI) show that $PM_{2.5}$ and PM_{10} periodically reach elevated levels at the Floyd Dryden Station, which is in Juneau and is the nearest air quality monitoring station to the project area (ADEC 2019). Raw data between June 1 and July 8, 2019, indicate that levels of PM_{10} reached between 50-100 ug/m^3 (moderate health effect category) on six days, while $PM_{2.5}$ reached between 50-100 on four days. All other days, both measurements were below 50 ug/m^3 (good health effect category). There were no measurements of PM_{10} or $PM_{2.5}$ that reached unhealthy levels for the period evaluated (ADEC 2019).

3.1.2 Environmental Consequences

Impacts to air quality would be significant if the proposed action:

- Resulted in the reclassification of the air basin as non-attainment or a maintenance area,
- Resulted in particulate matter levels above Federal standards.

3.1.2.1 Alternative 1 No Action Alternative

Under the No Action Alternative, no further action would be taken to monitor the groundwater wells at PMP 17.7. Fewer groundwater well monitoring trips into the area would slightly reduce emissions from vehicles, but there would be no measurable benefit to air quality as a result. Conditions at the project site would remain as they currently are, resulting in no adverse effect on air quality.

3.1.2.2 Alternative 2 Institutional Controls and Monitored Natural Attenuation

Institutional controls (ICs) would include measures to install warning signs about contamination, administer land use controls, and continued groundwater monitoring. In comparison to current vehicle visits to the project site, the installation of signs would require one or two additional trips, resulting in an increase in vehicle emissions at the site. This increase would not be measurable and would have no effect

on air quality. Groundwater monitoring would continue at current levels after that, resulting in no change to current air quality conditions.

3.1.2.3 Alternative 3 Source Excavation and Monitoring

Up to 1,750 dump truck trips to and from the project site and daily use of heavy machinery use would be required during the process of source excavation. Construction vehicles and machinery would emit particulate matter and constituent gases during the construction period, but there would be no permanent sources of emissions following completion of construction. The air basin in which the excavation and soil shipment areas are found is in attainment for all criteria pollutants. Diesel particulate matter in the form of PM_{10} would be released during the 8-week construction period and during occasional monitoring actions, but such releases would disperse quickly and would remain below allowable thresholds.

Exposure of contaminated groundwater and soils to oxygen would allow organic contaminants to volatilize and be released into the atmosphere. Although the aerosolized compounds would disperse and oxidize quickly and would not pose a threat to passersby, residents, or users of the area, construction workers would develop and follow a site-specific health and safety plan to prevent exposure to potentially hazardous concentrations of site contaminants. Releases from volatile compounds would be addressed in the construction health and safety plan. Air quality impacts would be temporary and less than significant.

3.1.2.4 Alternative 4 Source Excavation, In-Situ Treatment, and Monitoring (Preferred Alternative)

Air quality impacts associated with Alternative 4 are similar to those occurring under Alternative 3, but construction emissions will occur over a twelve-week period due to completion of the ORC and GAC application. This impact will be temporary and less than significant.

3.2 Aesthetics and Visual Resources

3.2.1 Affected Environment

The visual character of the project area is defined by native vegetation communities, the two-lane road of the Haines Highway, the rising slope of the Takshanuk Mountains to the east and the snow-capped peaks of the Takhin Ridge in the distance to the west. In the immediate project vicinity and to the east of Haines Highway, the Takshanuk Mountains rise steeply from sea level to over 5,000 feet in elevation. Deciduous trees such as black cottonwood and green alder line the Haines Highway on both sides, rising up the Takshanuk Mountains slope to the east and blocking the view of the Chilkat River Slough to the west. At the southernmost end of the project area, a green swath of wetland meadow extends south southwest nearly 1,000 feet until reaching the black cottonwoods lining the Chilkat River Slough. The area is a mosaic of emergent herbaceous plants, downed trees, and standing water. In the distance, the craggy and snow-capped peaks of the Takhin Ridge can be seen emerging above the treeline along the Chilkat River.

Over the course of a year, the aesthetics in the project area transition from lush green vegetation and fully leafed deciduous trees in the summer months, bare trees in the fall, to snow-covered wetlands in winter, to the spring melt with wildflower blooms. The natural beauty of the area was memorialized in October 2009 when the Haines Highway was designated as a National Scenic Byway by the Federal Highway Administration (FHWA). Officially recognized as the Haines Highway – Valley of the Eagles, it is an extension of the Alaska Marine Highway System, which has in turn been recognized as one of the highest quality scenic pathways in the U.S., known as an All-American Road (FHWA 2019). Visitors to the area include local residents and the many visitors to the project area.

The Chilkat Bald Eagle Preserve is one of the most popular draws for wildlife viewing in the project region. The preserve is of national and world significance due to the annual congregation of thousands of bald eagles between October and February. The Chilkat River provides constant year-round water flow and ice-free spawning for late run salmon, which in turn provide a food source to bald eagles throughout the winter.

In the project area, the pipeline is below ground, and the contaminant spill has resulted in visual changes in the environment including a historical suppression and dieback of vegetation. In a 1972 report, it is noted that spills had suppressed woody vegetation growth at several sites along the HFP (USACE 1972). In the months following the PMP 17.7 leak, some alders died in the vicinity of the spill.

In April 2019, a rust-colored stain and puddles of standing water were observed along the base of the riverbank on a gravel bar of the Chilkat River Slough by members of USACE. The rust-colored staining is indicative of high iron content in the groundwater. Dissolved ferrous iron is converted into ferric iron when exposed to the atmosphere resulting in a reddish-brown precipitate. Although the precipitate is not hazardous to health, it is not aesthetically pleasing. Some of the shallow pools of water on the gravel bar observed in April 2019 contained silver-colored biogenic sheen. Biogenic sheens, created by the presence of bacteria, are sometimes mistaken for petroleum sheens that are created by a thin layer of petroleum on the water surface. Biogenic sheens will break apart into jagged shapes when disturbed (such as poking or stirring with a stick) and will not re-form, whereas a petroleum sheen will swirl around and remain intact. The sheen observed at the PMP 17.7 site broke apart when disturbed and did not re-form, suggesting a biogenic (bacterial) source for the sheen. Biogenic sheens are common in wetlands containing stagnant surface water and dissolved organics.

There are no overhead utilities along the highway in the excavation area. There are no historic structures or light sources in or near the project area. A green utility box of less than five feet in height is present to the east of the highway near PMP 17.7.

3.2.2 Environmental Consequences

An alternative would cause a significant visual/aesthetic impact if it would result in any of the following:

- Substantial effects on a scenic vista or byway;
- Substantial damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within view of a state scenic highway;
- Substantial degradation of existing visual character or quality of a site and its surroundings; or
- Creation of a new source of substantial light or glare that would affect day or nighttime views in the area.

3.2.2.1 Alternative 1 No Action Alternative

Selection of the No Action Alternative would result in the ongoing presence of contaminants in the project area. To date, contaminants have affected the project site in two ways, by seeping into the bank of the Chilkat River Slough and causing a rust-colored stain on the bank during late winter/early spring, and historically through vegetation dieback. Vegetation has recovered since the original leak. Without addressing contaminants at the site, the visual indicators of the presence of contaminants along the bank of the slough during periods of low water would remain. However, the rust-colored staining is restricted to a small and localized area that is not visible from the Haines Highway, and is only visible during low water conditions in late winter and early spring. Furthermore, abundant healthy vegetation has regrown

around the site, and there are no visual cues of limited vegetation growth in the contaminated areas. No significant adverse effects would result to the visual character of the area, and there would be no discernible effect on the overall aesthetic value of the Scenic Byway from the No Action Alternative.

3.2.2.2 Alternative 2 Institutional Controls and Monitored Natural Attenuation

Installation of contaminant warning signs in the project area would create a minor change in the aesthetics of the area. Signage would be designed to match appropriate visual resources guidance for a National Scenic Byway. There would be no significant effect from ICs in the project area.

3.2.2.3 Alternative 3 Source Excavation and Monitoring

This alternative would require a temporary increase in vehicle visits to the project area during project construction. It would also require the daily presence of heavy machinery such as excavators, loaders and trucks, as well as traffic flagging, signage, and numerous machinery operators, flaggers, and other personnel. There would also be a need for storage of heavy machinery overnight. This presence is anticipated to last for approximately eight weeks. After completion of excavation, the excavation site would be backfilled with clean materials sourced locally and allowed to return to natural conditions. Future monitoring of groundwater wells and surface water would occur up to twice per year, resulting in no change. If additional groundwater testing is required, heavy machinery may return to the area for a day or two.

This alternative would include construction of temporary soil stockpiles at the construction area. The presence of soil stockpiles would be a minor and temporary visual impact. During operations, soil surface levels would be consistent with current conditions. There would be no significant effect to aesthetics from Alternative 3.

3.2.2.1 Alternative 4 Source Excavation, In-situ Treatment, and Monitoring (Preferred Alternative)

Effects resulting from this alternative will be similar to those for Alternative 3. The construction machinery, daily activity, and schedule will increase by up to four weeks to allow for introduction of in-situ treatment materials. All excavated and otherwise impacted areas will be backfilled and recontoured. The site will be allowed to naturally revegetate. There will be no significant long-term effect to aesthetics from Alternative 4.

3.3 Biological Resources

3.3.1 Affected Environment

Biological resources in the project area include terrestrial and wetland vegetation communities, fish and wildlife, habitat within the Chilkat River Slough, and the nearby Chilkat Bald Eagle Preserve (Figure 3).

3.3.1.1 Vegetation Communities

The 2.45-acre excavation and staging area includes 0.69 acre of black cottonwood forest, 0.46 acre of developed or disturbed habitat, and 1.3 acres of wetlands, described below in Section 3.3.1.3 (Table 2). The Alaska Center for Conservation Science's Land Cover and Wetlands mapper reports five distinct vegetation communities in or surrounding the project area (ACCS 2019a). These communities include the cottonwood forest that occurs in the project area as both open and closed canopy woodlands, as well as several other vegetation assemblages that surround the site, including Sitka spruce closed woodland,

southern Alaska low-tall shrub, and southern Alaska mesic combined dwarf shrub and herbaceous communities.

Table 2. Vegetation types and acreages within the project area.

Habitat Type	Acres
Black Cottonwood Forest	0.69
Developed/Disturbed	0.46
Herbaceous Wetland	1.1
Forested Wetland	0.2

Source: ACCS 2019a

Invasive Plants

The Alaska Exotic Plants Information Clearinghouse (AKEPIC) is a database that provides geospatial information regarding non-native plant species in Alaska (ACCS 2019b). The invasiveness rank is calculated based on a species' ecological impacts, biological attributes, distribution, and response to control measures and ranges from no threat (0) to major threat to native ecosystems (100).

Based on a geospatial search of the AKEPIC database, there are 11 invasive plants reported as possibly occurring in the project area (Table 3).

Table 3. Invasive plants in the project area.

Scientific Name	Common Name	Invasiveness
Leucanthemum vulgare	Oxeye daisy	61
Linaria vulgaris	Butter and eggs	69
Matricaria discoidea	Pineappleweed	32
Phleum pratense	Timothy	54
Plantago major	Common plantain	44
Poa annua	Annual bluegrass	46
Taraxacum officinale	Common dandelion	58
Trifolium hybridum	Alsike clover	57
Trifolium pratense	Red clover	53
Trifolium repens	White clover	59
Euphrasia nemorosa	Common eyebright	42

Source: ACCS 2019b

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LEGEND

- Snag
- Excavation Areas
- Approximate Pipeline Route
- Shrub/Herbaceous Wetland*
- Forested/Riparian Wetland*
- Approximate DOT ROW (150 feet)
- Alaska Chilkat Bald Eagle Preserve

*Based on a field assessment performed July 17, 2019. A formal wetland delineation has not been performed.

Alaska District
U.S. Army Corps of Engineers
Anchorage, AK

Habitat Types
Pipeline Milepost 17.7
Haines-Fairbanks Pipeline FUDS Alaska
Project #: F10AK1016-14

Figure 3	Date: August 2020

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3.3.1.2 Wildlife

The Chilkat River and its associated riparian forests, wetlands, and open waters provide habitat to an abundant and diverse wildlife assemblage, including mammals, birds, amphibians, and fish. The sections below provide a review of the fish and wildlife that occur in the project area. For details regarding Federally-protected fish and wildlife, see Section 3.3.1.4. For fish and wildlife that are considered state species of concern, see Section 3.3.1.5.

Mammals that frequent the surrounding mountain ranges include large populations of moose *(Alces alces)*, mountain goat *(Oreamnus americanus)*, brown bear *(Ursus arctos)*, and black bear *(Ursus Euarctos americanus)*. Mink *(Mustela vison),* beaver *(Castor canadensis)*, river otter *(Lontra canadensis)*, and muskrat *(Ondatra zibethicus)* use wetland habitats along the Chilkat River. Marten *(Martes americana)*, red squirrel *(Tamiasciurus hudsonicus)*, flying squirrel *(Glaucomys sabrinus)*, lynx *(Lynx canadensis)*, red fox *(Vulpes vulpes)*, Sitka deer *(Odocoileus hemionus sitchensis)*, and ermine *(Mustela erminea)* are found in the shrub and forests communities. Wolves *(Canis lupus)*, coyotes *(Canis latrans)*, and wolverines *(Gulo gulo)* occupy large ranges including the project area and a variety of habitat types.

Bats known to be in the region include the little brown bat *(Myotis lucifugis)*, Keen's long-eared bat *(Myotis keenii)*, long-legged myotis *(Myotis volans)*, California bat *(Myotis californicus)*, and the silver-haired bat *(Lasionycteris noctivagans)*. Bats in Alaska achieve their highest species diversity in the coastal rain forests of Southeast Alaska, where they are resident year-round. It is possible these bats use habitats in the project area for foraging or roosting.

The Chilkat Valley is part of the Pacific Flyway, a major waterfowl migration route to and from the interior of Alaska and Canada. The estuaries and wetlands along these migration routes are important habitats for many species including swans, shorebirds, geese, and ducks. The Chilkat River basin offers resting and molting areas to many of these birds.

Invasive Wildlife

Invasive wildlife are species that do not occur naturally in the Alaska ecosystem, but have become established and now pose a competition threat to existing native species. Currently, there are no known invasive fish or wildlife in the project area. Species that could reach the region are shown in Table 4.

Table 4. Invasive wildlife species in the region.

Scientific Name	Common Name	Concern
Didemnum vexillum	Didemnum tunicate	Highly invasive marine colonial tunicate established in Whiting Harbor near Sitka, AK
Rattus norvegicus	Norway rat	Predation pressure on Alaska wildlife, carry parasites, pathogens and diseases, and occur throughout Alaska
Rana aurora	Red-legged frog	Alter wetland algae abundance, occur only on Chichagof Island, approximately 80 miles south of the project area

Source: ADF&G 2019a

3.3.1.3 Wetlands and Waters of the U.S.

The National Wetland Inventory (NWI) mapper shows the presence of palustrine, emergent, persistent and semi-permanently flooded wetlands (PEM1F) in the project area (Table 5; NWI 2019). A reconnaissance-level evaluation of wetlands at the site found that these wetlands are more accurately

classified as palustrine, emergent, persistent and permanently flooded wetlands (PEM1H), and palustrine, forest, broad-leaf deciduous, seasonally flooded wetland (PFO1C) in or immediately adjacent to the project area. Seasonally-flooded cottonwood forested wetlands and emergent herbaceous wetlands are found in the excavation area.

Table 5. NWI wetland types and acreages

Wetland Type	Acres
Herbaceous Wetland (PEM1H)	0.32
Seasonally Flooded Black Cottonwood Forest (PFO1C)	0.98

Source: Tetra Tech 2019

Plant species in these wetlands include swamp horsetail *(Equisetum fluviatile)*, yellow pond lily *(Nuphar luteum)*, beaked sedge *(Carex rostrata)*, and marsh cinquefoil *(Potentilla palustris)*. Black cottonwood were reported to comprise the dominant overstory around these wetlands. Forested wetlands were comprised of black cottonwood, alder, Nootka rose, and meadow horsetail.

3.3.1.4 Federally Protected Species

There are no fish or wildlife listed under the Endangered Species Act (ESA) as regulated by the USFWS that could occur in the project area (USFWS 2019). Although the short-tailed albatross (Phoebastria albatrus) is listed as occurring in the Haines Borough, it is primarily an offshore seabird and would not be expected to fly up the Chilkat River as far as the project area.

Essential Fish Habitat (EFH)

The Magnuson-Stevens Act requires protection of Essential Fish Habitat (EFH), which is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." EFH in Alaska is identified in the Fishery Management Plan for Salmon developed by the North Pacific Fishery Management Council and approved by the Secretary of Commerce (NPFMC 2012). EFH areas are identified by water body, as catalogued by the Alaska Department of Fish and Game (ADF&G) (2014). This catalog lists the Chilkat River system, which includes Chilkat River Slough, as EFH for Chinook, Chum, Coho, Pink, and Sockeye Salmon, as well as Cutthroat Trout, Dolly Varden, Eulachon, Pacific Lamprey, Steelhead Trout, and Whitefish (ADF&G 2014). The Alaska EFH Mapper maintained by the NMFS further specifies the life stages that EFH is available for when queried by location (NMFS 2018, Table 6).

Table 6. Salmon species and life stages with EFH in the Chilkat River System

Common Name	Scientific Name	Immature	Juvenile	Mature
Chinook Salmon	*Oncorhynchus tshawytscha*	x		
Chum Salmon	*O. keta*	x	x	x
Coho Salmon	*O. kisutch*		x	x
Pink Salmon	*O. gorbuscha*		x	x
Sockeye Salmon	*O. nerka*	x	x	x

Source: NMFS 2018

EFH in the Chilkat River system, including Chilkat River Slough, is comprised of a variety of habitats, including spawning sites (suitable gravel and riffles), juvenile refugia (slower moving waters, deep ponds, areas that provide cover from predators), adult resting and refugia (deep pools, large woody debris and other cover areas). Food sources are provided by productive wetland and instream habitats and include

insect larvae and adults, other small invertebrates, zooplankton, and smaller fish. Chilkat River Slough offers adult fish passage and resting and refugia at moderate to high flows, and juvenile refugia and downstream passage at lower flows.

3.3.1.5 State Species of Concern

ADF&G identifies, monitors and manages the state species of fish and wildlife concern. ADF&G has prepared an Alaska Wildlife Action Plan, which provides an assessment of conservation concerns by species and prioritizes conservation actions and research (ADF&G 2015). In addition, ADF&G compiles a list of fish stocks that are of concern (ADF&G 2019b).

Numerous species have been listed in the Wildlife Action Plan as species of greatest conservation need for the southeast Alaska bioregion (ADF&G 2015). These include all of the Pacific salmon species that occur in the Chilkat River, as well as Pacific Lamprey, Dolly Varden, Rainbow Trout, Coastal Cutthroat Trout, and Steelhead (Tables 6 and 7). In addition, the ADF&G identified Chinook Salmon in the Chilkat River as a management concern to the Alaska Board of Fisheries in 2017, since the stock is unable to reach escapement objectives (ADF&G 2019b). A search of the ACCS Conservation Data Portal shows that four additional species of concern have been observed in the project area (ACCS 2019c, Table 7). However, recorded observations are not recent (Table 7). All state species of concern for the project area are shown in Table 7.

Table 7. State of Alaska species of concern for the project area

Common Name	Scientific Name	Date of Most Recent Observation
Fish		
All Pacific Salmon listed in Table 6	*Oncorhynchus* spp.	Current
Pacific Lamprey	*Entosphenus tridentate*	Current
Dolly Varden	*Salvelinus malma*	Current
Rainbow trout and steelhead	*O. mykiss*	Current
Coastal Cutthroat Trout	*O. clarki*	Current
Wildlife		
Alexander Archipelago wolf	*Canis lupus ligoni*	Unknown
Olive-sided flycatcher	*Contopus cooperi*	1991
American water shrew	*Sorex palustris*	1981
Rusty blackbird	*Euphagus carolinus*	1985

Source: ADF&G 2019b

3.3.1.6 Alaska Chilkat Bald Eagle Preserve

The Preserve was established in 1982 (Alaska Statutes § 41.21.610 – 630). The nearly 49,000-acre Preserve is managed under the guidelines of the Preserve Management Plan (ADNR 2002b). The statute established the Preserve as part of the state park system with the primary purpose of protecting and perpetuating the Chilkat bald eagles and their essential habitats. The Preserve is also statutorily intended to (1) protect salmon and their habitats, (2) provide continued opportunities for research, study and enjoyment of bald eagles and other wildlife, (3) protect water quality and quantity, (4) provide for other public uses consistent with the primary purpose, and (5) provide for the continued traditional and natural resource-based lifestyle of the people living in the general areas.

Bald eagles inhabit the forests along the Chilkat River valley where 200-400 adults may be year-round visitors (ADOT&PF 2019). From October to December, visiting bald eagles congregate along the Chilkat River in numbers that have reached as many as 4,000, and include individuals that have traveled from as

far as Washington State (ADF&G 2019c). During this time of the year, when most other rivers and lakes have iced over, the low winter flows of the Chilkat River are augmented by relatively warm groundwater seeps that rise from the alluvial fan of the Tsirku and Chilkat Rivers confluence (Bugliosi 1988). These warm seeps open leads between iced sections of the rivers and provide access to salmon in free-flowing waters well into the winter months. Late-season salmon runs draw thousands of bald eagles to the stretch of the Chilkat River between Haines Highway MP 18-21, designated as a State Critical Habitat Area known as the Council Grounds (ADF&G 2019c). The latest salmon spawning in southeast Alaska occurs in the Chilkat River from September through January (NPFMC 2012). Eagles remain at the Council Grounds through February to feed on remaining salmon carcasses and begin laying their eggs in mid-May. The nearest bald eagle nest is approximately 0.5 mile from the project area.

3.3.2 Environmental Consequences

Biological resources may be directly affected by disturbances from excavation and transportation of contaminated materials, habitat loss or degradation, and direct exposure to toxic levels of contaminated materials. They may also be indirectly affected if project actions result in loss of prey species or other conditions that affect their ability to forage or reproduce.

An issue for evaluation in this EA is whether the proposed action would increase the potential for POL contaminants in the soils and groundwater of the study area to accumulate in the tissues of plants, fish, wildlife, or humans that may be in the area. This process, referred to as bioaccumulation, is the process through which certain types of contaminants that are ingested by plants, fish, or wildlife are stored in their tissues and passed along to organisms higher on the food chain, resulting in concentrations of these substances in the higher-order predators and consumers. These types of impacts are particularly important given that the project area is adjacent to the eagle preserve. The project area is also within a region that may be used for subsistence hunting and gathering by local residents.

Impacts associated with biological resources could occur if an alternative resulted in any of the following:

- Loss or degradation of plant or animal communities;
- Destruction or alteration of habitat;
- Interruption of normal breeding behavior; or
- Introduction or spread of an invasive species.

3.3.2.1 Alternative 1 No Action Alternative

If there are no remediation measures implemented at the site, POL contamination present in soil and groundwater would persist for the foreseeable future. The leak occurred over 50 years ago and vegetation in the area has recovered. Trees with stunted growth patterns are remnants from the original spill in 1968 and are localized. No new adverse effects to vegetation are anticipated.

POL contaminants that are found in the soil may adversely affect soil flora and fauna by reducing available oxygen and access to soil nutrients. Soil flora and fauna, including fungi, algae, lichen, or invertebrates, have likely adapted to low petroleum contaminant concentrations in the affected area, but suppression of populations of these species is likely in areas with higher contaminant concentrations. These impacts would not be likely to have a significant adverse effect on the surrounding ecosystem, since the contaminated area is relatively small and localized.

If contaminants move into the water column and the sediment of the Chilkat River Slough in significant concentrations, it is possible that macroinvertebrates, juvenile fish, insect larvae, and other biota in the

waters and sediments could be adversely affected. Contaminants that may be present in the project area groundwater and soils include benzene and xylene, which can produce a narcotic (sleepy) effect in organisms with which they come into contact. This effect could lead to impaired ability to forage, avoid predators, or navigate out of hazardous currents. However, the groundwater seep area is small and localized compared to normal flows in the Chilkat River, so seep water that reaches open slough waters would quickly become diluted to non-detectable, harmless concentrations. Although xylenes have been classified as non-toxic to moderately toxic to fish, the concentration of total xylenes measured in the groundwater seep (0.12 mg/L) is more than an order of magnitude lower than an acutely toxic concentration of p-xylene (the most toxic xylene isomer) in Rainbow Trout (2.6 mg/L) (Duan 2017). Therefore, these types of effects are unlikely to affect aquatic species, and any impacts would be less than significant.

Although it is possible that salmon or other fish and wildlife species are consuming prey items that have been exposed to contaminants in the slough, it is unlikely that the contamination is resulting in impacts associated with bioaccumulation through the aquatic food chain. This determination is made based on the following three reasons: (1) Most contaminants of concern in the groundwater seep do not bioaccumulate, meaning they are not stored in living tissue at concentrations substantially greater than found in surrounding air, soil, water, or food. As indicated in EPA guidance, benzene and xylenes are not bioaccumulative, therefore uptake of site contaminants into aquatic organisms that might be used as food, such as fish, is not a factor of concern (US EPA 2018). In fact, none of the contaminants detected at the project location (i.e. benzene, ethylbenzene, xylenes, 1-methylnaphthalene, naphthalene, GROs, and DROs) are bioaccumulative compounds. Bald eagles that rely on salmon consumption in the area would not be exposed to harmful levels of site contaminants, nor are they likely to experience any noticeable decrease in availability or quality of food items, for the reasons explained above, (2) The contaminated seep portion of the bank of the slough is very small compared to the overall availability of foraging area in the Chilkat River and Chilkat River Slough, and (3) Contaminants have not been detected in flowing slough surface water above human health (ADEC Water Quality Standards) or ecological screening levels (NOAA SQuiRTS Chronic Surface Water).

3.3.2.2 Alternative 2 Institutional Controls and Monitored Natural Attenuation

This alternative would result in similar impacts as the No Action Alternative. Installation of signs would require minor and temporary activity at the project site, likely lasting only two to three days. No vegetation would be removed to install signage. This alternative would result in a small amount of fill in wetlands where signposts would be placed, but this effect would be minor.

3.3.2.3 Alternative 3 Source Excavation and Monitoring

The presence of heavy machinery and personnel could disturb terrestrial wildlife species, causing birds and mammals to disperse. Construction would occur during avian nesting periods and may affect birds protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). Any necessary clearing/grubbing of brush or trees would occur outside the spring breeding season, thereby avoiding direct impacts to MBTA-protected species to the extent practicable. If clearing is necessary within the spring breeding season, a qualified professional biologist would survey the area for nesting birds prior to clearing. The closest mapped eagle nest is approximately 0.5 mile away, and would not be affected by noise or other types of disturbance during construction.

Common wildlife species that may forage at the site, including moose and bear, would likely avoid the site during the construction period. As this effect would be temporary and would not affect any sensitive

habitat types such as wintering grounds or calving areas, and there are adequate alternative forage opportunities in the immediate vicinity, this effect would be less than significant.

The project footprint does not extend into the Chilkat River Slough. However, the initial disturbance of soils in the excavation area may cause a temporary spike in movement of contaminants through the groundwater towards Chilkat River Slough, and soil disturbance in the excavation area could increase the risk of erosion and deposition of sediment into Chilkat River Slough. Increased turbidity in Chilkat River Slough would reduce habitat quality for juvenile fish by reducing visibility and possibly impairing respiration. Increased sedimentation could affect anadromous fish spawning by depositing fines in redds and possibly reducing the amount of dissolved oxygen that is available to developing eggs. These impacts would be addressed by implementation of a SWPPP, which would specify measures to control runoff, contain sediments within the construction area, and reduce the potential for erosion. The project site would also be recontoured after the excavation and backfilling was completed, and erosion control measures such as layers of straw or jute netting would be installed to keep eroded soils from depositing into Chilkat River Slough.

Excavation would result in temporary fill of emergent and forested wetland vegetation. The project area has not been delineated for jurisdictional wetlands, but the presence of standing water in vegetated portions of the project site strongly suggests that wetlands are present. Where backfill is placed in excavations that have extended into wetlands, that fill would constitute a discharge under Section 404 of the Clean Water Act (CWA). The USACE does not issue itself CWA permits for its activities but incorporates by reference (in accordance with 40 CFR 1502.21) the analyses under NEPA and CWA Section 404(b)(1) performed for the issuance of Nationwide Permit No. 38 Cleanup of Hazardous and Toxic Waste. The State of Alaska certified the full list of Nationwide Permits (NWPs) issued by the USACE in 2017, so no separate Section 401 Certificate of Reasonable Assurance is required for such removal actions.

The removal of chemical contaminants from the project site is a remedial action that benefits the overall environment. The USACE anticipates no long-term significant loss to local wetland habitat or function as a result of the proposed project under this alternative. Natural revegetation is anticipated to occur rapidly in new soils and over time there would be no discernible change in vegetation or wildlife use of the area.

Operation of the treatment facility or landfill where the soils are deposited may result in noise and disturbance that would cause wildlife to avoid the area. However, both types of facilities are established, and similar practices are ongoing, therefore this would not be a new effect, and would be less than significant.

Given that erosion would be controlled by measures included in a SWPPP covering the excavation area, the potential for sedimentation or turbidity in adjacent waterbodies would be minimal, and this impact would be less than significant.

There would be no significant impacts to biological resources as a result of Alternative 3.

3.3.2.4 Alternative 4 Source Excavation, In-situ Treatment, and Monitoring (Preferred Alternative)

Effects to fish and wildlife resources resulting from this alternative are comparable to Alternative 3. Construction impact avoidance measures will ensure that no sensitive fish or wildlife species will be substantially disturbed. Direct impacts to wetlands will be the same as under Alternative 3.

The treatment materials planned to be applied include ORC and GAC. These materials are non-toxic and are intended to promote the growth of aerobic bacteria populations in the contaminated area and mitigate migration of contaminated groundwater toward the Chilkat River Slough. Surfactants, nutrients, and bacterial augmentation will not be used for treatment because of the potential for water quality impacts in wetland areas and waterways. The addition of treatment materials to the backfill soils during construction and/or additional use periodically in the future through injection will temporarily elevate oxygen concentrations in the subsurface but will not result in significant adverse effects to biological resources.

3.4 Cultural Resources

3.4.1 Affected Environment

There are no known cultural resources within the project's Area of Potential Effect, and none that have been found to be eligible for listing under the National Register of Historic Places (NRHP). The nearest eligible property is the Chilkat River-Haines Highway Bridge, located at MP 23.8. Although construction equipment may pass over this bridge, it is designed for such use, and it will not be adversely affected by the proposed action. A letter stating the finding of "No historic properties affected" (36 CFR 800.4(d)(1)) was prepared by the USACE and concurred with by the SHPO as part of the consultation and coordination for this EA (Appendix A).

3.4.2 Environmental Consequences

As there are no known cultural resources in the project area, no impacts to cultural resources are anticipated as a result of any of the evaluated alternatives. During construction, if any previously unknown cultural resources were encountered, construction would immediately cease, and the appropriate agencies would be notified. USACE would consult with the SHPO, the Chilkoot Indian Association and Chilkat Indian Village, and other agencies as needed to determine how to address the newly discovered cultural resources. Specific measures that the USACE would implement if previously unknown historic or prehistoric properties were encountered during excavation are listed in Section 2.2.7.3. Impacts associated with subsistence uses and socioeconomics are discussed in Section 3.5 below.

3.5 Economy and Subsistence, Socioeconomics and Environmental Justice

3.5.1 Affected Environment

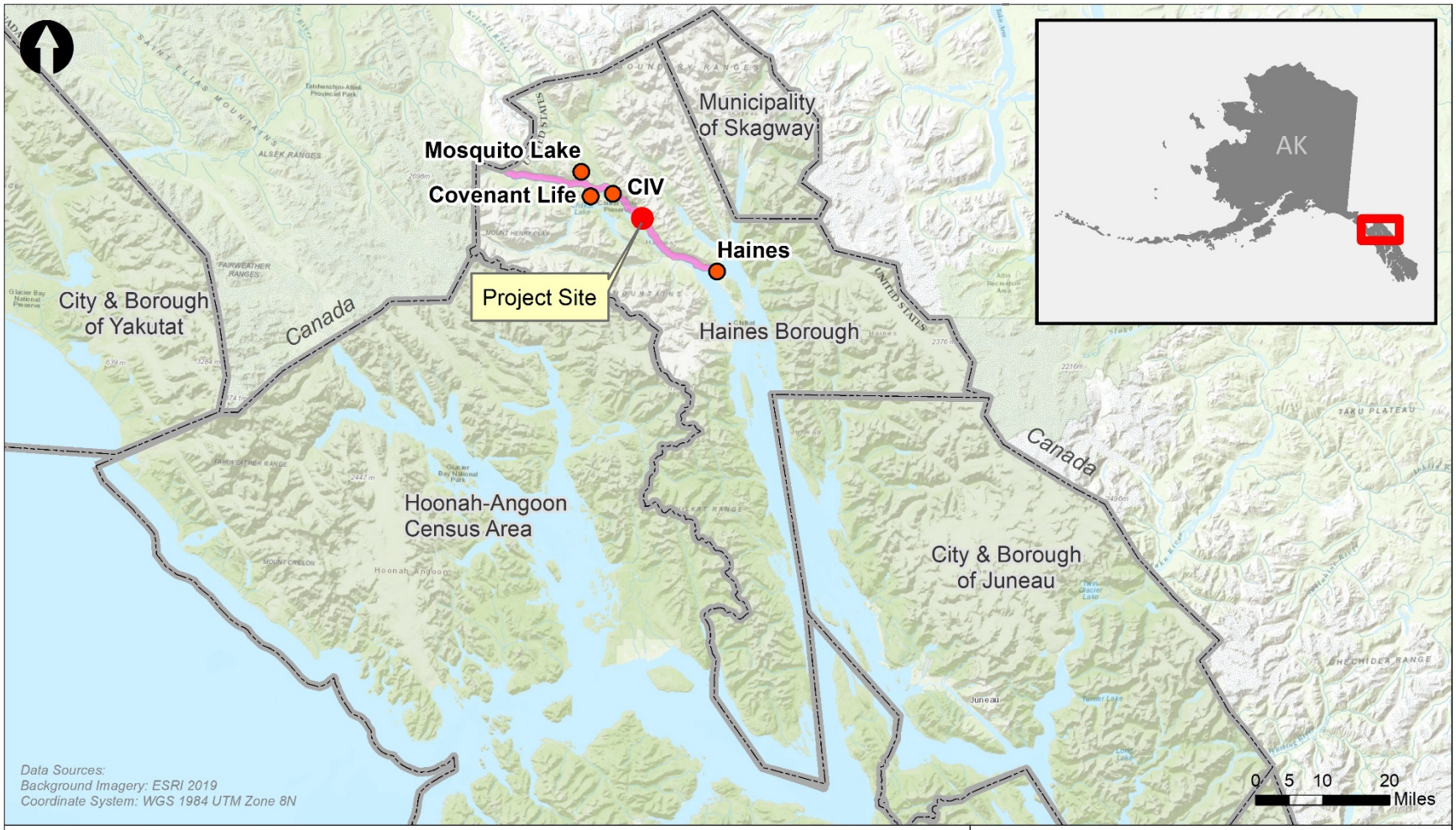
Due to the regional importance of subsistence activities, this characterization of socioeconomic conditions in the study area considers both the wage economy and subsistence economy in the Haines Borough. Under Alaska and Federal law, subsistence is defined as customary and traditional, non-commercial uses of wild resources for a variety of purposes. The uses include harvest and processing of wild resources for food, clothing, fuel, transportation, construction, arts, crafts, sharing and customary trade. Subsistence supports a major part of Alaska’s economy and culture, where traditional cultures and subsistence economies operate alongside the modern wage economy. Thus, while the statewide volume of subsistence harvest may be small relative to commercial harvest for valuable resources such as salmon, the need to preserve resource quality and availability is highly important to the viability of traditional cultures and subsistence economies.

Key data sources in this analysis include the U.S. Census American Community Survey (ACS), the Community Database Online (CDO) published by Alaska Department of Commerce, Community, and Economic Development, the Community Subsistence Information System (CSIS) published by the

ADF&G, and socioeconomic products from the Alaska Department of Labor and Workforce Development Research and Analysis division.

This section is organized into three primary subsections. The socioeconomic profile focuses on demographics and the wage economy (employment and income). The subsistence discussion characterizes subsistence activity and harvest in the study area. The section concludes with an assessment of the presence of minority and/or low-income populations in the study area to support evaluation of compliance with environmental justice regulations when evaluating the alternatives.

For this analysis, the geographic region of interest was limited to the Haines Borough, with emphasis on the communities nearest the project site, including Klukwan, Covenant Life, Mosquito Lake, and Haines, referred to in subsequent sections as being in the project vicinity (Figure 4). In the following subsections, data is presented at the community level for the various socioeconomic indicators. Additionally, an aggregated project vicinity data point is provided based upon a weighted average across the communities comprising the project vicinity. Given that Haines is the largest community in the vicinity, it has the largest effect on these weighted results.



LEGEND

- Communities
- Haines Highway
- Borough and Census Area boundaries

Alaska District
U.S. Army Corps of Engineers
Anchorage, AK

Socioeconomic Study Area
Pipeline Milepost 17.7
Haines-Fairbanks Pipeline FUDS Alaska
Project #: F10AK1016-14

Figure 4	Date: August 2020

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3.5.1.1 Socioeconomic Profile

Setting

The socioeconomic study area is the Haines Borough and Native lands within the same geographic extent. The study area emphasizes the geographic areas along the Haines Highway and nearest to the project site, which is 15 miles north of Haines along the Haines Highway. The borough is a consolidated municipal government that represents several unincorporated communities. While there are no incorporated cities in the borough, there are unincorporated communities at Haines, Covenant Life, Lutak, Mud Bay, Mosquito Lake, and Excursion Inlet (a major regional fish cannery). Haines is the largest community in the borough, with about 70% of its total population. The communities of Covenant Life and Mosquito Lake are located further north along the highway, 12 and 13 miles from the project site, respectively. While they are within the borough, Lutak, Mud Bay, and Excursion Inlet are not located along the Haines Highway and are given less emphasis in this analysis.

There are two recognized tribal groups in the area. The Chilkoot Indian Association is a Federally recognized tribe located within the community of Haines, whose socioeconomic characteristics are included as part of the community of Haines and the larger borough for Census purposes because the tribe is incorporated into the borough's jurisdiction. The second tribal group, the Chilkat Indian Village (CIV), is a traditional Tlingit village and a Federally recognized tribe whose Native lands are not incorporated into the larger borough. CIV lands are surrounded by, but not part of, the Haines Borough, and as such its socioeconomic characteristics are tabulated separately from the borough in the Census. CIV is located six miles north of the project site along the Haines Highway.

These communities have a rural setting, with the only road access via the Haines Highway. Residents in the area enjoy ready access to public lands for subsistence, hunting, fishing, and recreation (ADOT&PF 2016).

Population and Housing

The Alaska Population Estimates and the Population Projections datasets are maintained and published by the State of Alaska Department of Labor and Workforce Development Research & Analysis. Published data through 2018 (AKDLWD 2019) was reviewed to compile population estimates for Haines Borough and CIV since 2010. Population projections for the region are published at the borough level, which is expected to experience a 20% decline in total population over the next twenty years. While job growth in remote regions of the state is often slow, this projected decline is also informed by larger regional and statewide trends associated with the Alaska Recession, which has resulted in regional job losses and net outmigration, especially among working age residents of larger communities in Southeastern Alaska, such as Juneau (Southeast Conference 2018). These trends are also reflected in population age. The median age for the population in the vicinity of the project is generally high when compared to the statewide median age of 33.9. The median ages in the communities of Haines, CIV, Mosquito Lake, and Covenant Life are 45, 57.5, 58, and 70.4, respectively (ACS 2019). Table 8 presents population history for the 2010 to 2018 period.

Table 8. Population History, 2010-2018

Geography	Population								
	2010	2011	2012	2013	2014	2015	2016	2017	2018
Haines Borough	2,508	2,612	2,612	2,531	2,551	2,492	2,464	2,458	2,480
Haines	1,713	1,799	1,822	1,808	1,811	1,766	1,738	1,735	1,755
Mosquito Lake	309	314	293	269	266	255	257	266	280
Mud Bay	212	208	211	198	184	192	195	204	206
Covenant Life	86	84	83	64	72	71	58	69	53
Lutak	49	50	56	67	79	65	71	62	60
Excursion Inlet	12	16	12	8	9	9	14	12	13
Dispersed	127	141	135	117	130	134	131	110	113
CIV	99	100	96	96	88	96	98	96	98
Borough and CIV	2,607	2,712	2,708	2,627	2,639	2,588	2,562	2,554	2,578
Project Vicinity*	2,207	2,297	2,294	2,237	2,237	2,188	2,151	2,166	2,186
Source: AKDLWD 2019. *Includes Haines, Mosquito Lake, Covenant Life, and CIV.									

Table 9 characterizes housing in the study area in terms of total housing units, owner-occupied rate and vacancy rate. Households and families are characterized in Table 10 in terms of total households, proportion of family households, and average household and family size. As shown in the tables, the community of Haines exhibits vacancy and owner-occupied rates approaching statewide levels, which is expected given Haines' larger relative size. The more remote communities near the project site tend toward higher vacancy rates. When considering households and families, the data shows that the communities in the vicinity have lower average household and family sizes that observed at the state level. This is indicative of a generally older population with fewer families, which is consistent with the higher than average median age in the region previously noted.

Table 9. Housing Units

Geography	Total Housing Units	Vacancy Rate (%)	Owner-occupied Rate (%)
State of Alaska	313,937	19.6	63.7
Haines Borough	1,619	32.9	70.7
Haines	1,024	21	68.1
Mosquito Lake	165	29.7	100
Mud Bay	138	58.7	82.5
Covenant Life	47	51.1	56.5
Lutak	39	30.8	100
Excursion Inlet*	11	100	No data
CIV	65	50.8	75.0
Project Vicinity**	1,301	24.7	72.1
Source: AKDLWD 2019. *Excursion Inlet's main use is a cannery. The seasonal nature of the population distorts housing occupancy information. **Rates are weighted by total housing units and include Haines, Mosquito Lake, Covenant Life, and CIV.			

Table 10. Households and Families

Geography	Total Households	Family Households (%)	Average Household Size	Average Family Size
State of Alaska	252,536	66.6	2.81	3.39
Haines Borough	1,087	55.2	2.27	2.84
Haines	809	54.3	2.26	2.88
Mosquito Lake	116	34.5	2.06	2.98
Mud Bay	57	82.5	2.12	2.36
Covenant Life	23	56.5	1.57	2.00
Lutak	27	100	5.44	4.00
Excursion Inlet*	0	-	-	-
CIV	32	59.4	1.94	2.47
Project Vicinity**	980	52.2	2.21	2.86

Source: AKDLWD 2019. *Excursion Inlet's main use is a cannery. The seasonal nature of the population distorts housing occupancy information. **Rates and averages are weighted by total households and includes Haines, Mosquito Lake, Covenant Life, and CIV.

Race

The American Community Survey 2017 dataset (ACS 2019) provides the most up-to-date race and ethnicity information for the study area. Table 11 presents a summary of race by community and at the borough and community levels. The data in the table reflects the Census definition for "race alone or in combination with one or more races," which provides an inclusive summary of race by reflecting that some people identify with more than one race. Note that the U.S. Census Bureau defines Hispanic or Latino populations as an ethnicity. Because just 2.8% of the borough identifies as having Hispanic or Latino ethnicity, this data is not presented in the table.

Table 11. Summary of Race

Geography	Population Race (%)*					
	White	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some other race
State of Alaska	72.8	4.9	19.6	8.1	1.9	1.9
Haines Borough	86.4	1.0	12.6	4.9	0.4	1.5
Haines	84.6	1.4	15.1	4.2	-	1.0
Mosquito Lake	100	0	9.2	0	0	0
Mud Bay	100	0	0	8.3	0	0
Covenant Life	100	0	36.1	0	0	0
Lutak	100	0	0	0	0	0
Excursion Inlet	56.5	0	8.7	23.9	23.9	0
CIV	17.7	0	88.7	0	0	0
Project Vicinity**	83.9	1.1	18.2	3.4	0	0.8

Source: ACS 2019. *Reflects populations identifying as one or more races; rows may sum to over 100%.
**Average weighted by population that includes Haines, Mosquito Lake, Covenant Life, and CIV.

As summarized in the table, the borough has a higher proportion of white residents and lower proportion of Alaska Native residents as compared to statewide data. However, when examining those populations near the project site, the proportion of Alaska Native residents approaches one-fifth of the population, in the same range as seen at the state level.

Employment and Income

Discussion of employment and income relies upon data from the American Community Survey (ACS 2019). The cash economy in the Haines borough has multiple key drivers, such as tourism, seafood processing, mining, forest products, healthcare, and government services. For example, Haines is a port of call for Alaskan cruises, and the Haines Highway and adjacent natural resources draw tourists to the region throughout the year, supporting jobs across the retail, recreation, accommodation and other related industries. This section characterizes regional employment and income in terms of employment status, occupation (broad categories for type of work), industry, and class of worker (sector).

Table 12 presents unemployment and income information for the civilian labor force (civilians who are either employed or unemployed but desire to work). Given small sample sizes and data availability, this information is most consistently available only for the communities of Haines and CIV. As shown in the table, median household and family income for residents near the project site are marginally lower than at the state level, though a lower unemployment rate contributes to per capita income which marginally exceeds the state level. However, the data by community shows that the low unemployment and higher relative income levels in Haines contrast with a high unemployment rate and lower relative income levels in CIV, as compared to the borough and state.

Table 12. Employment Status and Income by Community

Geography	Civilian Labor Force	Unemployment Rate (%)	Median Household Income ($)	Median Family Income ($)	Per Capita Income ($)
State of Alaska	383,593	7.70	76,114	88,949	35,065
Haines Borough	1,477	2.7	70,640	75,000	35,907
Haines	1,154	3.5	76,506	76,920	38,056
Mosquito Lake	53	0	36,765	not reported	27,723
Mud Bay	64	0	120,568	121,705	49,809
Covenant Life	10	0	not reported	not reported	28,169
Lutak	66	0	not reported	not reported	7,848
Excursion Inlet	46	0	not reported	not reported	69,735
CIV	32	12.5	42,500	54,375	23,827
Project Vicinity*	1,249	3.6	73,928	76,312	37,174
Source: ACS 2019. *Average weighted by labor force that includes Haines, Mosquito Lake, Covenant Life, and CIV.					

Table 13 presents a summary of employment by occupation, and Table 14 presents a summary of employment by industry. Finally, Table 15 presents the employed population by class of worker. At the borough level, the proportion of employment by occupation is consistent with statewide trends, with small variations at the margin. However, this similarity is largely driven by the effect of Haines, a larger community with a more diverse cash economy. Within other individual communities, occupations differ from the average. In CIV, for example, there is higher prevalence of Service occupations and a much lower prevalence of Sales and office occupations. This is similarly described when considering class of worker in CIV, which shows a much larger proportion of self-employed workers, moderately larger proportion of government employees, and much lower proportion of private wage/salary works, when compared to the borough or the state. Finally, the employment by industry data reflects the remote and rural nature of the communities outside of Haines, with fewer total jobs spread across a smaller set of industries, and lack of activity in infrastructure-heavy industries such as construction, manufacturing, and wholesale trade, as well as lack of activity in professional industries such as information, finance, etc. Industries instead tend to focus on service of residents (public administration, education), as well as service of tourists (arts, recreation, retail).

Table 13. Occupation by Community

Geography	Employment by Occupation (%)				
	Management, business, science, and arts occupations	Service occupations	Sales and office occupations	Natural resources, construction, and maintenance occupations	Production, transportation, and material moving occupations
State of Alaska	36.7	17.3	22.7	12.3	10.9
Haines Borough	36.6	18	21.7	11.2	12.5
Haines	36.5	15.9	26.8	8.6	12.2
Mosquito Lake	37.7	22.6	17	0	22.6
Mud Bay	89.1	0	0	0	10.9
Covenant Life	0	100	0	0	0
Lutak	40.9	0	0	59.1	0
Excursion Inlet	32.6	32.6	10.9	10.9	13
CIV	39.3	32.1	7.1	10.7	10.7
Project Vicinity*	36.3	17.3	25.7	8.2	12.5
Source: ACS 2019. *Average weighted by labor force that includes Haines, Mosquito Lake, Covenant Life, and CIV					

Table 14. Industry by Community

Geography	Employment by Industry (%)												
	Agriculture, forestry, fishing,	Construction	Manufacturing	Wholesale trade	Retail trade	Transportation and warehousing,	Information	Finance, insurance, real estate, rental	Professional, scientific,	Educational services, health	Arts, entertainment,	Other services, except public	Public administration
State of Alaska	5.2	7.4	3.6	1.9	11	8.1	2.1	3.7	8.4	23.7	9.1	4.2	11.6
Haines Borough	9.2	7	3	1.2	13.5	4.8	1.5	3.4	9	24	16.2	0.7	6.4
Haines	11	9.1	0.2	0.3	16.3	5.8	0.9	2.5	10.1	24.4	11.1	0.1	8.3
Mosquito Lake	0	0	0	0	22.6	0	22.6	0	0	15.1	22.6	17	0
Mud Bay	0	0	10.9	21.9	0	0	0	0	18.8	37.5	10.9	0	0
Covenant Life	0	0	0	0	0	0	0	0	0	100	0	0	0
Lutak	0	0	0	0	0	0	0	0	0	0	100	0	0
Excursion Inlet	21.7	0	34.8	0	0	8.7	0	0	13	10.9	10.9	0	0
CIV	0	0	0	0	0	7.1	0	0	14.3	32.1	10.7	21.4	14.3
Project Vicinity*	3.5	2.9	0.1	0.1	12.7	4.3	7.8	0.8	8.2	24	14.8	13.1	7.6
Source: ACS 2019. *Average weighted by labor force that includes Haines, Mosquito Lake, Covenant Life, and CIV													

Table 15. Class of Worker by Community

Geography	Employment by Class of Worker (%)			
	Private wage and salary workers	Government workers	Self-employed	Unpaid family workers
State of Alaska	68.3	25.2	6.3	0.2
Haines Borough	65.7	21.1	12.4	0.8
Haines	63.3	24.3	12.4	0
Mosquito Lake	62.3	15.1	22.6	0
Mud Bay	32.8	37.5	10.9	18.8
Covenant Life	100	0	0	0
Lutak	100	0	0	0
Excursion Inlet	100	0	0	0
CIV	32.1	35.7	32.1	0
Project Vicinity*	52.2	25.2	22.6	0
Source: ACS 2019. *Average weighted by labor force that includes Haines, Mosquito Lake, Covenant Life, and CIV				

3.5.1.2 Subsistence

In the Native communities of southeast Alaska, subsistence economy participants continue a tradition of harvest and use of wild resources that predates the introduction of cash income. In the modern era, beginning in the late 1700s, the economies of Native communities have undergone a progressive transformation, incorporating cash income into the subsistence-based system. Southeast Alaska communities settled primarily by non-Native immigrants have also depended on a mix of subsistence use of wild resources and cash income. Cash income in most southeast Alaska rural communities is limited and intermittent, a function of a relatively stagnant population and related slow growth in jobs. Cash income often supports the purchase of fuel and equipment that are used to engage in subsistence activities. Subsistence harvests have been found to fill essential food needs in most rural communities in the region. These harvests are also customarily shared among community residents and between members of different communities. Some subsistence products or related byproducts are traded and bartered within the region. Subsistence harvests are not geared toward market sale or accumulated profit, though there is a cash market for the sale of handmade Native art, which often utilize byproducts of subsistence harvest. A mixed subsistence-market economy in which subsistence harvests and cash income is complementary characterizes the economies of most of the region's rural communities (USACE 2002).

While residents throughout the borough may participate in subsistence harvest, the two communities with published profiles in the ADF&G Community Subsistence Information System (ADF&G 2019d) are Haines and Klukwan (CIV). For each community profile, the database identified a representative year, which corresponds to a year in which a comprehensive survey was performed for the community. These comprehensive surveys are performed infrequently, often less than once per decade. However, they usually provide the best characterization of all subsistence activity within a community. For Haines and CIV, the representative years are 2012 and 1996, respectively. As shown in the table, CIV has a larger dependence upon fish, with 85% of total harvest, whereas in the community of Haines, fish is 62% of total harvest. Using 2018 population data, the per capita harvest in the Haines community is approximately 148 pounds per person (Table 16). In contrast, the per capita harvest in CIV would be approximately 691 pounds per person, illustrating the importance of subsistence in CIV, as well as indicating that reliance upon subsistence can vary substantially from community to community.

Table 16. Representative Subsistence Harvest Summary

Type	Representative Annual Harvest			
	Haines (2012)		CIV (1996)	
	Pounds	%	Pounds	%
Salmon	89,526	34%	29,715	44%
Non-Salmon Fish	72,535	28%	28,095	41%
Large Land Mammals	53,827	21%	3,050	4.5%
Marine Invertebrates	22,837	8.8%	1,557	2.3%
Plants and Berries	19,136	7.4%	4,918	7.3%
Migratory Birds	1,287	0.5%	65	0.1%
Other Birds	452	0.2%	42	0.1%
Small Land Mammals	356	0.1%	6	0.01%
Marine Mammals	0	0%	293	0.4%
Bird Eggs	0	0%	0	0%
Total	259,956	100%	67,741	100%
Source: ADFG 2019				

3.5.1.3 Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, signed by the President on February 11, 1994, directs Federal agencies to take appropriate and necessary steps to identify and address disproportionately high and adverse effects of Federal projects on the health or environment of minority and low-income populations.

To evaluate compliance with Executive Order 12898, definitions of low-income and minority populations are borrowed from the U.S. Department of Transportation Updated Environmental Justice Order 5610.2(a) (USDOT 2012). For this analysis, minority populations are those of specific race/ethnicity, including Black, Hispanic, Asian American, American Indian, and Alaskan Native. Low-income populations are readily identifiable groups of low-income residents living in close proximity or dispersed low-income residents that would be similarly affected by the project.

Minority Populations

As previously presented in section 3.5.1.1 and in Table 11, the largest minority population in the vicinity of the project is Alaskan Native. Communities with a concentration of Alaska Natives which substantially exceeds the borough and state levels include Covenant Life and CIV, CIV being nearly 90% Alaskan Native. However, because Covenant Life residents are primarily white, it was not identified as a minority population. Because CIV residents are primarily Alaskan Native, CIV was identified as a minority population for evaluating compliance with environment justice regulations.

Populations in Poverty

There are two primary Federal poverty measures. The Department of Health and Human Services (DHHS 2019) publishes poverty guidelines, which are used for administrative purposes to determine eligibility for Federal need-based assistance programs and are a simplified version of the U.S. Census Bureau's poverty thresholds. However, the DHHS guidelines include an adjustment for Alaska which better reflects Alaska's generally high cost of living compared to the rest of the country, though still does not consider the difference in cost goods in Alaska's larger cities as compared to rural and remote communities. In recent years, income limits in the poverty guidelines for Alaska have been about 25% higher than national poverty thresholds. Table 17 presents these income limits for 2019 poverty guidelines.

Table 17. DHHS Poverty Guidelines for Alaska

Persons in Family/Household	Poverty Guideline ($)
1	$15,600
2	$21,130
3	$26,660
4	$32,190
5	$37,720
6	$43,250
7	$48,780
8	$54,310
Source: DHHS 2019. For families/households with more than 8 persons, add $5,530 for each additional person.	

While the DHHS thresholds are useful for understanding the effects of a higher cost of living in Alaska, there is no dataset available which describes the occurrence of poverty in the study area according to these guidelines. The best available data on the occurrence of poverty comes from the American Community Survey (ACS 2019), which uses the Census Bureau's poverty thresholds and is not adjusted for Alaska.

Given the use of the poverty thresholds, the ACS-estimated poverty rates may be lower than the rates that would be calculated if the DHHS rates were utilized. Additionally, the component which neither the DHHS nor the ACS poverty measure addresses is the effect of subsistence. Because consumption of subsistence harvest can offset the need for cash income that would have been used to purchase substitute goods, subsistence participation makes Federal poverty measures less indicative of actual resource needs. While detailed estimation of the dollar value of subsistence harvest in the study area is beyond the scope of this analysis, the following example for CIV illustrates its significance. Assuming an average value of $3-10 per pound for all subsistence harvest (e.g. cost of a substitute meat at a grocery store), and using CIV's annual harvest (Table 16), the per capita cash value of subsistence harvest consumed in CIV would be between $3,500 and $7,000 per year.

As such, the poverty levels reported below should be understood as a metric for understanding poverty broadly and for the purpose of measuring compliance with environmental justice requirements, rather than an attempt to identify actual resource needs within the community. Table 18 presents several measures of poverty from the ACS dataset. Based on the ACS data, the Haines borough has moderately less poverty than the state as a whole, and the community of Haines has very low poverty. The poverty levels in CIV are higher than Haines, but still below the overall borough or state levels, and the aggregated estimate for the project area is similarly low. It is the community of Lutak, which is a small development north of Haines near Chilkoot Lake, which drives up average value for the region. Based on this data, no low-income communities or populations were identified for the purposes of evaluating environmental justice compliance.

Table 18. Summary of Populations below Poverty Threshold

Geography	Population Meeting Poverty Threshold	
	All people (%)	All families (%)
State of Alaska	10.2	6.9
Haines Borough	8.4	6
Haines	3.2	2.1
Mosquito Lake	10.9	0
Mud Bay	0	0
Covenant Life	0	0
Lutak	73.5	100
Excursion Inlet	0	Not reported
CIV	6.5	5.3
Project Vicinity*	4.3	2
Source: ACS 2019. *Average weighted by total population or by total families, includes Haines, Mosquito Lake, Covenant Life, and CIV.		

3.5.2 Environmental Consequences

An alternative would cause a significant socioeconomic impact if it would result in any of the following:

- Substantial effects on the human population, community cohesion, or community facilities and services;
- Substantial effects on the economic viability of the region, including effects on the availability of jobs and viability of local businesses; or
- Substantial effects on the quality and availability of subsistence resources.

3.5.2.1 Alternative 1 No Action Alternative

If there are no remediation measures implemented at the site, the present contamination would remain. Given the localized nature of the contamination and minimal value of the site for tourism, subsistence, or recreation, any socioeconomic impacts would be negligible.

The location of the site minimizes the potential for direct impacts on the human population and communities. The site is located on either side of a stretch of the Haines Highway that has few turnouts for access, and there are minimal resources at this site that would attract humans for subsistence foraging, hunting, or other uses. Therefore, it is unlikely that residents or visitors would encounter the contaminated site and the site does not provide groundwater resources for existing communities.

The types of contaminants that are present at the site have been analyzed for toxicity associated with direct exposure, and for potential bioaccumulation (EPA 2018; Verbrugge 2019). The contamination is unlikely to substantially affect quality or availability of subsistence resources.

Since site contaminants have not been detected in the Chilkat River Slough, and there is abundant forage area available to salmon and other subsistence species along the Chilkat River, it is highly unlikely that local fish or piscivore populations would be affected by the contamination, either directly (by visiting the site), or indirectly (via food chain effects).

As noted in the assessment of biological resources and recreation resources (Sections 3.3 and 3.11), the contamination is unlikely to affect fish and wildlife in general and is unlikely to affect recreational quality. Therefore, effects on the viability or vitality of regional economic drivers which rely on natural resources, such as commercial fisheries and tourism, is expected to be negligible.

3.5.2.2 Alternative 2 Institutional Controls

The effects of this alternative on socioeconomics would be substantially the same as described for the No Action Alternative. Implementation is not expected to require traffic controls or highway closure and therefore would not impede local or visitor access to the region. There would be no substantial adverse socioeconomic effects.

3.5.2.3 Alternative 3 Source Excavation and Monitoring

By substantially remediating the extent of contamination in the project area, this alternative would reduce uncertainty related to the potential for adverse socioeconomic effects from the contamination. By removing much of the contamination, subsistence users and commercial interest would be assured that long term risk had been reduced.

Implementation of this alternative is expected to require temporary closure of one of the lanes of the Haines Highway at various stages of the project, currently estimated at eight weeks. Such a closure may result in negligible to minor adverse socioeconomic effects due to congestion and increased travel times. However, these effects would be temporary, and given the average level of daily traffic moving past the project site, delays would not be expected to exceed several minutes for a given trip.

It would be expected that some portion of implementation costs would accrue to businesses within the region, either as wages paid to local employees, or indirectly via increased revenue to industries such as travel, food service, and accommodations. Most of this effect would be temporary and short term (during project implementation).

This alternative would result in no substantial adverse socioeconomic effects requiring mitigation. The alternative would likely result in minor net beneficial socioeconomic effects.

3.5.2.4 Alternative 4 Source Excavation, In-situ Treatment, and Monitoring (Preferred Alternative)

Impacts associated with socioeconomic resources will be the same under this alternative as under Alternative 3, although traffic delays will likely last up to 4 weeks longer than under Alternative 3. It will not result in significant adverse impacts to socioeconomic resources.

3.6 Hazardous Waste

No RCRA-designated hazardous waste is present, however Alaska Statutes (46.03.826 and 46.08.900(6)) and regulations (18AAC75.990 and 18AAC78.995) define petroleum as a hazardous substance.

3.6.1 Affected Environment

3.6.1.1 Soil

Petroleum-related contaminants have been detected in surface and subsurface samples at concentrations above ADEC human health cleanup levels at the project site (Figure 5). The thickness of contaminated soil above cleanup levels exceeds 10 feet in the source area east of the Highway and is estimated to be approximately five feet on the west side of the highway. For a summary of all previous groundwater, soil, and surface water sampling events in the project area see Section 1.2, Previous Actions. Figure 5 shows the locations of soil exceedances of ADEC standards.

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LEGEND

Groundwater Samples
- No Contamination
- Low-level Exceedance
- Concentrated Contamination

Soil Samples
- No Contamination
- Low-level Exceedance
- Concentrated Contamination

- Proposed Excavation Areas
- Observed Contaminated Groundwater Seep - April 2019
- Approximate Pipeline Route
- Approximate DOT ROW (150 feet)

Notes: Groundwater samples taken in 2018. Soil samples taken in 2012 and 2014. Contaminated seep area observed in April 2019.

Alaska District
U.S. Army Corps of Engineers
Anchorage, AK

Groundwater and Soil Sampling Results
Pipeline Milepost 17.7
Haines-Fairbanks Pipeline FUDS Alaska
Project #: F10AK1016-14

Figure 5	Date: August 2020

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3.6.1.1 Groundwater

The site is within the Chilkat River floodplain and is subject to groundwater fluctuations that rise and fall seasonally and with precipitation events (USACE 2018). The groundwater flow direction at the site is also influenced by the stage of the Chilkat River Slough. During periods of high river stage, the water surface elevation in Chilkat River Slough is higher than in nearby wells, the groundwater flow direction is away from the slough, and the slough appears to recharge shallow groundwater (Figure 6). Periods of high river stage generally occur from late spring through fall. High river stage events also occur during the winter due to rainfall events in the watershed, but these events generally do not last more than a few days. During periods of low river stage in the late fall to early spring, the water level elevations in the wells are higher than the slough, the groundwater flow direction is toward the river and the slough appears to be locally recharged by groundwater (Figure 7). Petroleum-contaminated groundwater has been identified in a seep that daylights on a gravel bar above the slough during low river stage. Seasonal groundwater levels may fluctuate by as much as four feet, with greater fluctuation occurring in wells nearer to the Chilkat River Slough.

Figure 6. Hydrogeologic Concept Model - High Water

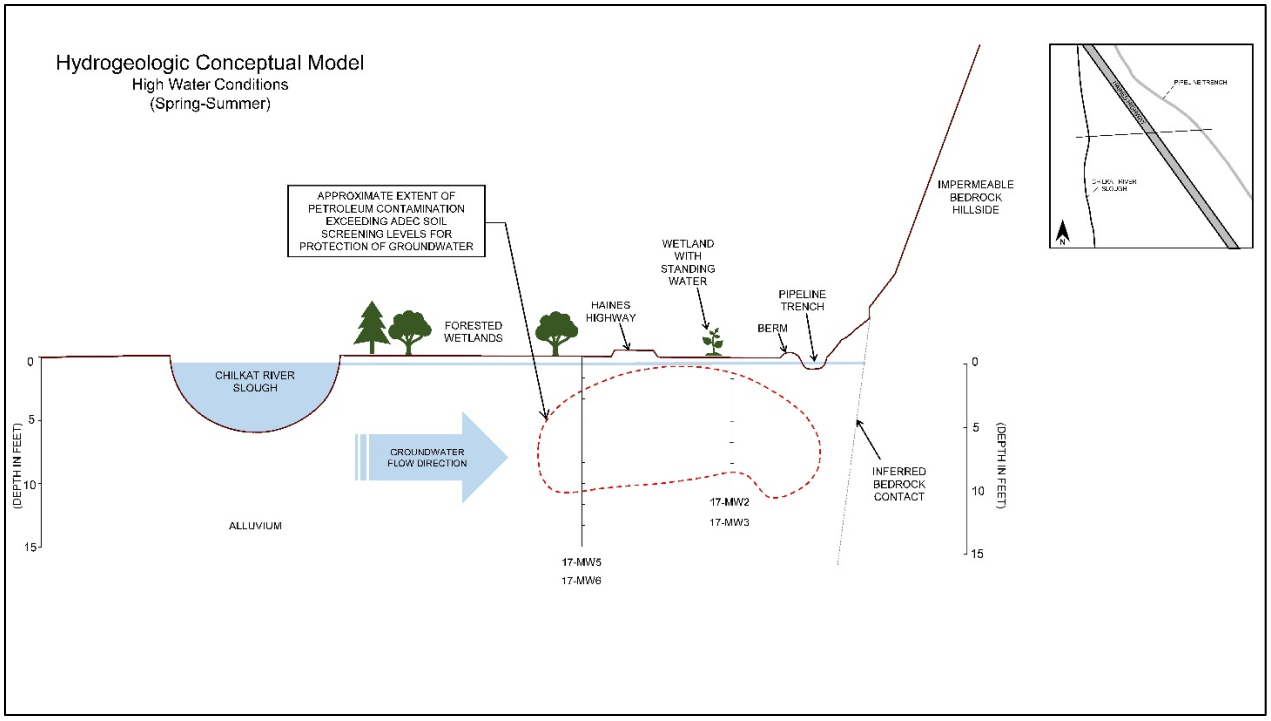
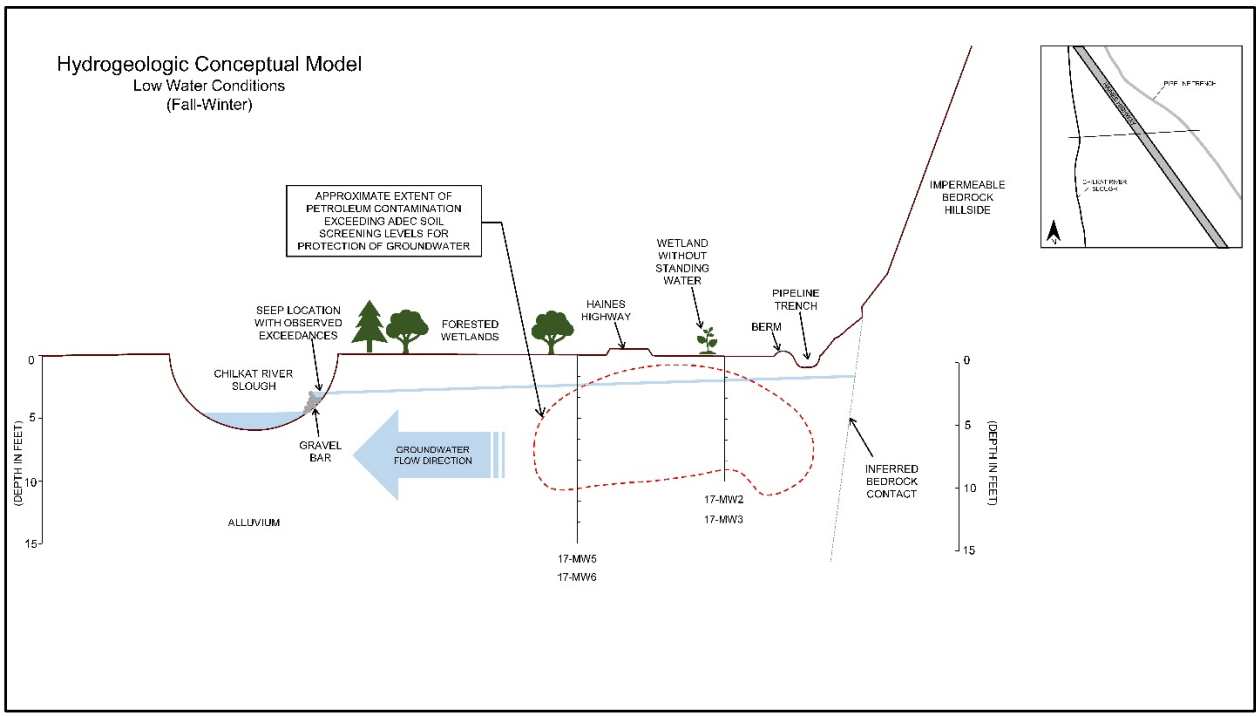


Figure 7. Hydrogeologic Concept Model - Low Water



Precipitation and runoff infiltrate into the petroleum-contaminated soils in the source area and surrounding area. Petroleum hydrocarbons and related constituents remaining in the soils from the spill leach from soil into the groundwater where they are then transported in the direction of groundwater flow. At this site, there is evidence of a petroleum smear zone, in which residual soil and groundwater contamination is concentrated within the zone of groundwater fluctuations. Active remediation strategies would focus on the residual petroleum contamination remaining in the source area as well as in the smear zone. Eight two-inch diameter wells allow for groundwater sampling access.

Contaminants consistently found to exceed ADEC groundwater cleanup levels include GRO, DRO, BTEX, and naphthalene. GRO concentrations exceed the cleanup level in four groundwater wells (USACE 2018). DRO concentrations exceed the ADEC Groundwater Cleanup Level in two of the wells, although levels have fluctuated above and below screening criteria (USACE 2018). BTEX compounds have exceeded ADEC groundwater cleanup levels in five wells (USACE 2018). In 2019, exceedances were reported for BTEX and naphthalene at five groundwater monitoring wells, GRO in four wells, and DRO in only one well. Free product was not observed in any of the wells during recent sampling events.

The following list provides an additional summary of findings from the March 2018 sampling event:

- Four wells exceeded the ADEC groundwater cleanup level for benzene (17-MW3, 17-MW5, 17-MW6, and 17-MW8). A fifth well (17-MW2) had a “non-detect” benzene detection, although the detection limit was above the benzene screening criteria.
- Ethylbenzene was detected in four monitoring wells (17-MW2, 17-MW3, 17-MW5, and 17-W6) at concentrations exceeding the ADEC groundwater cleanup level.
- Total xylenes were detected in three monitoring wells (17-MW2, 17-MW3, and 17-MW5) at concentrations exceeding the ADEC groundwater cleanup level.

- GRO and naphthalene were detected in 17-MW2, 17-MW3, 17-MW5, and 17-MW6 at concentrations exceeding the ADEC groundwater cleanup level.
- Both DRO and 1-Methylnaphthane were detected in 17-MW2 at concentrations exceeding the ADEC Groundwater Cleanup Levels.
- No other compounds were detected above ADEC groundwater cleanup level and no free product was noted in any of the wells.

3.6.1.2 Sediment and Surface Water

Sediment and surface water samples have been collected in the Chilkat River Slough, to the west of the project site, to evaluate potential contaminant migration from the site. The slough surface water was sampled in 2014, 2016, and 2018, and the sediment was sampled in 2014 and 2016. Petroleum contaminants were not detected in the slough flowing surface water or sediment in excess of applicable screening levels in any of the previous sampling efforts (USACE 2018).

A surface water sample taken from a small seep in a gravel bar adjacent to the flowing slough exceeded ADEC criteria for TAH and TAqH concentrations when sampled in 2016 (USACE 2017). This surface water sample was collected from a small area of shallow ponded water in an exposed gravel bar near the slough bank, and not directly from the flowing water in the slough. A sample collected from the same seep in April 2019 also exceeded ADEC Surface Water Quality Standards for TAH and TAqH.

Rust-colored staining was observed in April 2019 at the base of the riverbank on a gravel bar extending approximately 70 feet on the east side of the slough. The rust-colored staining occurs when groundwater containing high dissolved iron comes in contact with the atmosphere and results in precipitation of iron oxide. The highest dissolved iron concentrations in groundwater have been consistently detected in the groundwater contaminant plume area. In 2019, the highest dissolved iron concentration was 37 mg/L from 17-MW8, a contaminated well, while the non-contaminated wells had dissolved iron concentrations of 0.84 mg/L or less. The higher dissolved iron concentrations within the groundwater contaminant plume compared to outside the plume area are likely a result of bacterial activity associated with biodegradation of petroleum hydrocarbons. Dissolved iron concentrations as low as 0.2 mg/L can result in precipitation of iron oxides; therefore, the rust-colored staining may occur naturally along the Chilkat Slough at groundwater seeps due to background levels of dissolved iron present in groundwater. Although the rust colored staining along the riverbank is non-hazardous, it is aesthetically unpleasant.

3.6.2 Environmental Consequences

Generally, careless construction activities and practices can result in spills or leaks of hazardous materials to the ground, resulting in soil, air, or groundwater contamination, which may create public health hazards. The four basic exposure pathways through which humans, fish, or wildlife can be exposed to contaminated materials include inhalation, ingestion, dermal absorption, and injection. Exposure can come as a result of an accidental release during transportation, storage, or handling of hazardous materials. Subsurface soil disturbance during construction can lead to worker or public exposure to hazardous materials during excavation, stockpiling, handling, or transportation of contaminated soils and groundwater.

Potential adverse effects regarding hazardous materials and hazardous wastes associated with implementing the proposed action include: (1) accidental release to the environment of hazardous materials by construction and/or maintenance equipment and management practices; (2) incidental exposure of project workers and the public to existing hazardous materials in the soil and groundwater, inadvertently encountered during construction and operation of the proposed action; and (3)

environmental exposure as a result of contaminants moving through the groundwater into surface waters. The potential for and levels of these types of hazardous materials impacts are discussed below.

3.6.2.1 Alternative 1 No Action Alternative

Under this alternative, there would be no impacts associated with accidental release of hazardous materials during excavation or transportation, and no incidental exposure of workers to existing hazardous materials in the groundwater and soils.

The ongoing presence of petroleum-related contaminants above ADEC cleanup levels in soil and groundwater represents a potential risk to human health and the environment within the localized area of the project site, and environmental cleanup is required by ADEC regulations. Observed levels of contamination will likely persist above cleanup levels for a period of decades under the no action alternative, which is an adverse effect compared to more active methods of remediation.

3.6.2.2 Alternative 2 Institutional Controls and Monitored Natural Attenuation

This alternative would result in the same impacts as the No Action Alternative. By providing signage that would reduce the possibility of human exposure to contaminants, it would constitute a minor improvement over taking no action.

3.6.2.3 Alternative 3 Source Excavation and Monitoring

Under this alternative, between 7,500 and 17,500 tons of contaminated soil would be removed from the source area and the smear zone, and up to one million gallons of groundwater may be treated through a GAC filtration system. Contaminated soil excavated from the site would be transported by dump truck to the Haines barge landing area where it would be loaded onto a barge for shipment to a state-licensed soil waste facility, or to a landfill outside Alaska certified to accept the contaminated soil.

Adverse impacts may include increased, short-term mobilization of contaminants through groundwater to the edge of the Chilkat River Slough, due to disturbance of groundwater and soils. There is also an increased possibility of releasing contaminated material into the surrounding wetlands during excavation and handling or inadvertent release of such materials during transportation. This effect would be less than significant due to containment measures that the contractor would be required to implement, including the provisions of a SWPPP and standard BMPs for containing contaminated runoff. These measures would be described in detail in the USACE project workplan, which would be prepared by the selected construction contractor.

BMPs would include the use of sealed dump truck beds while transporting contaminated materials to ensure that no leakage occurs, and placement of straw bales or other materials around construction areas to ensure that spillage during excavation does not leave the site. Although a release of contaminants to the environment could occur through accidental spillage of the containerized soil during transport, carriers would be required to comply with ADOT&PF transportation standards and safety measures in addition to the standards and safety measures of any state through which the materials would pass. These standards ensure the likelihood of an accidental release during transport is low. Potential impacts to the environment from transporting contaminated soil outside the Haines area for disposal would therefore be less than significant.

Treatment or disposal methodology would follow applicable ADEC regulations and guidance, as well as other applicable state and federal laws and waste facility licensing requirements, as described in Sections

2.2.5 and 2.2.7. Given the safeguards that would be implemented, potential impacts to the environment from treatment or disposal of contaminated soil would be less than significant.

Long-term beneficial impacts would likely occur under this alternative due to reduction in contaminant mass and chemical concentrations in soil and groundwater at the site, and the installation of backfill with greater permeability than the native soils, which would enhance oxygen penetration and subsequent bioremediation.

3.6.2.4 Alternative 4 Source Excavation, In-situ Treatment, and Monitoring (Preferred Alternative)

This alternative includes the same components as Alternative 3 with the addition of (1) in-situ treatment materials. The environmental consequences are similar to Alternative 3.

In-situ treatment materials will be used to promote enhanced aerobic biodegradation. Treatment materials could be mixed with activated carbon in the most heavily contaminated areas, particularly in the northern portion of the excavation west of the highway to reduce further contaminated groundwater migration toward the Chilkat River Slough. Surfactants, nutrients, bacterial augmentation, and more aggressive methods of in-situ treatment (e.g., in-situ chemical oxidation) will not be used for treatment because of the potential for water quality impacts in wetland areas. Environmental benefits from this approach are the greatest of the remedial alternatives considered. Long-term benefits will come from direct mass reductions and chemical concentration reduction in soil and groundwater through source removal, oxygenation – which promotes rapid chemical breakdown through oxidation, volatilization, and enhanced aerobic biodegradation – and the use of activated carbon to slow the migration of petroleum-related contamination in groundwater. This alternative will result in a substantial reduction in contamination and best meet the goal of the project, which is to quickly and significantly reduce unacceptable contaminant concentrations at the project site.

3.7 Land Use and Management Plans

3.7.1 Affected Environment

The Haines Borough 2025 Comprehensive Plan (HBCP) identifies land use designations for the project area. Land totaling 1,505,621 acres in the Haines Borough is divided among Federal (60%), state (32.3%), private (1.3%), and Borough (0.3%) ownership (HBCP 2017, Figure 8). The HBCP categorizes the project area land use as Multiple – Recreation Emphasis, signifying that the area has a number of approved low intensity land uses, but is primarily used for recreation and tourism.

The project area is owned by the State of Alaska and a transportation right of way (ROW) has been given to ADOT&PF, which covers the entire project area footprint. The ROW for the Haines Highway extends a total of 300 feet from edge to edge, or 150 feet in each direction from the centerline of the highway (ADOT&PF 2019). There are no lands in private ownership in the project area.

Immediately east of the project area, land composed of steeply-sloped bedrock mountainside is owned by the Alaska Mental Health Trust Authority (MHTA) and managed by the Trust Land Office. MHTA lands east of the site include Settlement Parcels CRM-0412 and CRM-0417. The MHTA parcels are categorized for use under their land and mineral status (MHTA 2019). The Trust Land Office is contracted exclusively by the MHTA to manage its approximately one million acres of land and other non-cash assets to generate revenue by land leases and sales, real estate, timber sales, mineral and energy

exploration and development, and material sales. MHTA lands are bordered by the Haines State Forest (ADNR 2002s).

Immediately west of the highway, the Chilkat River and environs are designated part of the Chilkat Bald Eagle Preserve Management Unit 4, owned by ADNR and managed by the ADPOR. Use, protection, and management guidance are provided by the Chilkat Bald Eagle Preserve Management Plan (ADNR 2002b). The Preserve Management Plan designates the area encompassing the project site as Management Unit 4, Lower Haines Highway Subunit. Management Unit 4 is generally managed for primary uses, which include dispersed personal recreation, traditional uses, and commercial non-motorized recreation uses. The Lower Haines Highway Subunit is further managed to protect fish and wildlife habitat, water quality and quantity, and other natural features (ADNR 2002b).

The statute establishing the Preserve recognizes existing transportation and utility corridors and excludes these from the Preserve (AS 41.21.612(a)). With the exception of guided tours and noncompetitive use permits, concession and commercial activities are not permitted inside the Preserve (ADNR 2002b). Traditional uses are guaranteed to be protected within the Preserve if they are compatible with protection of bald eagle populations. Hunting, fishing, and trapping can be regulated as needed by the ADF&G and any traditional uses must comply with regulations for these activities set by the Boards of Fishery and Game.

3.7.2 Environmental Consequences

Impacts to land use would occur if an alternative resulted in:

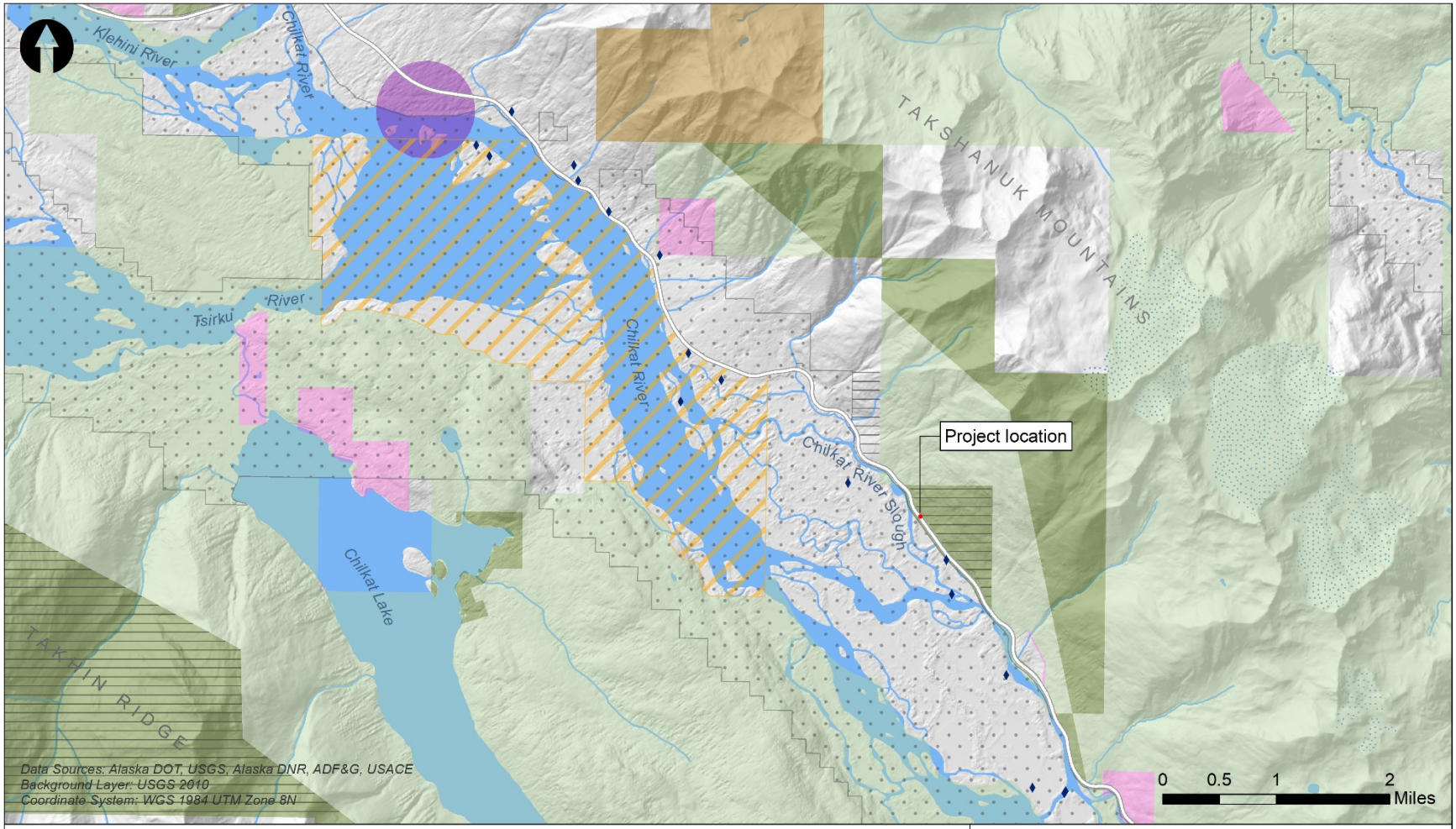
- Inconsistencies with any existing land management plans;
- Disruption of ADOT&PF ROW land uses;
- Changes in the value or use of MHTA lands; or
- Reductions in the quality or quantity of Bald Eagle Preserve lands.

3.7.2.1 Alternative 1 No Action Alternative

Project area lands would continue to be managed under their respective plans under the No Action Alternative. No changes to land use or zoning would result except through required legal channels. The quality and quantity of MHTA and Preserve lands would not diminish as a result of taking no action at the project site, and construction in the ADOT&PF ROW would be temporary and would only occur with ADOT&PF's permission.

3.7.2.2 Alternative 2 Institutional Controls and Monitored Natural Attenuation

Installation of signage at the site would not result in changes to land use or zoning. The project area would remain under current ownership and there would be no changes to land use or zoning. If administrative controls are used to limit the types of usage for the project area (e.g., deed restrictions), it would not result in changes to land ownership, but it may restrict the ways that the land can be managed. However, the project area is a small and unused portion of land lying along a National Scenic Byway. It is unlikely that a restriction in uses would substantially reduce the value of the land or the overall manner that it may be utilized. There would be no significant adverse effects to land use and management as a result of ICs.



LEGEND

- Project location
- Haines Highway
- River/stream
- Waterbody
- Snowfield/glacier
- Chilkat Indian Village (Klukwan)
- Native allotment
- Haines State Forest
- Other State-owned land
- BLM land
- Mental Health Trust land
- Chilkat River Critical Habitat Area
- Alaska Chilkat Bald Eagle Preserve
- 2018 DOT eagle nest survey

Alaska District
U.S. Army Corps of Engineers
Anchorage, AK

Land Use
Pipeline Milepost 17.7
Haines-Fairbanks Pipeline FUDS Alaska
Project #: F10AK1016-14

Figure 8 | Date: August 2020

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3.7.2.3 Alternative 3 Source Excavation and Monitoring

Source excavation is intended to remediate contaminants at the project site, which would result in an overall better environmental condition. The land in the project area is a small parcel not currently under any particular use; it is not logged or protected and does not provide recreational or other human use value, aside from the aesthetic beauty incorporated as part of the National Scenic Byway. The construction and operations process would not limit long-term access by land managers, subsistence users, or users of adjacent areas such as quarries or boat launches. The completion of the project would not alter the way the land is used, zoned, or managed from its current condition. There would be no significant effect to land use and management as a result of Alternative 3.

3.7.2.4 Alternative 4 Source Excavation, In-situ Treatment, and Monitoring (Preferred Alternative)

Impacts resulting from Alternative 4 will be the same as those described for Alternative 3, above.

3.8 Noise

3.8.1 Affected Environment

The primary noise source in the project area is highway traffic. The amount of noise generated by highway traffic depends on the number and types of vehicles as well as the speed of traffic. If the overall traffic numbers include a high percentage of heavy trucks, noise volumes would be higher than in areas where most vehicles are passenger vehicles or light trucks.

ADOT&PF traffic counts from 2017 measured a daily average of 393 vehicles traveling the stretch of the Haines Highway that includes the project area (ADOT&PF 2019). Because traffic on the Haines Highway is light and sparse relative to highways in more heavily populated areas, highway noise in the vicinity of PMP 17.7 is relatively low and relatively infrequent.

Noise-sensitive receptors are identified using ADOT&PF standards (ADOT&PF 2018). Noise-sensitive receptors are classified into one of four categories, as follows:

Category A: This category includes land uses where quiet and serenity are of extraordinary significance, and where the preservation of those qualities is essential for those land uses to continue to serve their intended purposes.

Category B: This category includes single-family and multi-family residences.

Category C: This category includes land use facilities such as recreation areas. Only exterior impact (i.e. sounds affecting outdoor receptors) criteria apply to this category.

Category D: This category is the same as Category C, but includes facilities that may have interior uses. Exterior and interior impact criteria apply to this category.

Category B and C receptors are found in the project vicinity. Residences are found within one mile of the site, and recreation sites including the Bald Eagle Preserve are located within 50 feet of the project area. The Preserve's Management Plan (DNR DMLW 2002) does not identify the Preserve as lands where quiet and serenity are of extraordinary importance. There are no Category A or D receptors in the project area.

3.8.2 Environmental Consequences

3.8.2.1 Alternative 1 No Action Alternative

Under the No Action Alternative, there would be no construction actions and no noise would be generated. There would be no noise impacts under this alternative.

3.8.2.2 Alternative 2 Institutional Controls and Monitored Natural Attenuation

Minor noise impacts associated with installation of signs would occur over a three day period. Noises would be generated by trucks and light equipment needed to install the signs, but would be temporary and likely not audible beyond 500 feet from the source. Impacts under this alternative would be negligible.

3.8.2.3 Alternative 3 Source Excavation and Monitoring

Under this alternative, noise would be generated by construction equipment and by alterations in traffic movements. Noise up to 85 dBa would be generated at the project site during construction, but noise levels would attenuate to a low level by the time they reached the nearest sensitive receptor. Although the Chilkat Bald Eagle Preserve is near the project area, the nearest known bald eagle nest is located approximately 0.5 mile away from the construction area, therefore noise impacts would be less than significant. Temporary increases in traffic noise from dump trucks transiting between the construction area and the barge landing area would occur, but would be temporary, intermittent, and only occur during normal working hours. Noise from construction equipment and construction-related traffic would be less than significant.

3.8.2.4 Alternative 4 Source Excavation, In-situ Treatment, and Monitoring (Preferred Alternative)

Noise impacts under Alternative 4 will be similar to those occurring under Alternative 3. The period of excavation will likely last up to four weeks longer than Alternative 3 due to installation of in-situ treatment technologies. Impacts will be less than significant.

3.9 Physical Resources

3.9.1 Affected Environment

3.9.1.1 Geology and Soils

The project area lies within the lower portion of the Chilkat River Valley. In the vicinity of the project area, the Chilkat River valley is approximately 1.9 miles wide. The flat valley floor is nestled between the Takshanuk Mountains (to the northeast) and Takhin Ridge (to the southwest). Peaks within the Takshanuk Mountain range reach above 6,600 feet North American Vertical Datum of 1988 (NAVD88). The summit of Takhin Ridge is slightly lower, at just over 5,750 feet NAVD88. In the vicinity of the project area, elevations within the valley floor range from approximately 45 to 100 feet NAVD88 (USGS 2019a).

At PMP 17.7, the HFP lies at the easternmost extent of the Chilkat River floodplain, at the edge of the valley floor. The pipeline trench is on the eastern side of the Haines highway, and parallels the toe of the hillslope. Within the preliminary work limits, topography is generally flat to the west of the highway and sloping upward to the east of the highway. According to ADOT&PF 2011 digital elevation data, elevation ranges from 66 to 110 feet within the preliminary work limits for PMP 17.7. The mean elevation within the preliminary work limits is 70 feet (ADOT&PF 2011). Surveyed ground elevations for the eight

monitoring wells at the site range from 64.5 to 67.5 feet NAVD88 (USACE 2014). Adjacent to the preliminary work limits, the slope steepens dramatically along the flank of the Takshanuk Mountains.

In the vicinity of PMP 17.7, the National Resources Conservation Service (NRCS) Web Soil Survey has mapped soils east of the Haines highway as rock outcrop (lithic cryorthents complex), with 70 to 120% slopes (NRCS 2013, NRCS 2018). Soils within the area to the west of the Haines Highway are mapped as Ashmun-Hollow-Funter complex, with 0 to 5% slopes. This complex is derived from alluvium and is rated as very poorly drained. The composition of the upper 16 inches of this soil complex is estimated to be 81% sand, 17% silt, and 2% clay (NRCS 2013, NRCS 2018).

3.9.1.2 Seismic Activity

There are two normal faults within one mile of PMP 17.7. Both run parallel to the axis of the valley (northwest to southeast). One normal fault is located approximately 640 feet northeast of the preliminary work limits, at the transition between the Triassic mafic volcanic rocks and the Cretaceous-period formation immediately upslope of gabbro and diorite of southeast Alaska. A second, concealed normal fault, lies within the unconsolidated surficial deposits, approximately 0.5 miles southwest of the preliminary work limits (USGS 2015). The Chilkat River valley faults are associated with the Denali fault (ADNR 2018). Based on its orientation and documented activity further north along its extent, experts infer that this fault system has been active since the Quaternary period (< 1.6 million years ago). Lateral displacements have been documented in Tertiary and late Paleozoic rocks, but no Holocene (< 11,650 years before present) displacements have been recorded. The split rate for these faults is unknown (ADNR 2018).

3.9.2 Environmental Consequences

Impacts associated with soils, topography, or geology could occur if an alternative resulted in any of the following:

- Increased risk from seismic activity;
- Substantial erosion or sedimentation;
- Fugitive dust generated during construction;
- Depletion of groundwater supplies; or
- Interference with groundwater recharge.

3.9.2.1 Alternative 1 No Action Alternative

Under the No Action Alternative, physical resources in the study area would not change substantially. Seismic risk would remain unchanged. Terrestrial soils would continue to naturally decompose. As under current conditions, erosion and deposition of soils would occur due to hillslope processes, eolian processes, and dynamic channel movement within the Chilkat River floodplain. Decommissioning of the existing wells would have no impact on groundwater elevations, groundwater supplies, or groundwater recharge. Use of a drill rig to complete the decommissioning process would result in minor soil disturbance at the site of each monitoring well and would temporarily increase soil compaction within the project area. This impact would be less than significant. Any contaminated sediments within the project area would remain in place.

3.9.2.2 Alternative 2 Institutional Controls and Monitored Natural Attenuation

Under Alternative 2 monitoring wells would need to be replaced periodically and impacts would be similar to those occurring under Alternative 1. Use of a drill rig to complete the monitoring well installation process would result in minor soil disturbance at the site of each monitoring well.

Maintenance of the well network would have minimal impact on soils, and no impact on topography, or geology. There would be no impact to groundwater supplies or groundwater recharge. Any contaminated sediments within the project area would remain in place.

3.9.2.3 Alternative 3 Source Excavation and Monitoring

Under Alternative 3, contaminated soils would be excavated from the project area. Although current USACE estimates indicate that approximately 7,500 tons of substrate would be removed as part of this interim action, this analysis assumes that up to 17,500 tons of material could be excavated. All excavated areas would be backfilled with clean, geotechnically suitable soils. Soil excavation would require the use of heavy equipment, including an excavator, a loader, and trucks. In addition, temporary lanes would be constructed alongside the Haines Highway for site access.

Earthwork would result in a temporary increase in soil erosion and compaction within the project area. Soil disturbance would result from excavation of contaminated soils. Additional soils impacts would result from clearing and grubbing construction and staging areas and the temporary lanes. Each of these elements would occur on land with relatively flat topography (only three feet of elevation change across the site) (USACE 2014). Mitigation measures and implementation of a SWPPP would ensure that erosion impacts associated with these actions would be less than significant. During construction and excavation, fugitive dust could be generated, but would be controlled by covering stockpiled soils or watering excavated areas and access roads to control fugitive dust as necessary. This impact would be less than significant.

Excavation of contaminated soils within the source area and the smear zone would not impact topography or geology in the project area. Excavation would not impact groundwater levels, groundwater quantity, or groundwater recharge within the project area.

3.9.2.4 Alternative 4 Source Excavation, In-situ Treatment, and Monitoring (Preferred Alternative)

Impacts to soils, topography, and geology under Alternative 4 will be the same as those occurring under Alternative 3.

3.10 Public Health and Safety

3.10.1 Affected Environment

According to Haines Borough Ordinance 7.08, Community Safety Service Areas must be provided with (1) community-based police services and education, (2) ambulance services, and (3) related dispatch communication services. Public health and safety in the project area are provided by the Haines Borough Police and Fire Departments, who initiate emergency response and coordinate with all other emergency responders described below (Haines Borough Ordinance 2019). Each of the public health and safety agencies serving the project area are shown in Table 19.

The Police Department provides a Patrol and Communications Division to the region. The Police Department investigates crimes and responds to emergencies in partnership with the Alaska State

Troopers, ADPOR, and the U.S. Customs and Border Protection. The Communications Division operates a dispatch center that communicates emergency needs to the Police Department, Haines Volunteer Fire Department, Klehini Valley Fire Department, Alaska State Troopers and State Parks. It is staffed 24 hours a day, 365 days a year by a team of professionally trained telecommunicators.

The Fire Department provides fire engine and ambulance response to emergencies in the Haines Borough. The project area lies within Fire Service Area No. 3, including all land within 2,000 feet of the Haines Highway from MP 15 and northward (Haines Borough Ordinance 2019).

Alaska State Troopers provide services to the Haines Borough as part of the "A Detachment" that comprises 36,000 square miles of land in southeast Alaska (ADPS 2019). As of 2016, an estimated 10,149 people in this region rely on Alaska State Troopers as their primary provider of public safety. Commissioned troopers and administrative support personnel are assigned to posts located in Ketchikan, Juneau, and Craig. Troopers staff the only 24-hour dispatch center in the region. The detachment has 5 of the 9 assigned Village Public Safety Officer (VSPO) positions in the region, with positions located in Thorne Bay, Angoon, Kassan, Saxman, and Hydaburg. The VSPO Program was designed to train and employ individuals residing in remote villages as first responders. VSPOs are typically the first to respond to public safety emergencies such as search and rescue, fire protection, emergency medical assistance, crime prevention and basic law enforcement (ADPS 2019).

Table 19. Public health and safety agencies

Agency	Contact Information
Haines Borough Police Department	315 Haines Highway, PO Box 1209, Haines, AK 99827 Emergency Dial 911 Non-Emergency (907) 766-6430
Haines Volunteer Fire Department	Public Safety Building 213 Haines Highway, P.O. Box 1209, Haines, AK 99827 (907) 766-6430
Klehini Valley Fire Department	199 Dalton Street, Haines, AK 99827 (907) 767-5550
Alaska State Troopers	7366 North Tongass Highway, Ketchikan, AK 99901 (907) 225-5118
State of Alaska Department of Health and Social Services	350 Main Street, Room 508, P.O. Box 110610, Juneau, Alaska 99801 (907) 465-3090
State of Alaska Department of Public Safety	5700 East Tudor Road, Anchorage, AK 99507 (907) 269-5511
U.S. Coast Guard	17th District Command Center, Sector Juneau 709 W 9th Street, 223B, Juneau, AK 99801 (907) 463-2000 Marine-Band Radio VHF-FM Channel 16

Alaska State Troopers are statutorily required to lead search and rescue (SAR) efforts within the state of Alaska, in coordination with local agencies and volunteer groups (ADPS 2019). SAR operations have access to aircraft, vessels, ground search teams, and canines. If needed, the U.S. Coast Guard may be involved in SAR efforts.

The Alaska Department of Health and Social Services maintains a statewide Public Health Alert Network (PHAN) that provides emergency alerts on their website and by email or text notification (ADHSS 2019). The Alaska Department of Public Safety provides statewide coordination of first responders, ensuring public safety and enforcement of fish and wildlife laws (ADPS 2019).

3.10.2 Environmental Consequences

Impacts to public safety and health would occur if an alternative resulted in reductions in emergency response timing to surrounding communities, resulted in a substantial increase in the need for public health and safety agencies or resources, or if water quality exceedances resulted in significant adverse effects to public health.

3.10.2.1 Alternative 1 No Action Alternative

Observed levels of contamination would likely remain for a period of decades under Alternative 1. The selection of Alternative 1 would result in no change to current risks posed to public health and safety.

3.10.2.2 Alternative 2 Institutional Controls and Monitored Natural Attenuation

Impacts under Alternative 2 would be similar to those occurring under Alternative 1. Installing signs and restricting future land use would result in an improvement to public health and safety. Sign installation would follow USACE highway safety guidelines and no roadways would be closed. The signage itself would improve safety through awareness of contaminants. However, contaminants would remain at the site and would continue to be accessible to people who disregarded the signs.

3.10.2.3 Alternative 3 Source Excavation and Monitoring

The intention of the remediation process is to prevent future potential public health and safety issues that could result from contaminated soils, groundwater, and surface water. Overall, the completion of the project would result in a benefit to public health and safety. Contamination of soil and groundwater would be reduced, as would the potential for contaminants to reach surface water. During construction, the use of heavy machinery and presence of construction personnel around a two-lane state highway would present a temporary increase in risks to public health and safety. The USACE would develop a detailed work plan including a "traffic control plan" prior to groundbreaking and would include provisions necessary to ensure the safety of drivers and construction personnel. USACE's work plan and traffic control plan would be made available to ADOT&PF for review to ensure that all necessary highway safety precautions are included.

3.10.2.4 Alternative 4 Source Excavation, In-situ Treatment, and Monitoring (Preferred Alternative)

The impacts for Alternative 4 will be the same as described for Alternative 3. The detailed construction plan will include provisions for additional site visits to perform future treatments, as needed.

3.11 Recreation

3.11.1 Affected Environment

Recreation in the project area includes activities centered primarily on the Chilkat River. Activities along the river include wildlife viewing and photography, boating, and fishing. Haines is the jumping off point for many recreational companies that provide Chilkat River tours, flightseeing tours, cultural tours, bicycling tours and other outdoor adventures through the project area. Throughout the year special events bring visitors to the Haines area, including snow machine races, state fairs, music and cultural festivals, fishing derbies, and holiday celebrations. During these periods, visitation to the Chilkat Bald Eagle Preserve and the Chilkat River increases. Haines Highway is used as an access point to the river and is also a corridor for bicycling.

Fishing on the Chilkat River is a popular draw for local communities and visitors to the region. It is easily accessible from the Haines Highway at several turnouts. Anglers pursue Chinook, Coho, Chum, Pink, and Sockeye Salmon, as well as Dolly Varden (Visit Haines 2019). Though there are several parking turnouts along the highway used for access to the Chilkat River, there are none within the project area. The nearest turnout is to the east of the highway located 0.35 mile north of the project area (ADOT&PF 2019).

The Chilkat Bald Eagle Preserve is managed by the ADPOR with assistance from the 13-member Alaska Chilkat Bald Eagle Preserve Advisory Council. The Preserve draws hundreds of visitors each year from local, national, and international communities, particularly during the winter months when more than 4,000 individual bald eagles may assemble along the Chilkat River as they take advantage of late season salmon runs (Visit Haines 2019). The Alaska Bald Eagle Festival is held each November to celebrate and experience this unique wildlife event (ABEF 2019). Although the best viewing is from Highway MPs 18 to 24, viewing is also available from the highway adjacent to the project area (Visit Haines 2019).

Bicycling is an increasingly popular sport in Alaska. In 2011, a 40.1 mile stretch of the Haines Highway from Whitehorse to Haines was designated as U.S. Bicycle Route (USBR) 208 (ABPA 2011). Each June, as many as 1,300 cyclists take part in the Kluane-Chilkat International Bike Relay, riding 148.1 miles from Haines Junction to Haines (KCIBR 2019).

3.11.2 Environmental Consequences

Impacts associated with recreation could occur if an alternative resulted in any of the following:

- Reduction in quality or availability of recreational activities;
- Reduction or loss of features that draw visitors to the area for recreational purposes, such as disturbance to bald eagles, reductions in fish populations, or permanent loss of river access

3.11.2.1 Alternative 1 No Action Alternative

Recreational activities, access, and features that draw visitors to the area would not change under Alternative 1. Observed levels of contamination would likely remain for a period of decades under Alternative 1.

Site contaminants have not been detected in the Chilkat River Slough, so it is unlikely that local fish or their predators are affected by the site contamination. It is not expected that the remaining localized POL contamination would have a negative effect on the region's ability to support recreational activities and continue to draw thousands of visitors for recreation.

3.11.2.2 Alternative 2 Institutional Controls and Monitored Natural Attenuation

The installation of signage would require up to three days and minimal vehicle trips, resulting in no appreciable impact to recreation access or quality. The presence of signage in the project area would not reduce the access or quality of recreation in the vicinity.

3.11.2.3 Alternative 3 Source Excavation and Monitoring

There are no public use recreation features in or adjacent to the project area. Therefore, no direct impacts to recreation would result from excavation for the remediation project. Indirect effects would result from the construction process, since it would require an intermittent single-lane closure on the Haines Highway for up to eight weeks during the height of the summer travel season. Residents and visitors traveling along the Haines Highway to reach recreational sites would experience delays resulting from these traffic flow changes. However, even during the busiest parts of the year for vehicle travel on Haines Highway,

the number of vehicles passing through is low and can be accommodated by providing one open lane of travel at all times. This delay would be temporary during construction and would not result in a significant adverse impact to recreation opportunities in the area.

3.11.2.4 Alternative 4 Source Excavation, In-situ Treatment, and Monitoring (Preferred Alternative)

Impacts to recreation from this alternative will be the same as described for Alternative 3. However, the duration of possible traffic delays will be up to 12 weeks, four weeks longer than under Alternative 3. This effect will be less than significant.

3.12 Transportation and Traffic

Transportation into Haines, Alaska is provided via roadway, airplane, and ferry. Road access is provided by the Haines Highway (State Highway 7), air traffic arrives in Haines via the Haines Airport, ferry passenger and vehicular traffic arrives in Portage Cove at Port Chilkoot, and a passenger-only ferry services the Haines ferry terminal. Additional access to the region is provided by airports in Skagway and Juneau. There are no railroads or buses serving the town of Haines. Typical methods of reaching Haines include flying directly into the Haines Airport or flying into nearby airports and taking a ferry to Port Chilkoot or the Haines Ferry Terminal.

3.12.1 Affected Environment

The Haines Highway is the only roadway providing access to the town of Haines. The highway originates on the shore of the Chilkoot Inlet in the town of Haines, runs northwest along the Chilkat River and ends at Haines Junction in Yukon Territory, Canada, connecting to the Alaska Highway.

The Haines Highway is a low-volume rural highway classified as a principal arterial (ADOT&PF 2016). It has two 12 foot travel lanes and two foot shoulders for a total top width of 28 feet and a speed limit of 55 mph. Annual daily traffic (ADT) counts for 2017 report that there are 393 vehicles passing between MP 13 and 21 on a daily basis when calculated as an average across the entire year (ADOT&PF 2019). These counts were based on data collected between July 15 and 24, 2017 and extrapolated across the year; most traffic moves through the project area during the summer months (Koski 2019).

In October 2009, the Haines Highway was designated as a National Scenic Byway by the Federal Highway Administration (FHWA). Officially recognized as the Haines Highway – Valley of the Eagles, it is an extension of the Alaska Marine Highway System, which has in turn been recognized as one of the highest quality scenic pathways in the U.S., known as an All-American Road (FHWA 2019).

Public vehicle transportation can be obtained via the Haines Shuttle, providing service within Haines, or the Hinterland Express, providing one-way or roundtrip service from Haines to Whitehorse via Haines Junction from April to September (Visit Haines 2019). Car rentals are also available.

3.12.1.1 Air Travel

Three airports serve the region, including the Haines Airport, Skagway Airport, and Juneau International Airport. The Haines Airport is located along the Haines Highway three miles northwest of Haines and 12.4 miles southwest of the project area. Two 4,000-foot long asphalt runways are available, both 100 feet

wide and reported in good condition (Air Nav 2019). Year-round scheduled flights are available. A recent improvement project was completed at the Haines Airport for drainage, taxiway, and apron rehabilitation.

3.12.2 Environmental Consequences

Traffic and transportation impacts would occur if an alternative resulted in an interruption in access through the project area that resulted in permanent significant economic or subsistence losses or resulted in delays to emergency response.

3.12.2.1 Alternative 1 No Action Alternative

Under the No Action Alternative, there would be no construction activities undertaken to remove contaminated soils. The continued presence of contaminants would not affect traffic or transportation.

3.12.2.2 Alternative 2 Institutional Controls and Monitored Natural Attenuation

Installing signage would require less than a day and can be accomplished using one truck. There would be no impact to traffic as a result. ADOT&PF would retain their right-of-way boundaries for the Haines Highway and the implementation of administrative controls would not change that. There would be no significant adverse effects resulting from the ICs.

3.12.2.3 Alternative 3 Source Excavation and Monitoring

During the source excavation, there would be a number of trucks and heavy machinery present in the project area. Due to the small size of the project area and limited access to the site from the 2-lane highway, this machinery would require more space than is available on the shoulder of the highway or in other staging areas. For this reason, it is anticipated that the construction process would take up to eight weeks and would require the temporary closure of one lane of highway. This closure would be in effect throughout the scheduled primary construction period. Occasionally there may be a need to briefly close both lanes while trucks ingress or egress the site.

Traffic along the Haines Highway is relatively sparse, and even less so during the late winter and spring months when the construction is planned to occur. In order to reduce impacts, a detailed traffic control plan would clearly state the proposed construction calendar, the daily hours of one-lane closure, and access for emergency vehicles. This plan would be advertised in the Haines community prior to the start of construction. Construction personnel would remain in contact with emergency vehicles to facilitate passage and would result in no delay to emergency responders. The use of flaggers at the project site would ensure coordinated use of the single available lane and reduce risk of danger for construction personnel and highway travelers. Because the lane closures are temporary and would be mitigated with a traffic control plan, the impacts would be less than significant.

Truck trips along the Haines Highway would increase as excavated materials were transported off site. Use of the highway by large trucks is not restricted and their presence is not expected to significantly delay traffic flow or interrupt typical traffic patterns once they have left the excavation area. Some oncoming or trailing vehicles would need to slow to allow trucks to exit the highway, but this effect would be temporary, intermittent, and restricted to normal working hours.

It is assumed that barges with a capacity of up to 1,000 tons would be used to transport materials to the disposal area. Less than 20 such barge loads would be needed to transport the total amount of material over the construction period, meaning that there would be fewer than three barge trips per week. This

would not substantially increase the amount of vessel traffic in the surrounding area and would be a less than significant impact on navigation.

Once excavation was completed, the continued well monitoring and other intermittent site visits would not require lane closures or use of heavy machinery. There would be no significant adverse impacts to traffic as a result of operation of the completed project.

3.12.2.4 Alternative 4 Source Excavation, In-situ Treatment, and Monitoring (Preferred Alternative)

Impacts resulting from this alternative will be the same as described for Alternative 3, but the period of construction will be extended by up to four weeks.

3.13 Utilities

3.13.1 Affected Environment

Few utilities are located near or within the site boundaries at PMP 17.7, as it is situated approximately 14 miles northwest of the nearest town. No residential structures requiring utility access are found within the immediate vicinity of the site. The former pipeline serves as an underground conduit for power and communication lines near the site. One utility box is located along the western side of the pipeline near the western excavation area.

Telephone service is provided to the surrounding area by AP&T. There are no known customers served from these lines near the project area. Power is provided by IPEC. There is no water, sanitary sewer, or natural gas infrastructure within the project area. An IPEC lineman confirmed the absence of any other underground utility conduits aside from the former pipeline. Residential structures are located at least 0.5 mile from the project area and are typically served by private wells and septic tanks.

Stormwater near the site is managed by ADOT&PF. There are no culverts or storm drains located within the project area. Future highway improvements conducted by ADOT&PF may change the stormwater drainage facilities near the project area and are considered in the Cumulative Effects section of this report.

Disposal facilities near Haines are owned and operated by Community Waste Solutions. The disposal of contaminated waste is prohibited at the landfill.

3.13.2 Environmental Consequences

The only utilities present within the project area are located within the former pipeline. The pipeline would not be disturbed under any of the alternatives and therefore, no impacts would result to any utility as a result of the No Action Alternative or any of the action alternatives.

3.14 Water Resources

3.14.1 Affected Environment

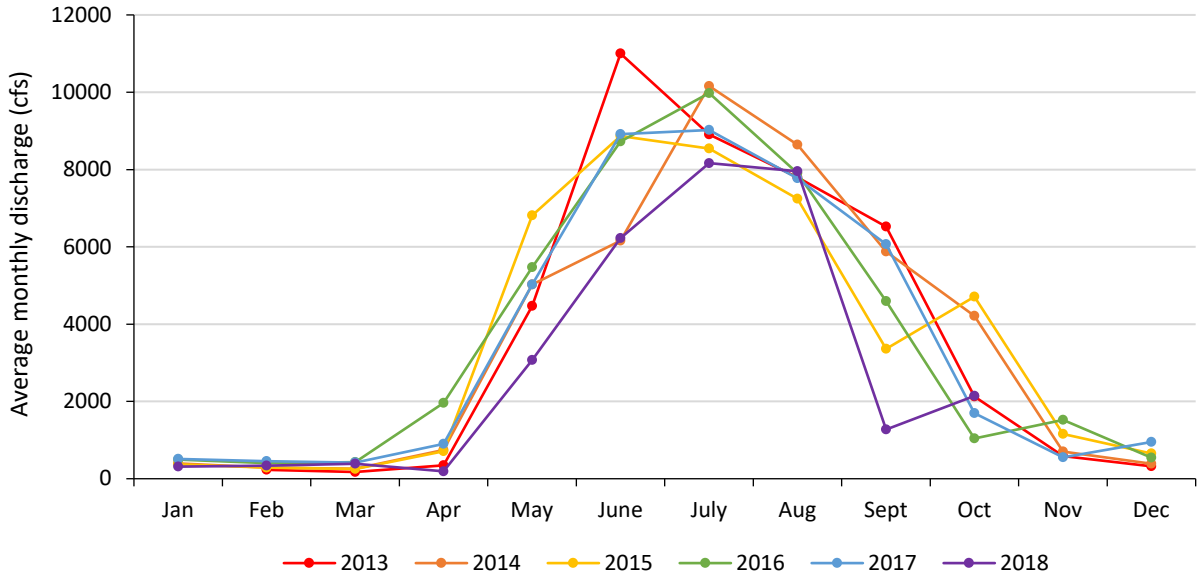
3.14.1.1 Surface Water

The project site is located within the Chilkat River valley in southeastern Alaska. In the lower portion of the valley, where the project site is located, the primary channel of the Chilkat River flows through the western side of the valley. The project site is located at the very eastern edge of the valley, but is adjacent to the Chilkat River Slough, a side channel to the mainstem. Downstream of the project site, the Chilkat

River Slough discharges into the mainstem of the Chilkat River, which then drains into the Chilkat Inlet, an arm of the Lynn Canal. The final three miles of the Chilkat River are tidally influenced.

The U.S. Geological Survey (USGS) operates a discharge gage on the Chilkat River upstream of the confluence of the Chilkat River and the Tsirku River (USGS 15056500). The gage freezes over often during the winter months, preventing the collection of discharge data. From 2013 to 2018, average monthly discharge (including only ice-free days) ranged from a low of 316 cubic feet per second (cfs) in March to a maximum of 9,094 cfs in July (Figure 10).

Figure 9. Average monthly discharge in 2013-2018 at the USGS gage on the Chilkat River, upstream of the confluence of the Tsirku River and Chilkat River (USGS 2019b).



Water quality in Alaska is regulated and monitored by the ADEC Division of Water. The State of Alaska is required by the CWA to maintain a list of impaired water bodies. This list must be approved by the EPA. Segments of a given waterbody are listed as impaired (water quality limited) if a specific number of measurements exceed state water quality criteria. All available water quality data for regulated parameters are assessed.

Statewide water quality assessments are completed by ADEC every two years, as mandated by the CWA (ADEC 2019). The assessments use available water quality data to evaluate the water quality within a given segment of a stream or river, or within a lake or reservoir. Within each segment, measured parameters are assigned to a specific category that indicates if the water segment meets water quality standards for that parameter. The categories used by ADEC are listed and defined in Table 20. Per CWA Section 303(d), ADEC compiles a 303(d) list of all waterbodies for which one or more parameters was categorized as Category 5, indicating that state water quality criteria were exceeded and a total maximum daily load (TMDL) needs to be developed (ADEC 2018a).

During the 2014/2016 statewide assessment, the Chilkat River was classified as a Category 3 waterbody, indicating that ADEC had insufficient water quality data for the Chilkat River, and could not determine whether this waterbody was impaired or in attainment (ADEC 2018a). ADEC does not have any water

quality monitoring sites on the Chilkat River or its major tributaries, the Tsirku River and the Klehini River (ADEC 2018b).

The history of contamination at the PMP 17.7 site and subsequent investigative and removal actions are discussed in detail in Section 1. A brief synopsis of findings related to surface water in the Chilkat River Slough is provided here. During geotechnical investigations of the PMP 17.7 site conducted in August 2014, investigators sampled surface water from the Chilkat River Slough. Concentrations of contaminants in the slough samples were non-detect for the contaminants of concern (USACE 2014, USACE 2018).

Table 20. Water quality assessment categories used by ADEC.

Category	ADEC definition:
5	Impaired waterbodies where [water quality standards] for one or more criteria are not attained requiring TMDL or recovery plan development. Category 5 waterbodies are those identified on the CWA Section 303(d) list of impaired waters.
4	Waterbodies determined to be impaired, but do not need the development of TMDLs.
4A	Impaired waterbodies for which an EPA-approved TMDL has been established
4B	Impaired waterbodies where [water quality standards] can be attained through other pollution control measures
4C	Failure to meet [water quality standards] criteria for the impaired water is not caused by a pollutant; instead, waterbodies with impairments that are not directly caused by a source of pollution nuisance aquatic plants, degraded habitat, or a dam that affects flow are example causes of impairments for waterbodies in this category
3	Waterbodies where data or information is insufficient to determine if the [water quality standards] for any criteria are attained
2	Waterbodies where [water quality standards] for some criteria are attained, but there is insufficient data and information to determine if the [water quality standards] for the remaining criteria are attained
1	Waterbodies where all [water quality standards] criteria are attained
Source: ADEC 2018a.	

Surface water samples were collected again from the Chilkat River Slough from five locations just west of the area with known groundwater contamination at PMP 17.7 in April 2016. Concentrations of contaminants in the surface water samples from the slough did not exceed the applicable screening criteria (USACE 2017). A sample was also collected in 2016 from a shallow pool of standing water on an exposed gravel bar near the riverbank. Concentrations of TAH and TAqH exceeded ADEC water quality standards in the water sample from the shallow pool. In April 2017, the slough was again sampled in five locations immediately west of the site and all results were non-detect for the contaminants of concern (USACE 2018). To date, samples collected from the flowing water of the slough indicate that the slough is not currently impacted by the site contamination.

3.14.1.2 Groundwater

In conjunction with geotechnical investigations of the site, investigators have monitored groundwater levels in temporary and permanent monitoring wells. The eight permanent monitoring wells were installed in 2014 (USACE 2014, USACE 2018). Groundwater elevations measured in these monitoring wells during each of the monitoring visits are summarized in Table 21, below. Pressure transducers were installed in monitoring wells 1, 3, 4, 5, and 7 in February 2015 to monitor seasonal variations in groundwater elevation and to determine groundwater flow direction in the immediate area. The transducer in monitoring well 5 is out of operation, but the other four pressure transducers provide continuous water level data. Data collected from February 2015 – May 2018 indicated that groundwater levels peak in July

and August, decrease throughout the fall and winter, and then begin to rise in April and May (USACE 2018). The magnitude of seasonal fluctuation is approximately 3 to 4 ft. Greater variability is observed in wells nearest the Chilkat River Slough, indicating that the slough influences groundwater elevations at the site. The amount of discharge in the Chilkat River Slough also influences the direction of groundwater flow at the site. In the summer, when river stage in the slough is high, groundwater flows east to southeast, away from the slough. When river stage is low (in the fall, winter, and early spring), groundwater flows west to southwest, toward the slough. The exception is during large rainfall or thaw events, when groundwater flows away from the slough, as in summer months (USACE 2018).

Table 21. Measured groundwater elevations in the 8 monitoring wells at PMP 17.7

Monitoring Well	Surveyed ground elevation[1] (ft. NAVD88)	Groundwater Elevations[2] (ft. NAVD88)				
		July 2014	November 2015	April/ May 2016	April 2017	March 2018
17-MW1	64.895	62.81	61.79	61.69	61.90	Not Measured (ice)
17-MW2	64.955	63.07	61.50	61.77	62.06	60.47
17-MW3	65.964	62.91	61.56	61.82	62.17	60.78
17-MW4	64.522	64.14	61.44	61.67	62.09	60.34
17-MW5	65.684	63.22	61.30	61.68	62.03	60.32
17-MW6	66.297	63.29	61.27	61.67	62.19	60.59
17-MW7	67.507	63.31	61.01	61.49	62.20	60.51
17-MW8	66.170	63.34	61.20	61.57	62.22	60.52
[1]USACE 2014, [2]USACE 2018						

Since 2006, the extent and severity of fuel contamination at the PMP 17.7 site has been investigated and monitored through soil, groundwater, and surface water sampling. Results of groundwater quality monitoring at the site are discussed in Section 3.6, along with results of soil sampling and chemical analyses.

3.14.2 Environmental Consequences

An alternative could significantly impact water resources if it would result in any of the following:

- Alterations to hydrology and the floodplain;
- Long-term impacts to water quality parameters; or
- Accidental spills from construction equipment.

3.14.2.1 Alternative 1 No Action Alternative

Under Alternative 1, the No Action Alternative, dynamic channel migration within the Chilkat River floodplain would continue to influence hydrology in the vicinity of the project site. Decommissioning of the monitoring wells would not impact surface water hydrology, groundwater hydrology, or floodplain storage. A drill rig would be used to decommission the wells, resulting in minor soil disturbance at the site of each monitoring well. In addition, use of the drill rig would require that petroleum products and hazardous materials such as fuels, oils, and lubricants be present onsite. During the decommissioning process, the implementation of mitigation measures and a SWPPP would ensure that impacts to water quality were less than significant. See section 3.6 for a discussion of the potential for natural degradation of groundwater contaminants.

3.14.2.2 Alternative 2 Institutional Controls and Monitored Natural Attenuation

Under Alternative 2, impacts would be similar to those occurring under Alternative 1, but the potential for impacts would be lower, as the monitoring wells would not be decommissioned. Maintenance of the well network would not impact water resources in the project area. There would be no impact to surface water hydrology, groundwater hydrology, water quality, or floodplain storage. See section 3.6 for a discussion of the potential for natural degradation of groundwater contaminants.

3.14.2.3 Alternative 3 Source Excavation and Monitoring

Under Alternative 3, excavation of contaminated soils in the source area and smear zone would not impact surface water hydrology or floodplain storage in the project area. Groundwater hydrology could be temporarily impacted in the event that it is necessary to pump groundwater out of the excavation to meet the project objectives. Extracted groundwater would be discharged into a lined settlement pond, treated with GAC, and discharged within the project area, contingent on ADEC approval. Once excavation was complete and excavated areas were backfilled with clean, geotechnically-suitable soils, groundwater levels would return to normal levels. The impact on groundwater hydrology due to pumping would therefore be temporary and less than significant.

During excavation, stormwater runoff from temporarily disturbed construction and staging areas could contribute sediment laden runoff to water bodies and increase turbidity. Construction areas would be isolated from water bodies to the degree possible by sediment-containment fences. With the implementation of these measures, a SWPPP, and other BMPs identified in Section 2, stormwater-related impacts on water resources would be less than significant.

During construction, petroleum products and hazardous materials such as fuels, oils, and lubricants would be present onsite, primarily in vehicles and construction equipment. Use of these materials increases the risk of accidental discharge into riparian areas or directly into the Chilkat River Slough or the constructed chum salmon spawning channel. Impacts would be reduced to less than significant by implementation of a SWPPP as well as use of standard construction BMPs designed to best contain hazardous materials and reduce the chances of spills or leaks. These measures are described in Section 2. Construction actions under this alternative would have less than significant impacts on water resources in and around the excavation area.

The actions of removing and treating the soils and groundwater in the source area and smear zone would result in greatly reduced concentrations of contaminants in the project area, and would diminish the possibility of contaminated groundwater moving into the Chilkat River Slough. This would be a beneficial impact. The USACE would continue to monitor contaminant levels in groundwater and in the seep on the bank of the Chilkat River Slough to evaluate the effectiveness of this action.

3.14.2.4 Alternative 4 Source Excavation, In-situ Treatment, and Monitoring (Preferred Alternative)

Under Alternative 4, excavation will proceed as planned for Alternative 3. Impacts to groundwater hydrology will be temporary and less than significant. As under Alternative 3, the implementation of mitigation measures and a SWPPP will ensure that construction-related impacts to water resources are less than significant.

Under Alternative 4, in-situ treatment materials will be incorporated adjacent to smear zone contamination that cannot be removed, such as under the highway. In addition, an oxygen-releasing compound and/or activated carbon will be incorporated into the backfill material prior to placing the

material into the excavations. For a discussion of the impact of these treatment methods on groundwater quality, please refer to section 3.6.

3.15 Cumulative Impacts

Cumulative impacts are evaluated by reviewing the effects of past, present, and reasonably foreseeable future actions within a given area. This section provides a review of past, present, and future actions together with the proposed action, to provide an assessment of the cumulative impact of all actions.

Previous actions that have altered the natural or human environment in the project area include the construction of the Haines Highway in the 1940s, the installation of the HFP in the 1950s, and the subsequent decommissioning of the HFP in the 1970s. Since the original construction, the Haines Highway has undergone periodic maintenance events, and a redesign effort along several sections of the highway in order to meet current state highway standards (ADOT&PF 2019).

Reasonably foreseeable future actions include continuation of the effort to reach the highway standard. In 2016, plans for completing improvements to the highway were initiated. The Haines Highway Improvements Project for the section between MP 3.9 and 25 is an ongoing project that includes realignment, widening, and straightening of portions of the highway to meet the 55-mph state highway standard (ADOT&PF 2019). Construction was initiated in 2019 and will continue through 2021 or beyond.

The proposed contaminant remediation alternative will not result in significant adverse effects to any of the resource areas evaluated in this EA. Instead, the removal of contaminants from the environment will provide an incremental improvement to soil, sediment, groundwater and surface water quality, a reduction in POL contamination in the environment, and will aid in protection of biological resources and public health.

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4 CONSULTATION AND COORDINATION

American Indian Religious Freedom Act of 1978, 42 U.S.C. § 1996

Requires Federal agencies to ensure that religious rights of Native Americans are accommodated during project planning, construction, and operation. Representatives from the Chilkat Indian Village and Chilkoot Indian Association have been notified of the planning of this project through the public outreach phase.

Archaeological Resources Protection Act of 1979, 16 U.S.C. §§ 470aa-470mm

Secures the protection of archaeological resources and sites which are on public lands and Native American lands. The USACE will coordinate with SHPO and Tribal interests throughout the planning and public outreach phase to ensure protection of archeological resources.

Bald and Golden Eagle Protection Act of 1940, 16 U.S.C. § 668 et seq.

Prohibits the take, possession, or disturbance of any bald or golden eagle. Coordination with the USFWS throughout the planning process will ensure protection of bald and golden eagles during construction. This EA provides a review of the avoidance and minimization measures that will be taken under the selected alternative to ensure consistency with this law.

Clean Air Act, as amended, 42 U.S.C. § 7401–7671q

Requires Federal agencies to control and abate air pollution. The project will not violate air quality standards and is in compliance with the Clean Air Act.

Clean Water Act, as amended, 33 U.S.C. 1251–1387 § 401

Requires Federal agencies to comply with state water quality standards. This EA details the process by which a FUDS will be remediated in order to curtail ongoing water quality contamination. It also provides measures to ensure that the remediation process will not introduce additional contaminants into surface water.

Clean Water Act, as amended, 33 U.S.C. 1251–1387, § 402

Section 402 compliance is needed for projects that may discharge stormwater to surface waters. The USACE will develop a SWPPP and implement BMPs for Section 402 compliance. If needed, USACE will obtain an NPDES stormwater permit for the excavation and temporary soil stockpile locations.

Clean Water Act, as amended, 33 U.S.C. 1251–1387 § 404

Section 404 requires Federal agencies to protect waters of the United States. It regulates the discharge of dredged or fill material into waters (and excavation) unless it can be demonstrated there are no reasonable alternatives. Nationwide Permit 38 authorizes specific activities required to affect the containment, stabilization, or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority. Instead of issuing itself a Section 404 permit, the USACE incorporates by reference the Nationwide Permit No. 38 Cleanup of Hazardous and Toxic Waste (40 CFR 1502.21). As the State of Alaska has certified all Nationwide Permits, there is no need to obtain a CWA Section 401 Certificate of Reasonable Assurance for projects that fall under Nationwide Permit No. 38. Additionally, the Pre-construction Notification (PCN) required under General Condition 31 to this NWP does not apply to this project, as the USACE is adopting the analysis behind the NWP and not the permit itself.

Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of the NEPA, 40 C.F.R. §§ 1500–1508

Document provides regulations applicable to and binding on all Federal agencies for implementing the procedural provisions of NEPA. This EA has been prepared under the guidelines provided in the CEQ regulations document.

Endangered Species Act as amended (16 U.S.C. §§ 1531–1544)

Requires Federal agencies to protect listed species and consult with USFWS or NMFS regarding the proposed action. The USACE has determined that no listed species will be affected by the proposed action and no Biological Opinions or Incidental Take Statements are required.

Fish and Wildlife Coordination Act (16 U.S.C. §661 et seq.)

Requires Federal agencies to consult with the USFWS on any activity that could affect fish or wildlife. Coordination with the USFWS will occur throughout the planning phase and preparation of the EA.

Magnuson-Stevens Fishery Conservation and Management Act - Fishery Conservation Amendments of 1996, (16 U.S.C. §§ 1801–1883) – Essential Fish Habitat (EFH)

Governs marine fisheries management, protects and enhances fisheries populations, including anadromous fish migrating through the project area. This EA evaluates potential effects to EFH and finds that there will be no adverse impact.

Migratory Bird Treaty Act (16 U.S.C. §§ 703-712)

Prohibits the take, possession or disturbance of any migratory bird, nests, or eggs without a Federal permit. Coordination with the USFWS throughout the planning process will ensure protection of MBTA species during construction.

National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. §§ 4321–4347)

Requires Federal agencies to consider the environmental effects of their actions and to seek to minimize negative impacts. This EA has been prepared to identify environmental impacts and make a determination of the need for preparation of an Environmental Impact Statement (EIS).

National Historic Preservation Act (16 U.S.C. §§ 470 and 36 CFR 800): Protection of Historic Properties

Requires Federal agencies to identify and protect cultural and historic resources. The USACE is coordinating with Tribal representatives and the Alaska SHPO. The USACE will continue this coordination to meet requirements of Section 106 of the NHPA during the construction phase.

Noise Control Act of 1972, 42 U.S.C. §4901 et seq.

Established a national policy to promote an environment free from noise that jeopardize health and welfare. This EA evaluates the potential for the selected alternative to increase noise during construction or operation and finds that no significant impact to noise will occur.

Rivers and Harbors Act of 1899 (33 U.S.C. § 403)

The creation of any obstruction to the navigation of any waters of the U.S. is prohibited without congressional approval. The proposed action will not affect navigable waters.

Environmental Quality Formerly Used Defense Sites (FUDS) Program Policy Engineering Regulation (ER) 200-3-1, 10 May 2004

This regulation provides specific policy and guidance for management and execution of the Formerly Used Defense Sites (FUDS) program. This EA has been prepared in accordance with FUDS regulatory guidelines to document the process of contaminant remediation at a non-NPL FUDS.

Executive Order 11988, Floodplain Management, 24 May 1977

Executive Order (EO) 11988 (May 24, 1977) requires a Federal agency, when taking an action, to avoid short- and long-term adverse effects associated with the occupancy and the modification of a floodplain. The proposed action will not induce development of a floodplain and is in compliance with this EO.

Executive Order 11514, Protection and Enhancement of Environmental Quality

Assigns responsibility to Federal agencies to protect and enhance the quality of the Nation's environment. Preparation of the EA will ensure that environmental conditions are protected.

Executive Order 11990, Protection of Wetlands

Requires Federal agencies to protect wetland habitats. The USACE is designing this project to affect wetlands to the least degree possible. The site will be regraded upon completion of the project and it is likely that a wetland plant community will regenerate within one year.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

Requires Federal agencies to consider and minimize potential impacts on low income or minority communities. This EA includes evaluation of impacts to Environmental Justice communities in the project area.

Executive Order 13007, Indian Sacred Sites

Directs Federal agencies to provide access and ceremonial use of sacred sites on Federal lands and avoid affecting their physical integrity. No Federally-owned lands are known in the project area. Should such lands be identified in the future, the USACE and the relevant Federal agency will consult with appropriate Tribes to determine if any sacred sites are located on those lands.

Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks

Requires Federal agencies to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. Preparation of the EA includes the evaluation of environmental health and safety risks and measures necessary to protect children from those risks.

Executive Order 13175, Consultation and Coordination with Indian Tribal Governments

Directs Federal agencies to recognize Native American sovereignty in government-to-government relationships and to consult with Tribes in adopting regulatory policies that have Tribal implications. The USACE is consulting with Tribal representatives to identify and address concerns in the study area. The USACE will also consult with Tribes in decisions regarding proposed measures and alternatives.

Executive Order 13751, Safeguarding the Nation from the Impacts of Invasive Species

Requires Federal agencies to take reasonable measures to prevent the spread and introduction of invasive species as a result of their management or construction actions. This EA contains mitigation measures to prevent spread of invasive species.

Executive Order 13287, "Preserve America"

Enhances practices that protect the cultural heritage of the U.S. The USACE will identify any historic properties it manages in the study area and determine if any proposed actions will affect those properties.

Alaska Chilkat Bald Eagle Preserve

The Alaska Chilkat Bald Eagle Preserve (Preserve) was established in 1982 (Alaska Statutes § 41.21.610 – 630). The statute established the Preserve as part of the state park system with the primary purpose of protecting and perpetuating the Chilkat bald eagles and their essential habitats. The Preserve is also statutorily intended to (1) protect and sustain the natural salmon spawning and rearing areas of the Chilkat River and Chilkoot River systems within the preserve in perpetuity; (2) provide continued opportunities for research, study and enjoyment of bald eagles and other wildlife; (3) ensure to the maximum extent practicable water quality and necessary water quantity under applicable laws; (4) provide for other public uses consistent with the primary purpose for which the Alaska Chilkat Bald Eagle Preserve is established; and (5) provide an opportunity for the continued traditional and natural resource based lifestyle of the people living in the general areas described in AS 41.21.611(b), consistent with the other purposes of this subsection and (a) of this section.

5 COMMUNITY PARTICIPATION

USACE Alaska District released the Draft EA for a 30-day public comment period starting on February 5, 2020. The public was encouraged to provide comments on the alternatives presented in the EA. The public comment period ended on March 6, 2020.

Comments were submitted to USACE by the following methods:

- Mailed to the following address:
  ATTN: CEPOA-PM-ESP-FUDS (Astley), PO Box 6898, JBER, AK 99506
- Emailed to the following address:
  POA-FUDS@usace.army.mil
- Submitted in person at the public meeting:

PUBLIC MEETING

February 13

7:00 – 8:30 PM

Chilkat Center for the Arts

Haines, Alaska

Comments were received from nine sources, including the Chilkat Indian Village (CIV), two state government agencies, one local government assembly, two local organizations, and three private citizens. Most of the comments encompassed more than one topic discussed in the EA and were written by the leader of a group or organization on behalf of its individual members.

Three government agencies and elected officials provided comments, including:

- Haines Borough Assembly
- Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation
- Alaska Department of Fish and Game

Two comments came from local organizations, including:

- Lynn Canal Conservation
- Takshanuk Watershed Council

Three comments were submitted from individual residents. The nine letters received were broken down into 136 individual comments and categorized into five general groups including tribal concerns, landfarming-related concerns, alternatives analysis, environmental impacts, and data corrections, clarifications, or insufficiencies. A table containing the 136 comments in addition to the USACE's responses is attached to the Final EA. The table and a final comment summary memorandum are available in the Administrative Record located at the Information Repository.

Evaluation of public comments was a significant factor in the final alternative selection. A final decision for each of the alternatives evaluated in this EA was made only after public comments were considered. USACE provided a written or in-person response to all significant comments.

For additional information, please contact:

Beth Astley

USACE Project Manager

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Information Repository Location

Additional detailed information that is not presented in this Environmental Assessment (documents that detail previous investigations, remedial actions, and results) is available for review in the project Administrative Record file, located at the Information Repository for the Haines-Fairbanks PMP 17.7 Project at the Haines Library, 111 3rd Ave, in Haines, Alaska.

Electronic Copy

An electronic copy of this Environmental Assessment is available at https://www.poa.usace.army.mil/Library/Reports-and-Studies.

6 REFERENCES

ABEF (American Bald Eagle Foundation). 2019. Alaska Bald Eagle Festival. Available at https://baldeagles. org/alaska-bald-eagle-festival/about/. Accessed June 2019.

ABPA (Alaska Bicycle and Pedestrian Alliance). 2011. U.S. Bicycle Route System Adds Four New Routes in Alaska. Available at https://akpedbikealliance.wordpress.com/tag/haines-highway/. Accessed June 2019.

ACCS (Alaska Center for Conservation Science). 2019a. Alaska Land Cover and Wetlands Mapper. Available at https://composite.accs.axiomdatascience.com/#. Accessed June 2019.

_____. 2019b. Alaska Exotic Plants Information Clearinghouse Data Portal. Available at https://aknhp.uaa.alaska.edu/apps/akepic/#. Accessed June 2019.

_____. 2019c. Conservation Data Portal. Wildlife Data Portal. Available at https://aknhp.uaa.alaska.edu/apps/wildlife/. Accessed June 2019.

ACS (U.S. Census Bureau American Community Survey). 2019. American Community Survey 2013-2017 5-Year Estimates. Data retrieved using American Fact Finder website. Available at https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t. Accessed June 2019.

_____. 2018a. State of Alaska 2014/2016 Final Integrated Water Quality Monitoring and Assessment Report. Published on November 2, 2018. Available at http://dec.alaska.gov/water/water-quality. Accessed June 2019.

_____. 2018b. Alaska DEC WQ Monitoring Locations. Last updated May 23, 2018. Available at http://data-soa-adec.opendata.arcgis.com/. Accessed June 2019.

_____. 2019. Integrated Water Quality Monitoring and Assessment Report – website. Available at http://dec.alaska.gov/water/water-quality/integrated-report/. Accessed June 2019.

ADF&G (Alaska Department of Fish and Game). 2014. Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes – Southeastern Region, Effective June 1, 2014. Special Publication No. 14-04. Available at https://www.adfg.alaska.gov/anadromouspdfs/ 2014sea_CATALOG.pdf. Accessed June 2019.

_____. 2015. 2015 Alaska Wildlife Action Plan. A plan for managing fish and wildlife species and their habitats to help prevent listings under the Endangered Species Act. Juneau.

_____. 2019a. Invasive Species Overview. Available at http://www.adfg.alaska.gov/index.cfm?adfg=invasive. main. Accessed July 2019.

_____. 2019b. State of Alaska Special Status Species. Fish Stocks of Concern. Available at http://www.adfg. alaska.gov/index.cfm?adfg=specialstatus. akfishstocks. Accessed June 2019.

_____. 2019c. Chilkat River – Critical Habitat Area. Available at http://www.adfg.alaska.gov/index.cfm?adfg= chilkatriver.species. Accessed June 2019.

_____. 2019d. Community Subsistence Information System (CSIS). Available at https://www.adfg. alaska.gov/sb/CSIS/. Accessed June 2019.

ADHSS (Alaska Department of Health and Social Services). 2019. Public Health Alert Network (PHAN). Available at http://dhss.alaska.gov/dph/Epi/Pages/phan/default.aspx. Accessed June 2019.

ADNR (Alaska Department of Natural Resources). 2002a. Haines State Forest Management Plan. Available at http://forestry.alaska.gov/Assets/pdfs/timber/haines/hsfpfinal.pdf. Accessed June 2019.

_____. 2002b. Chilkat Bald Eagle Preserve Management Plan. Available at http://dnr.alaska.gov/parks/plans/eaglpln/eaglepln.htm. Accessed June 2019.

_____. 2018. Active faults and seismic hazards in Alaska. Prepared by R.D. Koehler, G.A. Carver, and the Alaska Seismic Hazards Safety Commission. Published by the Alaska Division of Geological & Geophysical Surveys. Available at http://dggs.alaska.gov/pubs/id/29705. Accessed June 2019.

_____. 2019. Alaska Chilkat Bald Eagle Preserve. Division of Parks and Outdoor Recreation. Available at http://dnr.alaska.gov/parks/units/eagleprv.htm. Accessed June 2019.

ADOT&PF (Alaska Department of Transportation). 2011. Haines Highway digital terrain model. Available at https://elevation.alaska.gov/. Accessed June 2019.

_____. 2016. Haines Highway MP 3.5 to MP 25.3 Haines, Alaska. Final Revised Environmental Assessment, Finding of No Significant Impact, and Section 4(f) Evaluation. Available at http://dot.alaska.gov/sereg/projects/haines_hwy/documents.shtml. Accessed June 2019.

_____. 2018. Alaska Environmental Procedures Manual, Noise Policy.

_____. 2019. Alaska Traffic Counts – AADT. 2017 Average Annual Daily Traffic Counts: Haines Highway. Available at http://dot.alaska.gov/stwdplng/transdata/traffic_AADT_map.shtml. Accessed June 2019.

ADPS (Alaska Department of Public Safety). 2019. Division of Alaska State Troopers. Available at https://dps.alaska.gov/Home. Accessed June 2019.

AKDLWD (State of Alaska Department of Labor and Workforce Development Research & Analysis). 2019. Alaska Population Estimates webpage and data portal. Available at http://live.laborstats.alaska.gov/pop/. Accessed June 2019.

Bugliosi. E.F. 1988. Hydrologic reconnaissance of the Chilkat River Basin Southeast Alaska with Special Reference to the Alaska Chilkat Bald Eagle Preserve. U.S. Geological Survey Water-Resources Investigations Report 88-4023. Available at https://pubs.usgs.gov/wri/1988/4023/report.pdf. Accessed June 2019.

CEMML (Center for Environmental Management of Military Lands). 2003. The Haines-Fairbanks Pipeline. Written by Kristy Hollinger, Edited by Glenda R. Lesondak.

CEQ (Council on Environmental Quality). 2007. A Citizen's Guide to the NEPA: Having Your Voice Heard. Prepared by CEQ, Executive Office of the President. Washington, D.C.

DHHS (Department of Health and Human Services). 2019. 2019 Poverty Guidelines, U.S. Federal Poverty Guidelines Used to Determine Financial Eligibility for Certain Federal Programs. Available at https://aspe.hhs.gov/2019-poverty-guidelines. Accessed June 2019.

DNR DMLW and DNR DPOR (Department of Natural Resources, Division of Mining, Land & Water and Division of Parks and Outdoor Recreation). 2002. Chilkat Bald Eagle Preserve

Management Plan, September 2002. Prepared by DNR DMLW Resource Assessment and Development Section and DNR DPOR. Available online at http://dnr.alaska.gov/parks/plans/eaglpln/eaglepln.htm. Accessed July 2019.

Duan W., F. Meng, F. Wang, and Q. Liu. 2017. Environmental behavior and eco-toxicity of xylene in aquatic environments: a review. Ecotox. Environ. Safety 145:324-332.

FHWA (Federal Highway Administration). 2019. America's Byways. Available at https://www.fhwa. dot.gov/byways/byways. Accessed June 2019.

Haines Borough Ordinance. 2019. Title 7 Service Areas. Available at https://www.codepublishing. com/AK/HainesBorough/html/HainesBorough07/HainesBorough07.html. Accessed June 2019.

Haines Borough. 2012. Haines Borough 2025 Comprehensive Plan. Available at https://www.hainesalaska. gov/cp2025. Accessed June 2019.

Kanouse, Kate. 2020. Biologist, ADF&G. Personal communication between USACE Project Manager Beth Astley and ADF&G biologist Kate Kanouse.

KCIBR (Kluane Chilkat International Bike Relay). 2019. Relay Information. Available at https://kcibr.org/ content/relay-information. Accessed June 2019.

Koski, K. 2019. Personal Communication. Seasonal Counts Planner, Southcoast Region, ADOT&PF, 3132 Channel Drive, PO Box 112500, Juneau AK 99811-2500, personal communication via email on July 2019.

MHTA (Mental Health Trust Authority). 2019. Trust Land Office Land Use Application. Available at http://dnr.alaska.gov/mhtlo/TLO_LandActivity/. Accessed June 2019.

NMFS (National Marine Fisheries Service). 2018. Alaska Essential Fish Habitat (EFH) Mapper. Available at https://www.fisheries.noaa.gov/resource/map/alaska-essential-fish-habitat-efh-mapper. Accessed June 2019.

NPFMC (North Pacific Fishery Management Council). 2012. Fishery Management Plan for the Salmon Fishers in the EEZ Off Alaska. Available at https://www.npfmc.org/wp-content/PDFdocuments/fmp/ Salmon/SalmonFMP114.pdf. Accessed June 2019.

NRCS (National Resources Conservation Service). 2013. Web Soil Survey – Haines Area, Alaska (AK641). Spatial Data. Available at https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed June 26, 2019.

_____. 2018. Web Soil Survey – Haines Area, Alaska (AK641). Tabular Data. Available at https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey .aspx. Accessed June 26, 2019.

NWI (National Wetland Inventory). 2019. The National Wetlands Inventory Mapper. Available at https://www.fws.gov/wetlands/data/mapper.html. Accessed June 2019.

Scholl, Jim. Environmental Analyst, ADOT&PF Southcoast Region, 6860 Glacier Highway, POB 112506, Juneau Alaska 99811-2506, personal communication via email on June 2019.

Southeast Conference. September 2018. Southeast Alaska by the Numbers 2018. Central Council Tlingit and Haida Indian Tribes of Alaska. Available at http://www.seconference.org/recent-publications. Accessed June 2019.

USACE (U.S. Army Corps of Engineers). 1972. Preliminary Investigations of Petroleum Spillage, Haines-Fairbanks Military Pipeline, Alaska. Special Report 170. Cold Regions Research and Engineering Laboratory.

_____. 2002. Appendix B Economics, Feasibility Study of Navigation Improvements, Haines Alaska. Alaska District, U.S. Army Corps of Engineers. Prepared by Tetra Tech, Inc.

_____. 2007. Final Report for Haines-Fairbanks Pipeline Site Investigation. Prepared by ENSR. F10AK1016_01.09_0500_a. May.

_____. 2008. Final Report, 2007 Haines-Fairbanks Pipeline Site Investigation. Prepared by CH2M HILL. F10AK101601_01.09_0505_a. July.

_____. 2009. Final Geotechnical Report, Haines-Highway, Volume I of II, State Project No. 68606, Haines AK. Prepared by DOWL HKM. January.

_____. 2012. Fact Sheet Formerly Used Defense Sites. Available at https://www.usace.army.mil/Media/Fact-Sheets/Fact-Sheet-Article-View/Article/475485/formerly-used-defense-sites/. Accessed July 2019.

_____. 2013. Final Remedial Investigation Report Haines Area Sites (PMP 1.9, 17.7, 19.5, and 25.5), Haines-Fairbanks Pipeline, Formerly Used Defense Site, Haines, Alaska. Prepared by FES. F10AK101601_ 06.02_0502_p, F10AK101602_06.02_0500_p, F10AK101603_06.02_0500_p and F10AK101614_06.02_0500_p. April.

_____. 2014. Final Report Additional Environmental Investigation Haines Area Sites (PMP 17.7, 19.5, and 25.5). Haines-Fairbanks Pipeline Formerly Used Defense Site, Haines, Alaska. Published December 2014. Prepared for the U.S. Army Corps of Engineers, Alaska District. Prepared by Fairbanks Environmental Services.

_____. 2017. Final 2016 Groundwater Sampling Report. November, 2017. F10AK101614_06.07_0500_p

_____. 2018a. 2018 Groundwater Sampling Report - Final. Haines-Fairbanks Pipeline Formerly Used Defense Site (FUDS) F10AK101614 (PMP 17.7) and F10AK101615 (PMP 25.5) Haines, Alaska. November 2018.

_____. 2018b. 2017 Groundwater Sampling Report - Final. F10AK101614_06.02_0507_p and F10AK101615_06.02_0505_p. February.

_____.2019. 2019 Groundwater Sampling Report - Final. Haines-Fairbanks Pipeline Formerly Used Defense Site (FUDS) F10AK101614 (PMP 17.7) and F10AK101615 (PMP 25.5) Haines, Alaska August 2020 F10AK101614_06.02_0510_a, F10AK101615_06.02_0508_a 1200C PERM

USDOT (U.S. Department of Transportation). 2012. Department of Transportation Order 5610.2(a), Final DOT Environmental Justice Order. Available at https://www.fhwa.dot.gov/environment/environmental_ justice/ej_at_dot/orders/order_56102a/. Accessed June 2019.

USEPA (U.S. Environmental Protection Agency). 2018. Region 4 Ecological Risk Assessment Supplemental Guidance, Scientific Support Section, Superfund Division. March. https:/'/www.epa.gov/risk/region-4-risk-assessment-contacts

_____. 2019. Superfund: National Priorities List. Available at https://www.epa.gov/superfund/superfund-national-priorities-list-npl. Accessed July 2019.

USFWS (U.S. Fish and Wildlife Service). 2019. Environmental Conservation Online Program. Information for Planning and Consultation (IPAC). Available at ecos.fws.gov. Accessed June 2019.

USGS (U.S. Geological Survey). 2015. Geologic Map of Alaska: U.S. Geological Survey Scientific Investigations Map 3340. Prepared by Wilson, F.H., Hults, C.P., Mull, C.G, and Karl, S.M. Available at https://pubs.er.usgs.gov/publication/sim3340. Accessed June 2019.

_____. 2019a. The National Map. Available at https://www.usgs.gov/core-science-systems/national-geospatial-program/national-map. Accessed June 2019.

_____. 2019b. USGS 150565 Chilkat R NR Klukwan AK. Discharge data. Available at https://waterdata.usgs. gov/ak/nwis/uv/?site_no=15056500&PARAmeter_cd=00065, 00060,00010,00020,70969. Accessed June 2019.

Verbrugge, Lori. 2019. Personal communication between David Munro of Tetra Tech and Lori Verbrugge, Ph.D, Toxicologist, U.S. Army Corps of Engineers, Alaska District.

Visit Haines. 2019. Haines Your Alaska, Getting to Haines. Available at https://www.visithaines.com/category/getting-haines. Accessed June 2019.

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Appendix A: SHPO Coordination Letter

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3130-1R COE-E

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, ALASKA DISTRICT
P.O. BOX 6898
JBER, AK 99506-0898

RECEIVED
SEP 13 2019
OHA

SEP 11 2019

Ms. Judith Bittner
State Historic Preservation Officer
Office of History and Archaeology
550 West 7th Avenue, Suite 1310
Anchorage, AK 99501-3565

Dear Ms. Bittner,

The U.S. Army Corps of Engineers (USACE), under the Formally Used Defense Sites (FUDS) Program is planning on conducting contaminated water and soil removal, in-situ treatment, and installation of groundwater monitoring wells at the Haines-Fairbanks Pipeline Mile Post section 17.7 (Section 23, T29S, R57E, USGS Quad Skagway B-3, Copper River Meridian, Figure 1). In compliance with Section 106 of the National Historic Preservation Act of 1966 [36 CFR § 800.2(a)(4)], the purpose of this letter is to notify you of a Federal undertaking and to seek your concurrence on an assessment of effect that the proposed undertaking will result in **no historic properties affected** per 36 CFR § 800.4(d)(1).

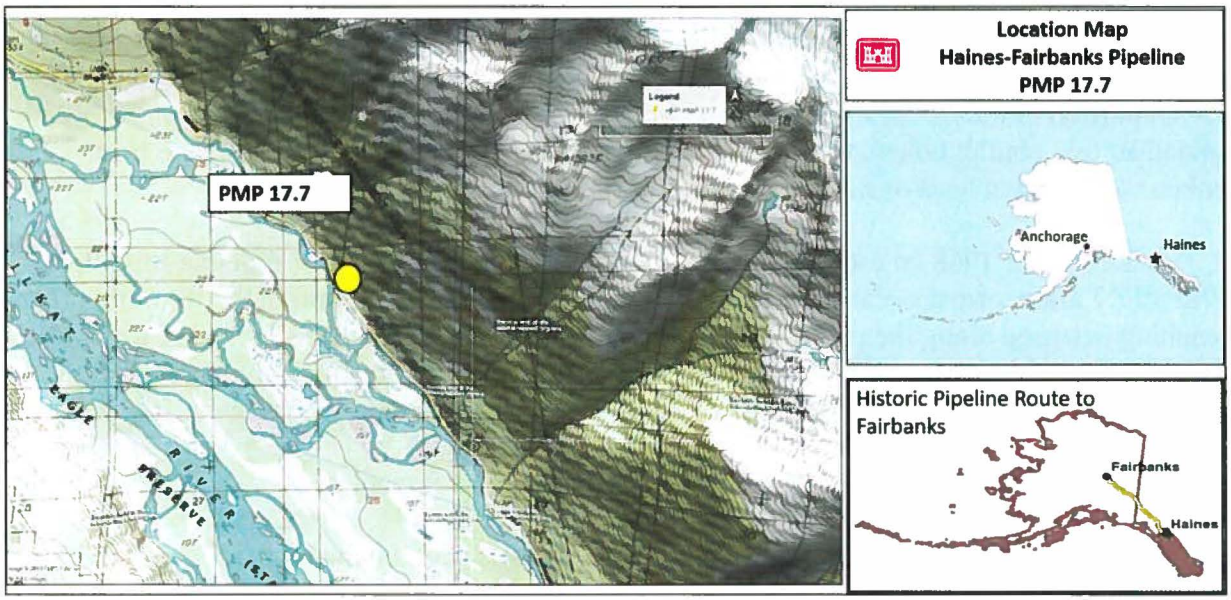

Figure 1. Project area overview.

Context

Haines was originally settled by the Chilkat Tlingit, who controlled trading routes between the coast and interior (DCRA 2019). A school and mission was constructed in Haines 1881. During the Klondike gold rush in the 1890s Haines operated as a mining supply center, suppling miners to travel the Dalton Trail. The first military post was established in 1904, dubbed Fort William H. Seward and was renamed Chilkoot Barracks in 1922 (Mighetto and Homstad 1997).

2019-01120

The Haines-Chilkat Road (Road No. 3) was constructed in 1906 consisting of a 12-foot wide gravel road (Yarborough 2014).

During World War II, there was an increasing need for fuel at military facilities in Alaska's interior regions. The 1,600-mile long Canadian American Gas Oil Pipeline (CANOL) was completed in 1944 to fulfill this need by moving Canadian crude oil to a refinery near Whitehorse then refined fuel to Fairbanks, Skagway, and Watson Lake. Because the pipe was inefficient, leaky, and expensive to maintain, the CANOL was shut down in 1945. However, fuel delivered to Skagway continued to be delivered on a limited basis to Fairbanks through the CANOL until 1958. The continued build-up of Alaskan military facilities during the Cold War necessitated a reliable fuel supply to interior military bases once again. The Haines-Fairbanks Pipeline (HFP) was built to fill this need; it operated from 1955 to 1973. The 626-mile-long pipe was eight inches in diameter and transported fuel from Haines to Fort Greely and the Eielson and Ladd Air Force Bases near Fairbanks. The pipe carried four types of fuel: diesel, automotive gas, jet fuel, and aviation gas. The original design included five pump stations, but in 1961, six "booster stations" were added in order to increase fuel output. The pipeline system delivered as much as 27,500 barrels of fuel a day (Hollinger 2003).

The pipeline was built by first clearing a 50-foot-wide corridor. All brush and organic material was pushed to the edges of the right-of-way (CEMML 2003:13). Much of the pipeline was laid on the ground surface, although approximately 96 miles near Delta Junction and most of the 42 miles between the Haines Fuel Terminal and the Canadian border were buried. Other, smaller intervals of the pipeline were also buried over time (CEMML 2003:15). The above-ground portion of the pipeline was plagued with leaks from corrosion, ice damage, and vandalism (e.g., bullet holes). Underground portions of the pipeline suffered damage from broken welds and at least one accidental breach from borehole drilling.

In December 1968 an estimated 33,600 gallons of fuel was spilled at Pipeline Mile Post (PMP) 17.7 after corrosion caused a leak in the line. Extensive excavation in the form of trenching occurred along the pipeline in an attempt to locate the high pressure leak. Fuel spilled into the excavated trenches and was subsequently pumped back into a tank and burned off numerous times in a steel vault or burn box. Today this section of the HFP remains in a water-filled trench approximately 15 feet northwest of the Haines Highway (Figures 2 and 3). The pipeline is currently being used as an utilidor by local utility companies.

In 1970, the Haines to Tok section of the pipeline was shut down and the Tok to Fairbanks section was closed in 1973. The pipeline section between Eielson Air Force Base and Fort Wainwright was used until 1992 and the tanks farms at Haines and Tok continued to be used for fuel storage. Tok tank farm was used for strategic fuel reserve storage until 1979 and Haines was used for the same purpose until 1988. After the Canada to Haines section of line was closed, fuel was delivered by truck to Tok from Anchorage.

Project Description

The proposed project is to address fuel-contaminated soils and water at the Haines-Fairbanks Pipeline Milepost 17.7 (PMP 17.7) Formerly Used Defense Site, located near Haines

Highway Milepost 15.5, north of the city of Haines (Figure 4). The site is located within the Alaska Department of Transportation and Public Facilities (ADOT&PF) Highway right-of-way. Although partial remediation of the fuel contaminants occurred shortly after the time of release, remaining contamination has been identified in the soils and groundwater through sampling performed by the U.S. Army Corps of Engineers, Alaska District. Until 2018, the contamination was understood to be confined to the soils and groundwater in the immediate project area, and was being actively monitored by the USACE. However, a 2019 groundwater monitoring survey identified what appeared to be contaminated groundwater emerging from a seep located near Chilkat River Slough, a tributary to the Chilkat River. The purpose of this action is to address sources of contamination to remove the completed pathways to the environment. The source removal action is intended as an intermediate step toward the remedy, rather than a final remedial decision for the project. The preferred alternative for this action is to excavate and treat up to 15,000 tons of fuel-contaminated soil, treat approximately 1 million gallons of groundwater and any contaminated soils using in-situ treatment methods to remediate any residual contamination. The excavated area would be backfilled and monitored to ensure project goals are met. The project is expected to occur in early spring of 2020 lasting an estimated 12 weeks ending in summer of 2020. Major aspects of the project requiring consultation under Section 106 of the National Historic Preservation Act (NHPA) include vegetation clearing and grubbing, construction of staging and stockpiling areas, soil excavation, groundwater monitoring, and on-site and in-situ treatment or removal of contaminated soils and water.

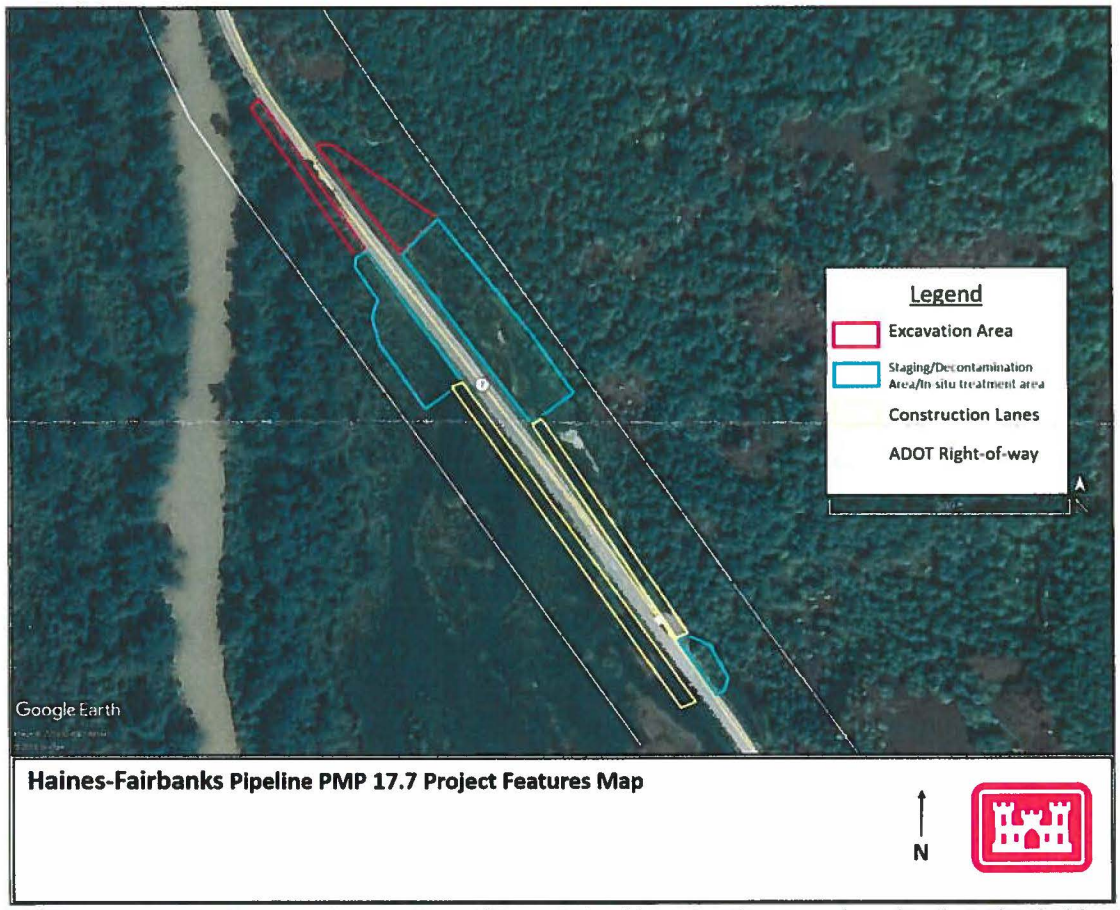

Figure 2. Features of proposed PMP 17.7 soil removal, with excavation areas in red and staging in blue.

Vegetation Clearing and Grubbing

Clearing and grubbing of vegetation along the edge of the Haines Highway shoulder and in the proposed project area will take approximately two weeks and would require removal of several large diameter trees. The approximate area for grubbing and brushing consists of approximately 0.75 acres with one additional acre to be cleared for equipment movement and staging areas.

Staging and Stockpile Areas

Excavated materials would be stockpiled within the proposed excavation area to the extent practical. Construction of a stockpile pad/equipment laydown area will be needed outside the excavation areas and most likely will be installed on the west side of the highway south of the proposed excavation area. Temporary staging areas would be constructed adjacent to or nearby the project site with the minimum footprint necessary. Staging areas would be removed after the completion of the excavation effort. Site backfill and restoration will occur following close of project activities.

Soil Excavation

Soil excavation is proposed to occur on both the east and west sides of the highway (see Figure 2). An estimated 13,500 square feet of POL-contaminated soil will be removed from the east side of the highway to a depth of approximately 10 feet, totaling approximately 7,500 tons of contaminated soil. West of the highway an estimated 9,300 square feet of contaminated soil will be excavated to a depth of five feet, totaling approximately 5,000 tons of contaminated soil. Excavation would not encroach on the existing highway road prism. Clearing and grubbing would take place on the highway shoulder, but, excavation, piping, and backfill would be completed only in areas sufficiently distant from the highway to ensure that the roadway embankment is not compromised.

Soil and In-Situ Treatment

Excavated soils are expected to be treated onsite or at another location within the greater Haines area via land farming. On site treatment of contaminated soils using a land farm would require an area suitable for excavated materials to be deposited and allowed to naturally attenuate without contaminating groundwater or surface water. A treatment location has yet to be selected, however an ideal location would be within trucking distance of the site. If an in-situ treatment is found not to be feasible the excavated material will be sent to a treatment facility out of state. If a treatment area is identified outside of the current APE, the USACE, Alaska District will consult on any new locations. Piping to support oxygen injection into the soil will be installed during excavation of contaminated soils. Following close of excavation, oxygen could be pushed into the soil in an effort to decrease bioremediation time of impacted soils.

Groundwater Monitoring

Groundwater monitoring wells currently exist within the excavation footprint and will be decommissioned prior to excavation of contaminated soil. Following close of excavation groundwater monitoring wells would be installed at the excavation area to allow for later groundwater testing.

Groundwater Treatment

The site is within the Chilkat River floodplain and as such is subject to groundwater fluctuations that rise and fall corresponding to precipitation events. Groundwater will be pumped out of the excavated areas and will be collected in lined containment areas to prevent seepage or leaks into the soil below. Collected water would be treated through a granular activated carbon (GAC) filtration station and discharged into a second lined contaminant area. Water in the second area would be tested and discharged into wetlands adjacent to the excavation area. Additionally,

Equipment

Equipment needed to complete the project includes heavy tracked construction equipment, Connex containers for storage, and construction of four (two each) lined staging cells to allow for storage of soil and dewatering and for storage and treatment of groundwater. A list of equipment and facilities likely to be needed during construction is in Table 1.

Table 1. Facilities and equipment to be required for the project.

Equipment Type	#
Tracked hydraulic excavator	2
Loader with 5-cubic yard bucket	1
Side or end dump trucks	3-10
½ ton trucks for contractor personnel	3
Connex container for tools and miscellaneous equipment	2
Granular activated carbon (GAC) filtration station	1
Lined soil staging cells, approximately 2,500 square feet	2
Lined water containment cells, 5,000 square feet with 10,000 cubic foot capacity	2

Site Demobilization

Upon completion of construction, clean topsoil will be spread over the excavated areas. The site will be recontoured to match existing topography to the extent practicable. Previously vegetated areas that are disturbed due to the contaminated soil removal may require seeding with certified weed-free native seed mixture and fertilizer, based on applicable land management requirements.

Figure 3. Overview of PMP 17.7 on east side of highway, pipeline was located along the right edge of the wetland, view NW (M. Grover 2007).

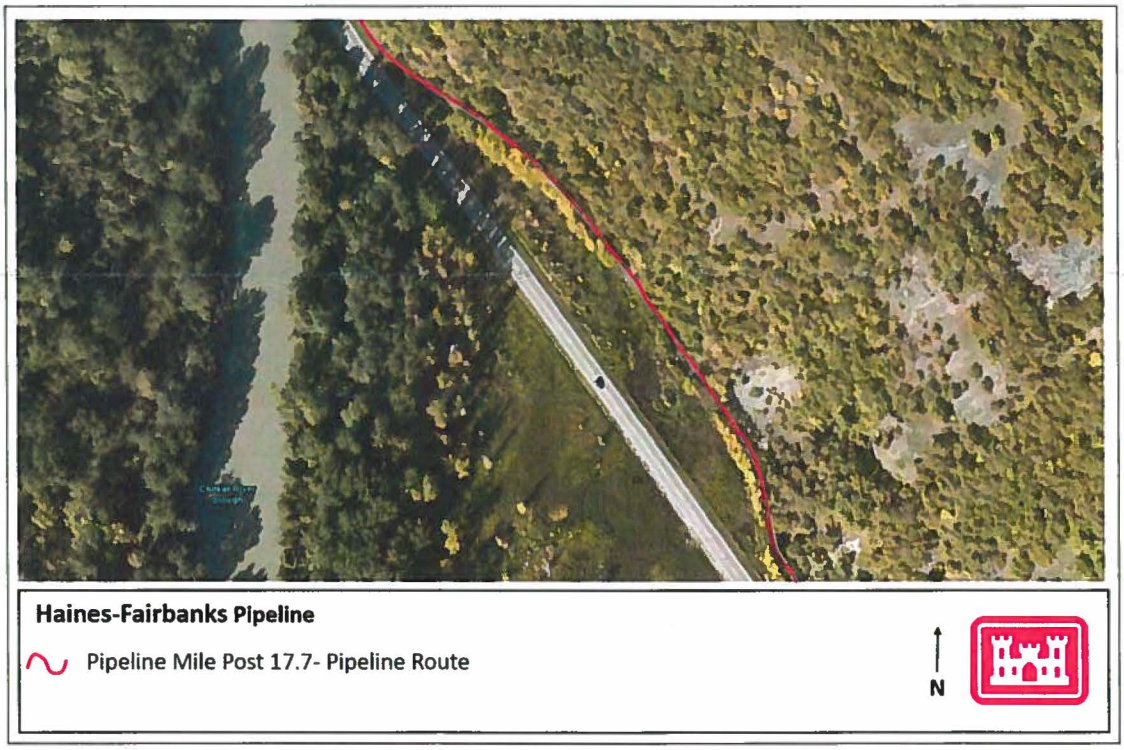

Figure 4. Approximate location of historic Haines-Fairbanks Pipeline route in red at Haines-Fairbanks PMP 17.7.

Area of Potential Effect

The Area of Potential Effect (APE) for this project includes sections of land located east and west of the Haines-Highway adjacent to Haines Highway Milepost 15.5 (Figure 5). This area consists of approximately 10.6 acres of land. The Haines Highway itself will also be used as a transportation route to access the site and as such is considered to be part of the APE, however use of the Haines-Highway outside of the proposed APE will be limited to the transportation only (Figure 6). Given that construction equipment traveling outside of the APE will be limited to the Haines Highway and other established roads, examination of cultural resources south and north of the project area along the highway is limited to those resources considered crossing the highway. Only two sites met this definition, these are SKG-00247 the Chilkat River-Haines Highway Bridge located approximately 8 miles north of the project area and SKG-00054 Yindastuki, a historic fishing village located approximately 11 miles southeast of the proposed project area.

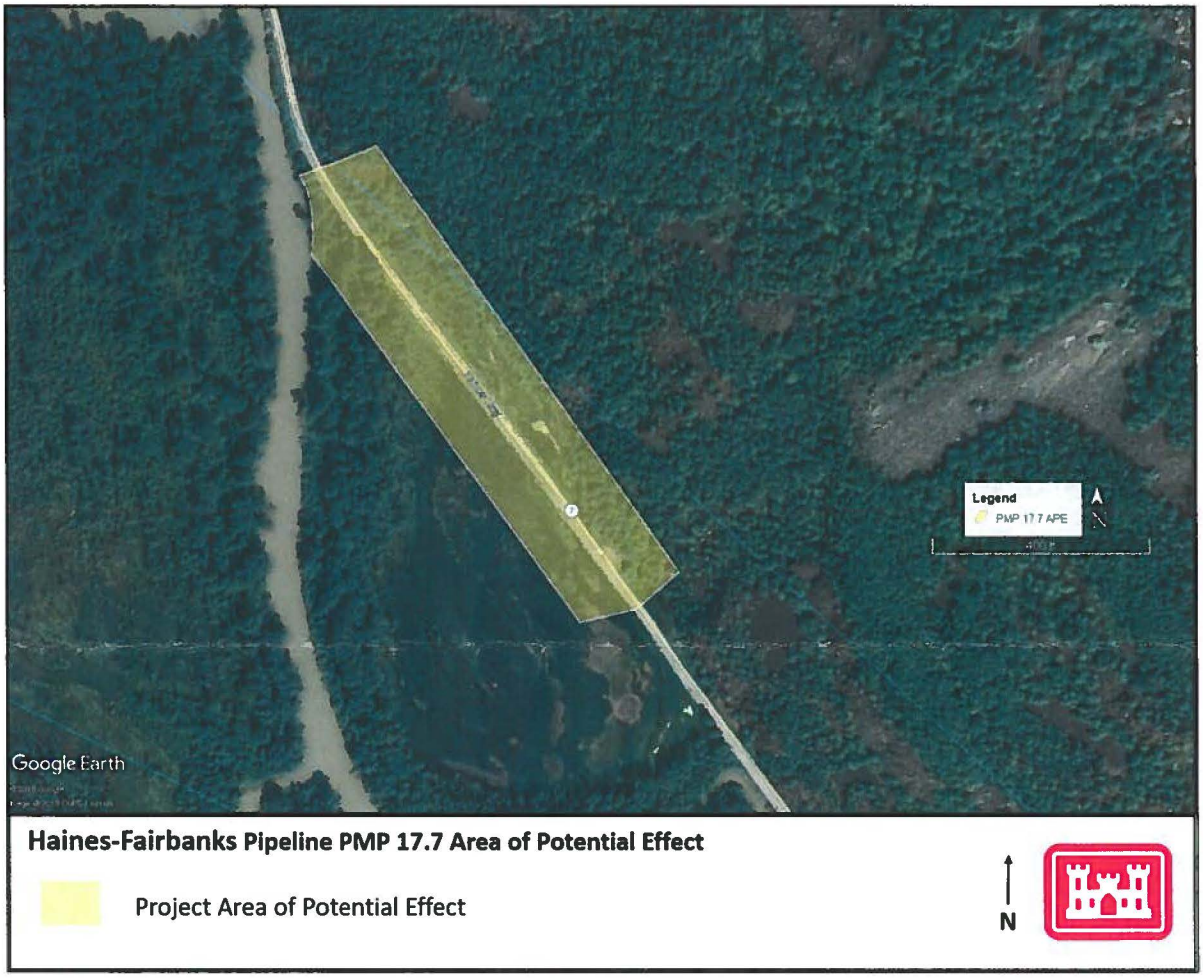

Figure 5. Defined Area of Potential Effect for the HFP PMP 17.7 removal action in yellow.

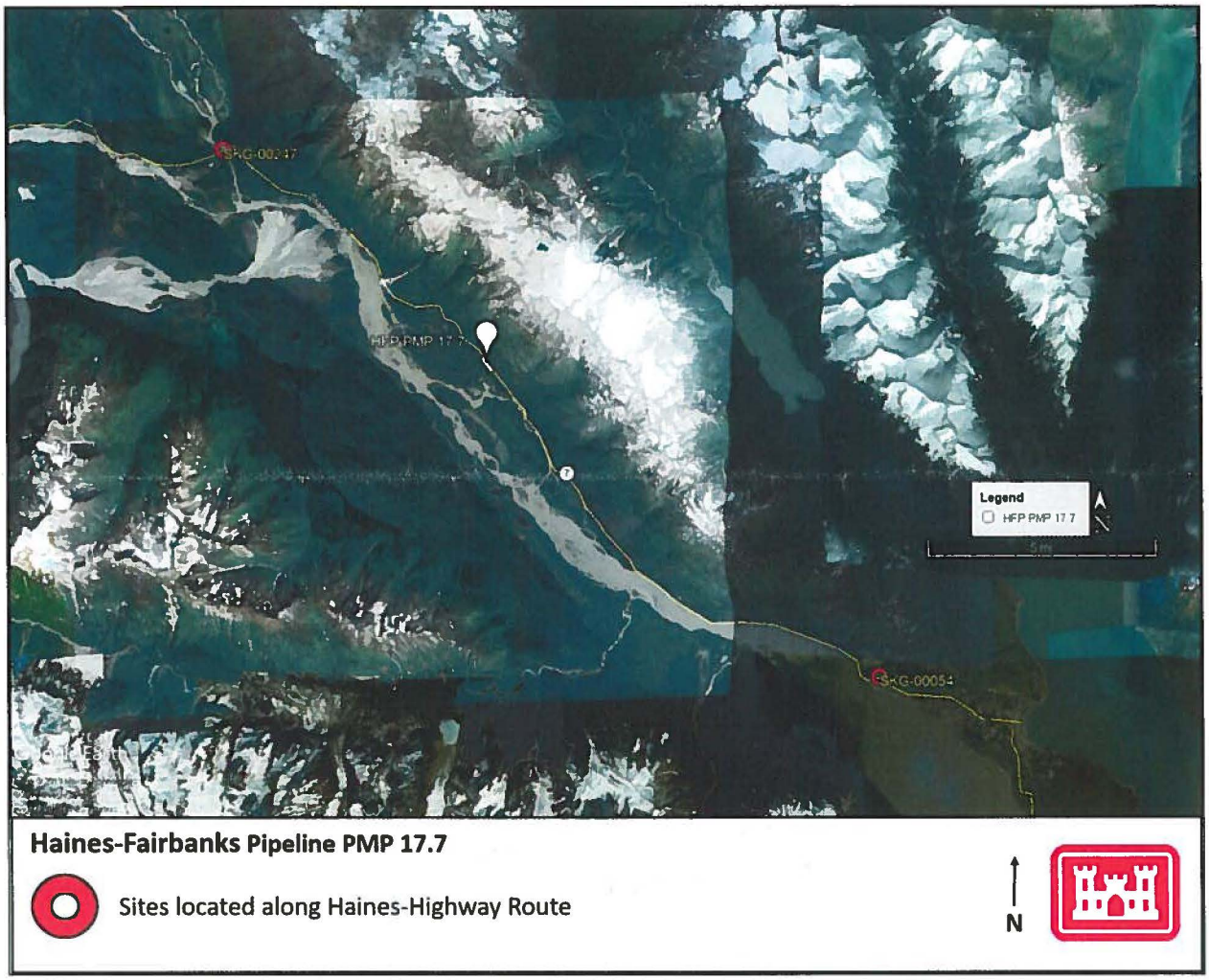

Figure 6. Historic properties crossing or on Haines-Highway access route.

Identification of Historic Properties

The USACE, Alaska District has reviewed documents in the AHRS document repository and mapper modules. Additionally general plans for the HFP indicated the location of features as did initial past field efforts by the USACE to identify the location of cultural resources within the APE. In 2004, the USACE, Alaska District conducted removal of four underground storage tanks and associated contaminated soil in Haines proper, the project was determined to have no effect to historic properties (USACE 2004). In 2007, USACE, Alaska District archaeologist, Margan Grover conducted a site visit to the PMP 17.7 release area. Grover documented heavy disturbance in the area citing past remediation efforts. During the 1968 spill, trenching was required to locate the high-pressure leak, as a result of attempts to locate the leak the trench filled with leaking fuel which was then burned off over the course of several months in the winter (Grover 2007). In 2007, the USACE, Alaska District found the Haines-Fairbanks Pipeline (SKG-00206) eligible under Criterion A as a discontinuous district with six contributing properties eligible under Criteria A and C. In 2012, the Federal Highway Administration (FHWA) recommended below ground sections of SKG-00206 as ineligible for listing on the NRHP due to lack of integrity.

The Haines-Fairbanks Pipeline (SKG-00206), the Chilkat River-Haines Highway Bridge (SKG-00247), and Yindastuki (SKG-00054) were identified to be within the proposed APEs for the PMP 17.7 undertaking (Table 2). Additionally, two areas containing depressions are located north and south outside the proposed APE, sites SKG-00544 and SKG-00545 were recorded by Cultural Resource Consultants (CRC) during 2006 and 2009 field surveys. SKG-00544 is located approximately 0.75 miles north along the highway from the APE and consists of eight depressions occurring on the south side of the highway in an area vegetated with cottonwoods and rosebushes The site was tested by Cultural Resource Consultants (CRC 2011) in 2006 and 2009, a shovel test halfway between two features revealed charcoal and calcined bone at 38-45 centimeters below surface. SKG-00544 is considered eligible for the NRHP under criterion D for its potential to yield important information. Site SKG-00545 is located 0.30 miles south along the highway of the project area. SKG-00545 is located on top of a steep bluff, examination of the area by CRC in 2006 and 2009 revealed charcoal and fire cracked rock, SKG-00545 has been determined eligible for listing on the NRHP under criterion D for its potential to yield important information. No other cultural resources were identified to be in either the site or linear APEs.

Table 2. Sites within and around Areas of Potential Effect (APEs) of PMP 17.7.

AHRS No.	Site Name	NRHP Status	‡Site APE	*Linear APE
SKG-00054	Yindastuki	Eligible		X
SKG-00206	Haines-Fairbanks Pipeline	Not Eligible	X	
SKG-00247	Chilkat River-Haines Hwy. Bridge	Eligible		X
SKG-00544	8 Depressions	Eligible		
SKG-00545	Testing on flat bench	Eligible		

Note:
‡ Site APE consists of area shown in Figure 5
* Linear APE consists of section of Haines Highway which will be used for transportation only (see Figure 6).

Assessment of Effect

In a letter dated November 28, 2011 the Alaska Department of Transportation and Public Facilities found that buried sections of Haines-Fairbanks Pipeline between Haines Highway Mileposts 3.5 and 23.5 did not retain sufficient integrity to contribute to the Haines-Fairbanks Pipeline (SKG-00206) and the SHPO concurred in a letter dated February 24, 2012. Although the section of pipeline is located on the east side of the APE for this specific task, the pipeline will not be disturbed during removal of contaminated soil in the area. In 2013, the FHWA entered into an MOA regarding the above-ground sections of SKG-00206. With the execution of that MOA and its fulfillment in 2015, the entire pipeline section (from Haines to the Canadian border) was considered not eligible for the NRHP. Pipeline Mile Post 17.7 falls within the designated linear boundary of SKG-00260, the Haines section of the Haines-Fairbanks Pipeline. Neither aboveground nor belowground elements of the pipeline in this area are eligible for listing on the National Register of Historic Places and as such soil excavation in the area of PMP 17.7 will not cause an adverse effect to SKG-00260.

Sites SKG-00054 (Yindastuki) and SKG-00247 (Chilkat River-Haines Highway Bridge) are both located along the designated linear highway transportation APE for the project. The

designated linear APE crosses an area of approximately 22 miles and will be used for transportation purposes only (see figure 6). Two sites were identified during a search of the AHRS as occurring on or crossing the Haines Highway and as such warrant a brief discussion. The Yindastuki site is located approximately 11 miles south of the project area and occurs on both the north and south sides of the Haines Highway, which may be used during the project. The Yindastuki site was a once important permanent fishing village, the site consists of standing buildings and a cemetery. SKG-00054 is considered eligible for listing on the NRHP under Criterion A as an important historic settlement and as a traditional gathering place. Yindastuki is also eligible for listing on the NRHP under Criterion D for its potential to yield information important for understanding the Chilkat Tlingit culture and lifeways. The Haines Highway runs directly though the Yindastuki site, essentially bisecting it. Although the section of the Haines-Highway which runs through the middle of the Yindastuki site will be used for transportation to and from the project area and Haines, no adverse effect is expected to occur from the proposed action as the Haines Highway is crossed numerous times a day by motor vehicle traffic using the same proposed route.

The Chilkat River-Haines Highway Bridge (SKG-00247) is located 8 miles northwest of the proposed removal area. The Chilkat River-Haines Highway Bridge was constructed in 1958 and spans a distance of just over 500 feet long, crossing the Chilkat River. The Chilkat River-Haines Highway Bridge is one of the longest historic steel stringer bridges with a reinforced concrete deck in the State of Alaska and as such has been determined eligible for listing on the NRHP under Criterion C for its distinctive characteristics. The bridge will be used by project equipment (see table 1) to cross the Chilkat River. The USACE, Alaska District has determined that use of the Chilkat River Bridge in the manner proposed will not constitute an adverse effect to this historic resource as it will be used in a manner consistent with its historic purpose.

Two other sites are located north and south of the proposed project area. SKG-00544 and SKG-00545. Both sites were identified by CRC during surveys in 2006 and 2009. SKG-00544 is located north of the APE and consists of eight surface feature depressions located on the south side of the highway in a vegetated area. A shovel test pit was excavated between two of the features and revealed charcoal and calcined bone 38 to 45 cm below the surface. SKG-00545 is located south of the project 0.30 miles south along the highway of the project area. SKG-00545 is located on top of a steep bluff, examination of the area by CRC in 2006 and 2009 revealed charcoal and fire cracked rock. Although, both sites demonstrate the areas' potential for the presence of subsurface cultural resources, both SKG-00544 and SKG-00545 are located on slightly elevated areas. The project area by contrast is located in a low flat lying area frequently inundated by water and subject to groundwater action. In addition to the project areas' low probability for cultural resources to occur, the area has also been subject to past disturbances, for example during the initial construction of the Haines-Fairbanks Pipeline, the Haines Highway, and initial remedial action by the Army during the PMP 17.7 spill, and numerous environmental subsurface testing efforts, and groundwater monitoring well installations efforts since 2006. Furthermore, examination of the area by a USACE, Alaska District archaeologist in 2007 (Grover 2007), also deemed the site unlikely to contain unknown subsurface archaeological resources given its past history of disturbance.

Conclusion

The proposed undertaking has the potential to effect the Haines-Fairbanks Pipeline (SKG-00206), however SKG-00206 is not eligible for listing on the NRHP, and as such the project will not cause an adverse effect to SKG-00206. Known historic properties with subsurface components exist north and south of the project area, however these sites are located on higher potential terrain for the presence of cultural resources, whereas the proposed project area is located in a flat low-lying area subject to frequent flooding events and has a history of subsurface disturbance during past construction activity and environmental remediation efforts. As such the proposed project area has low probability for the presence of unknown subsurface cultural resources. Following 36 CFR § 800.4(d)(1), the USACE seeks your concurrence on the determination that the proposed 2020 undertaking to excavate and treat contaminated soils and water at PMP 17.7 will result in **no historic properties affected**. If you have any questions about this project, please contact Forrest Kranda by phone at 907-753-2736, or by email at forrest.j.kranda@usace.army.mil.

SJM No Historic Properties Affected
Alaska State Historic Preservation Officer
Date: 10.11.19 File No.: 3130-1RCOE-E 2019-01120
Please review: 36 CFR 800.13 / A.S. 41.35.070(d)

Sincerely,

Forrest J. Kranda
Archaeologist
Environmental Resources Section

Cc:
Michele Metz, Lands Manager, Sealaska Corporation
Les Katzeek, Council President, Chilkoot Indian Association
Kimberley Strong, Tribal Council President, Chilkat Indian Village
Alekka Fullerton, Borough Clerk, Haines Borough

References Cited

Center for Environmental Management of Military Lands, Colorado State University (CEMML). 2003. *The Haines-Fairbanks Pipeline*. Prepared by Kristy Hollinger for U.S. Army Alaska, CEMML TPS 03-04, Fort Richardson.

Cultural Resource Consultants (CRC). 2011. Archaeological Field Survey of Proposed Alternatives for the Improvement of the Haines Highway from Milepost 3.5 to 25.3, DOT Project Number 68606. Prepared for DOWL HKM Anchorage, AK.

Alaska Division of Community and Regional Affairs (DCRA). 2019. Electronic Document, https://dcced.maps.arcgis.com/apps/MapJournal/index.html?appid=e516b86a31824e27a492162993aa173d# accessed June 24, 2019.

Hass, Frank M. 1992. The Haines/Fairbanks Pipeline: October, 1955-October, 1971. Haines, Alaska.

Grover, Margan. 2007. Haines-Fairbanks Pipeline Formally Used Defense Site. AHRS Record ID: 16361658.

Hollinger, Kristy. 2003. The Haines-Fairbanks Pipeline. Prepared by the Center for Environmental Management of Military Lands, Colorado State University (CEMML).

Mighetto, Lisa and Carla Homstad. 1997. *Engineering in the Far North: A History of the U.S. Army Engineer District in Alaska.* Historical Research Associates, Seattle, WA.

United States Army (USA). 1968. Pamphlet 360-1 Haines-Fairbanks Pipeline, Whittier-Anchorage Pipeline: General Description of Facilities, Headquarters, Petroleum Distribution Office.

United States Army Corps of Engineers (USACE). 2004. Letter to SHPO (Judith Bittner) from USACE (Guy McConnell) re: FUDS UST and soil removal at Haines, Alaska. April 21, 2004. File No. 3130-1R-COE-E.

Yarborough, Linda Finn. 2014. Ground Penetrating Radar Survey for the Haines Highway Improvement Project, No. 68606, in the Vicinity of Yindastuki Village.

Appendix B: Public Comments Summary,

List of Commenters and Public Comments Table

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Environmental Assessment
Interim Removal Action – Petroleum Contaminated Soil
Haines-Fairbanks Pipeline Milepost 17.7 Project
Formerly Used Defense Site (FUDS) F10AK1016-14

Public Comments Summary

August 2020

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Contents

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1. Introduction

The U.S. Army Corps of Engineers (Corps) released the *Draft Formerly Used Defense Site (FUDS) Haines-Fairbanks Pipeline (HFP) F10AK1016-14 Pipeline Milepost MP 17.7 Remediation Project Environmental Assessment (EA)* for a public review and comment period from February 5 to March 6, 2020. During the public comment period, the Corps held a public meeting to present the alternatives evaluated in the EA and allow for direct interaction between the public and the project development team. Approximately twenty members of the public attended the meeting, held on the evening of February 13, 2020, at the Chilkat Center for the Arts in Haines, AK. Written comments were submitted during the public meeting or received by mail or email prior to March 6, 2020. One additional comment was submitted after the deadline and is included in this summary.

2. Comment Summary

136 comments were received from 9 sources, including the Chilkat Indian Village (CIV), two state government agencies, one local government assembly, two local organizations, and three private citizens. Most of the comments encompassed more than one topic discussed in the EA and were written by the leader of a group or organization on behalf of its individual members.

Three government agencies and elected officials provided comments, including:

- Haines Borough Assembly
- Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation
- Alaska Department of Fish and Game

Two comments came from local organizations, including:

- Lynn Canal Conservation
- Takshanuk Watershed Council

Three comments were submitted from individual residents. All comments have been summarized into five general categories including tribal concerns, landfarming-related concerns, alternatives analysis, environmental impacts, and data corrections, clarifications, or insufficiencies. These were further divided into detailed subcategories as necessary. The sections below provide a general summary of the comments received.

2.1 Tribal Concerns

CIV expressed concerns regarding various topics discussed in the Draft EA including the public involvement process, analysis of potential alternatives, impacts to cultural resources and subsistence lifestyles, and environmental impacts.

Representatives from CIV stated that the Corps fell short of "meaningful consultation" during the public involvement process leading up to the publication of the draft document. They noted that the Corps did not utilize a tribal liaison to serve as a conduit of information between the Tribe and the Corps in order to convey project information in simple, non-technical terms. In addition, CIV asserted that a complete and sufficient analysis of reasonable proposed actions was not conducted because no alternatives included the

removal of a portion of the Haines Highway within the project area to address residual contaminated material found underneath the roadbed. CIV strongly urged the Corps to fully evaluate such an alternative in a revised EA. CIV asked for further clarification regarding the Corps' choice to pursue an interim remedial action as opposed to a final remedy for the site.

CIV also raised concerns regarding impacts to their community's subsistence lifestyle, as well as cultural and natural resources that they consider significant. CIV highlighted the importance of the Chilkat River as a source of multiple salmon species they rely on for food. They strongly disagreed with treatment of contaminated soils through landfarming at any location within the Chilkat Valley, especially those with proximity to the river. CIV also noted the importance of preserving the integrity of the Chilkat Bald Eagle Preserve for the ecological and economic services it provides to the entire Chilkat Valley.

In addition to CIV's own comments, The Lynn Canal Conservation and a private citizen echoed concerns that the Tribe had not been sufficiently involved in the planning process of the EA.

Response:

The Corps respects the CIV's status as a sovereign nation and appreciates the Tribe's participation in consultation for this project. The Corps recognizes CIV's commitment to the protection and restoration of natural resources in the Chilkat Valley.

The Corps has maintained communication with CIV regarding the project at PMP 17.7 since 2015. As a sovereign nation, the CIV may provide their comments on the project at any time. The comment period timeline provided for the EA is consistent with NEPA recommendations for this type of document. The Corps did not receive any requests to lengthen the public comment period. The project design team met with CIV's Tribal Council in July 2019 during the Corps' alternatives development phase, in addition to a prior teleconference call with Tribal leaders and ongoing email communication with the Tribal administrator. The purpose of performing pre-project outreach to CIV and other local organizations was to ensure that they were informed of the proposed action, project goals, and constraints before the EA was released. In addition, the project design team met with Tribal representatives after the release of the draft EA in February 2020. This coordination was intended to facilitate review in a 30-day period, which is consistent with NEPA recommendations for this type of document. The Corps did not receive any requests to lengthen the public comment period, and accepted comments after the stated end of the review period.

The EA did identify CIV as a minority population for evaluating compliance with environmental justice regulations. However, Section 3.5.2 Environmental Consequences (Socioeconomic) conveys that no adverse effects would result for the Tribe as a result of the preferred alternative. Conversely, by substantially reducing the extent of contamination in the project area, the preferred alternative would reduce uncertainty and long-term risk to subsistence users as opposed to the No Action Alternative. In addition, the removal of contaminants from the site is beneficial to the overall environment.

The Corps acknowledges CIV's concerns regarding the omission of a full evaluation of an alternative that includes removal of a portion of the Haines Highway. The Corps also understands that Section 2.2.6 Alternatives Considered but not Evaluated may not have fully explained their decision to not fully evaluate a road removal alternative. This section has been expanded to include a more detailed explanation of why such an alternative was not needed to meet the purpose and need of the project. The purpose of the project is to reduce soil and groundwater contaminant concentrations below levels that pose an imminent and substantial risk to human health, welfare, or the environment. Alternatives 3 and 4

both fulfill this purpose. The NEPA process requires the Corps to assess a range of options to meet the project's described purpose and need but does not necessitate the evaluation of every possible option.

2.2 Landfarming-Related Concerns

Eight of the nine comment letters expressed concerns regarding landfarming. Topics included the use of landfarming as a remediation technique, the effectiveness of landfarming in the Chilkat Valley, landfarming in proximity to sensitive habitats or subsistence resources, and the potential landfarming site identified in the draft EA.

The Tribe, government agencies, and local organizations all called for more extensive research into groundwater table depths at any landfarm location, as well as clarification and detail on how leachate testing would be performed to determine the need for a liner under contaminated soils. Many suggested long-term monitoring and stringent erosional controls during the operation of the landfarm. Some commenters questioned the efficacy of this type of remediation in the unique climate of the Chilkat Valley and asked for successful examples of comparable operations.

Many commenters disapproved of the proximity of the proposed landfarm location to a constructed salmon spawning channel and expressed concerns over the potential impacts to local wildlife, subsistence activities, and long-term water quality. Multiple commenters expressed concerns over potential migration of contaminants from the landfarm to the nearby Klehini and Chilkat Rivers, potentially impacting viable salmon spawning habitat. Nearby residents worried property values would decline as a result of the landfarm, and felt the neighborhood was unjustly bearing the burden of the Corps' remedial efforts. One commenter suggested alternate locations for the Corps to evaluate as potential landfarm locations. Three commenters, including CIV, suggested that landfarming should occur entirely outside of the Chilkat Valley.

Response:

The Corps appreciates the cumulative concerns of the community regarding the treatment of contaminated materials within the Chilkat Valley. Landfarming was chosen as the preferred method of soil treatment for this project based on favorable outcomes achieved by a much larger landfarm operation implemented by the Corps in Nome, AK. Landfarming is sustainable, cost-effective, and results in a much smaller carbon footprint than shipping the contaminated materials by barge to a permitted landfill. Landfarming is a proven method for treating petroleum-contaminated soils, and any landfarm operation would adhere to the protocols and standards in ADEC's Technical Memorandum, "Landfarming Sites in Alaska." (2018)

The Corps recognizes the concerns regarding the potential landfarm location evaluated in the Draft EA. The Corps has amended the EA to include transportation of contaminated materials to a licensed waste facility outside the Haines area, and is no longer considering the landfarm site evaluated in the Draft EA.

2.3 Alternatives

The most common objection to the EA was that it did not include a full evaluation of an alternative that would remove a portion of the Haines Highway to excavate contaminated material underneath the roadbed. Multiple commenters disagreed that the Corps' goal for the project as an interim remedial action is the appropriate response for this project. They questioned whether an interim remedial action satisfied

ADEC and federal regulatory standards and asked how the Corps intended to evaluate the effectiveness of the interim action in order to make future decisions.

Four commenters supported the implementation of Alternative 4, the Corps' preferred alternative, with caveats including re-evaluation of landfarming as a remedial option and additional public involvement opportunities during the development of the construction workplan. Other concerns included implementing appropriate safety measures during construction and excavation, limiting impacts to salmon habitat and water quality, and coordinating with ADOT&PF to most effectively and efficiently execute the proposed remedial work.

Response:

The Corps acknowledges the community concerns regarding a full evaluation of an alternative that includes removal of a portion of the Haines Highway. The Corps also understands that Section 2.2.6 Alternatives Considered but not Evaluated may not have included sufficient information on their decision not to fully evaluate a road removal alternative. This section has been expanded to include a more detailed explanation. The NEPA process requires the Corps to assess a range of options to meet the project's described purpose and need, but does not necessitate the evaluation of every possible option. The interim removal action is an intermediate and timely step toward the remedy, rather than a final remedial decision for the project. This EA does not contemplate full remediation, which will take multiple years to reach a remedial decision and implement as regulated by ADEC's contaminated sites clean-up process under 18 AAC 75, EPA guidance, and DERP and FUDS program policy. The Corps seeks to perform a more timely interim removal action in order to more quickly address the groundwater to surface water pathway at the slough and the contaminated soil near the surface that is a potential risk to human health in accordance with 18 AAC 75.330.

The Corps developed the alternatives described in the EA through a process designed to minimize temporary or long-term impacts to the degree possible while delivering the best, most practicable project outcome that could be delivered in a timely manner. Alternatives were developed from multiple perspectives and consider environmental and social impacts, cost effectiveness, and ability to meet the purpose of and need for the proposed action. The preferred alternative described in the EA was designed to achieve the same goals as an action that would entail a full road removal, but with fewer environmental impacts and disruption during implementation and at a much lower cost. Alternative 4 is intended to greatly reduce risk to humans, wildlife, and water quality—through excavation of the contaminant source and in-situ methods to contain and treat any remaining, inaccessible contamination—while considering the various project constraints described in *Section 2.1 Alternatives Constraints*.

The Corps appreciates the concern of the community regarding the implementation of any alternative. A site-specific workplan including best practices and impact mitigation measures will be prepared by the selected construction contractor. Post-construction sampling and monitoring will inform future decisions on whether additional actions are needed to further reduce contamination at the site. The Corps is committed to safely and effectively implementing this action with minimal disturbance to the surrounding community and wildlife.

2.4 Environmental Impacts

Impacts to salmon spawning channels, fish and avian habitats, water quality, and subsistence resources were of great importance to most commenters. Proximity to the Chilkat Bald Eagle Preserve and the regulations related to that protected area are of great concern for CIV and other agencies. Commenters

requested clarification on restorative measures and mitigation plans for sensitive habitats and vegetation impacted by construction and landfarming. Suggested mitigation measures included stringent erosion controls, a buffer between the project footprint and sensitive habitats, a detailed post-construction revegetation plan, an extended, continuous monitoring plan, and oversight by the ADEC and other stakeholders.

Two commenters asked questions regarding bioaccumulation of contaminants in native plants and wildlife. Two commenters raised concerns about the addition of oxygen releasing compounds to the substrate and asked for a more comprehensive description of construction materials to be included in a workplan. Two commenters requested additional studies on the rate of natural attenuation of contaminants, citing that insufficient evidence had been presented to confirm the effectiveness of the remedial methods described in the EA. Most comments generally advocated the need to minimize the environmental impacts to the Chilkat River, Chilkat Bald Eagle Preserve, and the surrounding ecological landscape.

Response:

The Corps recognizes the community's concerns regarding possible environmental impacts stemming from the proposed action. The removal of contaminated materials from the project site benefits the overall environment. The preferred alternative was designed and selected to have the greatest benefit to the water quality of the surrounding area.

Section 2.2.7.3 summarizes measures to avoid, minimize, or mitigate the impacts of the proposed action. Using minimal areas of disturbance, grubbing and clearing outside of the primary nesting season, recontouring excavated areas, and placing a geotextile liner under temporary work pads are all existing mitigation measures. The Corps will complete any necessary wildlife surveys and have environmental protection and stormwater pollution protection plans in place prior to the start of construction.

Based on EPA guidance, the Corps identified no contaminants that bioaccumulate in the surface water at the project location. This means that the contaminants of concern in surface water, benzenes and xylenes, are not substances that can be stored in the tissues of living beings and cannot be passed through the food chain. Section 3.3.2.1 offers a more detailed explanation of the Corps' findings on bioaccumulation.

The Corps anticipates no long-term significant loss to local wetland habitat or function as a result of the project. Natural revegetation is anticipated to occur rapidly in new soils and over time there would be no discernible change in vegetation or wildlife use of the area.

2.5 Data Corrections, Clarifications, and Insufficiencies

Some commenters provided specific requests for information or provided referenced information for use in the final version of the EA. ADF&G corrected a fish study citation and provided information regarding the salmon spawning channel near the proposed landfarm location. Additionally, ADF&G recommended specific protocols regarding erosion controls, safety education, and wildlife mitigation to be included in future workplans. DPOR recommended stringent guidelines to prevent contamination risk to the soil and water surrounding the landfarm location, as well as a 300-foot riparian buffer. Calls were made for more studies of the action area and potential landfarm location, including groundwater table verification, further contamination delineation, advanced leachate studies, and confirmation of natural attenuation in the climate surrounding Haines.

Response:

The Corps appreciates input from the Haines community, local organizations, and state agencies on the Draft EA. The Corps corrected a source relating to fish use information in Table 6 (p. 25) and an incorrectly-used abbreviation for ADF&G. Additional fish use information regarding the salmon chum spawning channel near highway milepost 25 was not included in the final EA as it is no longer pertinent to the project.

The Corps acknowledges the commenters request to review the workplan. Draft workplans are not usually distributed for public review. The selected construction contractor will be responsible for designing and implementing all the necessary safety precautions to ensure successful project implementation with on-site oversight of the Contractor's activities by Quality Assurance Representatives from the Corps. As the state's regulatory agency, ADEC is required to review all draft work plans and applicable comments received from ADEC are incorporated into the final work plan. ADOT will review the work plan to ensure protection of the Haines Highway infrastructure and the safety of highway users. The finalized work plan will be made available in the project information repository located at the Haines Public Library after ADEC approval of the document.

After receiving feedback from numerous stakeholders regarding the landfarm location evaluated in the Draft EA, the Corps has amended the EA to include transportation of the contaminated materials by barge to a licensed waste facility or a licensed landfill in the Lower 48 if necessary based on ADEC requirements.

Environmental Assessment
Interim Removal Action – Petroleum Contaminated Soil
Haines-Fairbanks Pipeline Milepost 17.7 Project
Formerly Used Defense Site (FUDS) F10AK1016-14

List of Commenters

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HFP PMP 17.7 Environmental Assessment - List of Commenters		
#	Commenter Name	Organization
1	Kate Kanouse	Alaska Department of Fish and Game
2	Kimberley Strong	Chilkat Indian Village of Klukwan
3	DPOR SE Region	Alaska Department of Parks and Outdoor Recreation
4	Nicholas Szatkowski	Resident
5	Jessica Plachta	Lynn Canal Conservation
6	Derek Poinsette	Takshanuk Watershed Council
7	Anonymous 1	Public Meeting Attendee
8	Anonymous 2	Public Meeting Attendee
9	Jan Hill & Debra Schnabel	Haines Borough Assembly

Environmental Assessment
Interim Removal Action – Petroleum Contaminated Soil
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Public Comments Table

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Haines PMP 17.7 Environmental Assessment - Public Comments Table

#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
Tribal Concerns (From tribe, or about tribe from others) [11]		**2, 4, 5**		
Comment Summary: The Tribe feels that it has not been granted "meaningful consultation" through the Corps' public involvement process. They feel strongly that a full remedial action was not evaluated or analyzed, that any action will have significant impacts on cultural resources significant to their subsistence lifestyle, and that landfarming at the potential location identified in the draft EA is inappropriate. They state there was no contact or conveyance of information through a tribal liaison for added clarity for them on technical subjects, and that environmental justice standards have not been met by the Corps in the EA planning process. The Lynn Canal Conservation and a private citizen have also expressed concern that the Tribe has not be sufficiently involved in the planning process of the EA.				
1	INSUFFICIENT COMMENT PERIOD **[1]** With very little agency outreach to CIV to explain the EA it is unreasonable, unjust and goes against DOD guidance to expect the CIV to have the capacity and resources to comment on the EA within the 30-day public comment period.	2	As a sovereign nation the CIV may provide their comments at anytime throughout the NEPA process. Comments are appreciated within the recommended timeframes in order to ensure the CIV's comments are fully understood and taken into consideration in the development of the EA. The comment period timeline provided is consistent with NEPA recommendations for this type of document. The Corps did not receive any requests to lengthen the public comment period.	N/A
2	INSUFFICIENT PUBLIC INVOLVEMENT IN EA DEVELOPMENT **[2]** CIV has committed financial resources and staff and council time to participate in the process to evaluate and determine the best clean-up method for the Haines Pipeline 17.7 mile contamination. CIV is disappointed that our comments and considerations articulated in our government to government consultation meeting held July 2019 were not implemented in the development of the EA and the agency's preferred alternative.	2	The development of the EA is an iterative process where comments are taken into consideration and alternatives further explained or expanded in response to comments received. The recent comment period and CIV's comments are being considered and incorporated in the development of the final draft of the EA.	N/A
3	Lynn Canal Conservation, Chilkat Indian Village, the Upper Lynn Canal Fish and Game Advisory Council, and other concerned organization repeatedly requested the inclusion of a full cleanup option during the planning process.	5	See response to Comment 6, below.	p. 7, 9, 11-12
4	INSUFFICIENT GOVERNMENT TO GOVERNMENT CONSULTATION/EJ **[8]** The EA highlights key concerns as they relate to the United States Federal Government's definition of "meaningful consultation." This construct is defined specifically and steps for the Army Corps' FUDS program to achieve meaningful consultation are clearly articulated, on the DOD's Environment, Safety and Occupational Health Network and Information Exchange Native American Affairs web portal (https://www.denix.osd.mil/na/policy/), the Alaska National Interest Lands Conservation Act (ANILCA) and further reinforced under the Environmental Justice Executive Order 12898.	2	The Corps is interested in understanding where in the EA the CIV has concerns about meaningful consultation. The Corps takes its government-to-government obligations and our trust responsibility to the CIV seriously and strives to meet the intent of the definition of meaningful consultation in the DoD Instruction 4710.02, DoD interactions with Federally Recognized Tribes, which is the foundation for the USACE government-to government consultation policy.	N/A

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#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
5	The Army Corps did not provide a Tribal Liaison at the onset of this planning process nor when it first started detecting contamination in the ground water in 2006. The Tribal Liaison is a key component to government to government consultation and would have provided CIV with the capacity to ask questions and receive information in a format appropriate for Tribal Members and Tribal Council.	2	The USACE Alaska District Tribal Liaison is available to all Tribes in Alaska at anytime to support and facilitate communication between Alaska Native tribes and the Corps for all Corps activities and studies in the state. The Tribal Liaison will be involved in future consultations and communications with the CIV.	N/A
6	On July 15, 2019, the Army Corps came to Klukwan to meet with our Tribal Council on this issue. At that time the Army Corps' representatives assured CIV that a full remediation of the site was being seriously considered and was the agency's preferred choice at that time. We stressed to the Army Corps' staff that full remediation was our top priority. The EA as written completely fails to demonstrate to us that the different avenues to complete a full remediation of the site were addressed. How is this meaningful consultation? Not only did the Army Corps change course significantly in what it said to our Tribal Council in July but it completely failed to acknowledge why it changed course in the EA.	2	The Corps acknowledges the community concerns regarding a full evaluation of an alternative that includes removal of a portion of the Haines Highway. The Corps also understands that Section 2.2.6 Alternatives Considered but not Evaluated may not have included sufficient information on their decision not to fully evaluate a road removal alternative. This section has been expanded to include a more detailed explanation. The NEPA process requires the Corps to assess a range of options to meet the project's described purpose and need, but does not necessitate the evaluation of every possible option. In this proposed action the purpose and need is a removal action intended as an intermediate step toward the remedy, rather than a final remedial decision for the project. This EA does not contemplate full remediation, which will take multiple years to reach a remedial decision and implement it as regulated by ADEC's contaminated sites clean-up process under 18 AAC 75, EPA guidance, and FUDS program policy. The Corps seeks to perform a more timely interim removal action in order to more quickly address the groundwater to surface water pathway at the slough and the contaminated soil near the surface that is a potential risk to human health in accordance with 18 AAC 75.330. The Corps will continue to engage the CIV throughout this process and invite the CIV to initiate government-to-government consultation at anytime as the Corps continues to fulfill the remediation obligations Congress has charged the Corps to accomplish in the state of Alaska. The Corps retains liability for the contamination until the site cleanup is considered complete under ADEC regulations.	p. 7, 9, 11-12

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#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
7	The Army Corps failed to inform us of these crucial elements (coordination with DEC and ADF&G to meet regulations) to this project. It was left up to us to figure this information out. Not once did the Army Corps offer to coordinate a meeting with DEC and ADF&G to ensure that our Tribal Government understands these regulations and had the opportunity to ask questions on how these regulations are being addressed in the EA. Meaningful consultation would at the very least inform our people of the specific regulation dictating the clean-up and how the agency is meeting the regulation's criteria and requirements.	2	The purpose of the EA is to provide Tribes, municipalities, and the public information about how we intend to meet our federal and statutory requirements, as well as our congressionally mandated FUDS program obligation at this particular project site, which includes working with the state. Although each FUDS site is different and requires its own unique considerations, the FUDS program processes and obligations remain the same. The Corps would be happy at any time to provide an informational presentation about all of our programs and missions in the state, or more specifically just the FUDS program.	p. 8, 75-78
8	Meaningful Involvement requires that (1) potentially affected community members have an appropriate opportunity to participate in decisions about a proposed activity that will affect their human health or environment; (2) the public's input can influence the regulatory agency's decision; (3) the concerns of all participants involved will be considered in the decision-making process; and (4) the decision-makers seek out and facilitate the involvement of those potentially affected (https://www.epa.gov/environmentaljustice/learn-about-environmental-justice). We conclude that government to government consultation and environmental justice principles have not been met by the Department of Defense, Army Corps' remediation process.	2	Although the EPA and the DOD are both federal agencies with similar obligations to federally recognized tribes, these agencies have very different missions and Congress authorizes and funds each of the agencies differently. The EPA guidance cited in your comment does not apply to the DoD or the Corps, the Corps relies on the DOD instruction 4710.02, which defines meaningful consultation. To reiterate, the Corps welcomes further consultation and initiation of government-to-government consultation at any time to discuss the CIV's concerns.	N/A
9	The choice of an interim removal action is also inconsistent with what the Army Corps told CIV during consultation. As we state above, on July 15, 2019, the Army Corps came to Klukwan to meet with our Tribal Council on this issue. At that time the Army Corps representatives assured CIV that a full remediation of the site was being evaluated and was the agency's preferred choice. Six months later, with no communication from the agency, the EA available for comment only describes a temporary remediation.	2	See response to Comment 6. The Corps is happy to discuss with the CIV the changes made to the EA based on comments received, and to clarify why full remediation does not meet the purpose and need of this particular action.	p. 7, 9, 11-12

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#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
10	I see no indication within the EA that there has been any meaningful form of consultation with the government of the Chilkat Indian Village, within whose traditional territory this toxic spill occurred.	4	Section 1.5 *Public Scoping and Resources of Concern* details the measures the Corps took to consult with and involve community members and stakeholders, including CIV, throughout the project planning process. The Corps typically does not include details of tribal consultation within public documents unless requested by tribes. The relationship between the Corps and federally recognized tribes is a sovereign to sovereign relationship and the Corps treats tribal consultation with great care and confidentiality.	p. 8
11	LCC supports the Chilkat Indian Village (CIV), which has sovereign rights to this area preceding state and federal rights. CIV has the right to meaningful government-to-government consultations, and has clearly and consistently expressed their support for a full cleanup option as well as other serious concerns.	5	Comment noted, thank you. See responses to comment 6 and 8.	p. 7, 9, 11-12

Landfarming Related Concerns [28]		**1, 2, 3, 4, 5, 6, 7, 9**		
Comment Summary: Concerns regarding the use of landfarming as a remediation technique, the potential landfarming site identified in the draft EA, any landfarm location's proximity to sensitive habitats or subsistence resource, and the effectiveness of landfarming in the existing climate in Haines were included in 8 of 9 comments submitted to the Corps during the public comment period. The Tribe and other agencies have called for more extensive research into groundwater table depths at any landfarm location, as well as clarification and detail on how leachate testing would be performed and use of a non-permeable liner was not included in the methodology described in the draft EA. Some commenters recommended alternative sites in the valley for Corps consideration, while others insisted any landfarming be located outside of the Chilkat Valley. Many commenters disapproved of the proximity of the proposed landfarm location to a man-made salmon spawning channel, as expressed concerns over the potential impacts to local wildlife, subsistence activities, and long-term water quality.				
12	DEC REGULATIONS **[6]** 18 AAC 75.325 states that the responsible party shall recover material in a manner that minimizes the spread of contamination into an uncontaminated area by using containment, recovery, and disposal techniques appropriate to site conditions.	2	Comment noted. Minimization of the spread of contamination is one reason the Corps prefers the interim removal option, which allows contaminant concentrations to be reduced in situ by low-impact methods.	N/A
13	the Alaska DEC is mandated to maintain and safeguard all salmon-bearing rivers in our state. They should be advocating for any land-farming remediation to take place outside of the Chilkat watershed, so that even in the event of an accident, no effluent could enter the vital, salmon-bearing, life- and culture-sustaining Chilkat watershed.	4	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A

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#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
14	Under 18 AAC 75.325. Site cleanup rules: purpose, applicability, and general provisions states that to the maximum extent practicable the responsible person/party shall use permanent remedies. Despite significant public support for a full cleanup option, the Corps has neglected to evaluate a "permanent remedy" as required by statute.	5	USACE is proposing soil removal in the source area of the contamination to the maximum extent practicable given safety, environmental, schedule, and budget constraints combined with in-situ treatment as the preferred alternative to reduce risk to the environment to levels considered safe by ADEC. Both soil removal and in-situ treatment are considered permanent remedies that reduce the amount of contamination in the environment. USACE will monitor the site after the interim removal action is complete to determine if risk remains at the site. If risk is found to remain, USACE would then evaluate additional measures required to meet ADEC regulations. This response is in compliance with 18 AAC 75.325.	N/A
15	The agency's preferred alternative and proposed landfarming sites may not meet 18 AAC 75.325. This section of the regulation states that the responsible party shall recover material in a manner that minimizes the spread of contamination into an uncontaminated area.	5	Landfarming is an acceptable method to remediate soils contaminated with petroleum in the State of Alaska when performed according to ADEC Landfarming guidance.	N/A
16	The proposed action conflicts with Alaska Statutes § 41.21.610 – 630 by threatening water quality, salmon habitat, and the eagles and other wildlife that depend on water quality. The Eagle Preserve is a fundamental economic driver in the Haines Borough, providing opportunities for seasonal tours and wildlife viewing. Spawning and rearing grounds in the Eagle Preserve provide habitat for all five species of Pacific salmon, plus steelhead and trout, which together support a robust regional and statewide fishing economy.	5	Comment noted. The Corps reviewed Alaska Statutes § 41.21.610 – 630 in preparation of the Draft EA to ensure compliance. The proposed action is intended to preserve water quality in Chilkat Slough and Chilkat River by reducing contamination of groundwater that may find its way to these water bodies.	p. 30, 78
17	LCC supports long-term monitoring of water quality to determine whether additional remediation is needed, and in order for the action to comply with 18 AAC 75.325.	5	Comment noted. As stated in the EA, the Corps will sample groundwater after the interim soil removal action and in-situ treatment to determine if additional remedial action is needed to reduce risk to acceptable levels.	p. 16
18	WORKPLAN/MONITORING **[6]** We recommend the site specific workplan include specifications of materials used to construct the berms surrounding the landfarm.	1	The selected construction contractor will prepare a site-specific workplan for ADEC approval.	p. 16-19, 54
19	In a consultation meeting held Feb. 13th 2020, agency staff informed us that once a remediation technique is chosen the Army Corps and DEC will develop a final work plan and monitoring plan for the site and that stakeholders will be shown the workplan. From our understanding, under DEC regulations the agency does not have to share this work plan with the public.	2	Once reviewed by ADEC and applicable comments are incorporated as necessary, the finalized work plan will be available to the public. A hard copy with a compact disk containing the electronic version of the work plan will be available in the project information repository located at the Haines Public Library.	N/A

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#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
20	A monitoring plan should be a part of the EA.	2	Since an EA is intended to analyze and disclose the potential impacts of a proposed action, they do not generally include a monitoring plan. However, by stating that implementation of the action alternative will include a monitoring plan, the EA/FONSI commits the Corps to doing so.	p. 16
21	Ground water level and seasonal fluctuations at the site have not been adequately determined. A monitoring well must be placed to gather ground water level data and measure levels during the duration of the landfarm.	2	Comment noted, thank you. The Corps is no longer considering the landfarm location evaluated in the Draft EA.	N/A
22	We were informed by the Army Corps that the particular site was chosen because its ground water table is deep enough that it would not require a liner. We were also told that it would not require a cover. How does this disposal technique meet the regulation?	2	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
23	The agency should spend more time doing outreach in the Chilkat Valley to identify an adequate landfarming site.	2	USACE evaluated additional potential landfarm locations available for this project. A mutually agreed upon landfarm location was not identified in the Haines area.	N/A
24	LINER USAGE **[1]** The EA does not state whether the Army Corps will use a non-permeable liner at the landfarm site, only that such a liner may be required based on leachate testing. EA at 47. However, the EA does not say when leachate testing will occur, why it could not be conducted before the EA, what kinds of tests will be performed, or what criteria the agency will apply in determining whether to use a liner. Thus, the EA does not provide sufficient information about the risk that leachate could contaminate groundwater at the proposed landfarm.	2	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA. Leachate testing procedures and requirements to perform this project will be identified in the work plan and will follow ADEC guidance and regulations. The work plan will be submitted to ADEC for comment and approval.	N/A
25	EFFICACY OF TECHNIQUE **[1]** The EA suggests contamination in the excavated soil would be "greatly attenuated" either by the time it reaches the landfarm or during the landfarm process (the EA is not entirely clear on this point). But the EA does not estimate the rate of attenuation, and the vague assertion alone is not a sound basis from which to draw conclusions about the potential environmental impacts of the landfarm method.	2	ADEC's Technical Memorandum "Landfarming at Sites in Alaska" (2020) provides technical explanation of landfarming procedures as well as its efficacy as a treatment method.	N/A
26	ENVIRONMENTAL IMPACTS **[9]** the proposed landfarm site, being in an area prone to flooding and within unknown ground water table most certainly poses a potential threat to water quality.	2	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A

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27	There is a concern regarding the land farming location along a salmon stream and what environmental protection procedures will be employed during the mitigation project. DNR generally establishes a riparian buffer zone of approximately 300 feet from all streams, creeks, rivers and lakes, and recommends the same distance or greater for the location of the contaminated soil storage. DPOR also recommends stringent guidelines to prevent the land farming soil from risk of future watershed contamination of the CBEP during extreme run-off events or high water/flooding conditions, which is a violation under 11AAC21.010 of contaminating water of the CBEP. Other local Haines soil farming sites have also been discussed as potential sites.	3	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
28	The proposed “land-farming” site at 24/25-mile for remediation of contaminated soils is ill-suited for this purpose and unacceptable. The shallow groundwater, and proximity to: a known salmon spawning & rearing channel; the main stem Chilkat River; and Klukwan village make this site an unacceptably poor location for spreading acres of toxic, hazardous waste. The land farming techniques described in the EA are newer remediation approaches, and neither the agency nor the public should assume that no toxins will be spread into the groundwater, river, or air.	4	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
29	The site is within the Alaska Chilkat Bald Eagle Preserve, is subject to flooding, and in close proximity to a salmon spawning channel. Alternate sites proposed after the EA was produced have their own issues, including close proximity to a residential area which raises environmental justice concerns, proximity to the Alaska Chilkat Bald Eagle Preserve, and proximity to a spring which raises water quality concerns.	5	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
30	Landfarming close to the chum channel could also result in contaminants following the easy downstream route provided by the chum channel directly into the Chilkat River.	5	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A

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#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
31	LCC is concerned that these environmental consequences may occur regardless of Corps' choice of landform site, if the site is located within the Chilkat Valley. No part of the valley is devoid of sensitive wildlife. No part of the valley is exempt from precipitation and runoff. No part of the valley should be regarded as a sacrifice zone. Every part of the valley is integral to the ecological integrity of the valley as a whole. Because of this, LCC supports complete removal of contaminated soils to a location with the available acreage to responsibly remediate the soils.	5	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
32	The proposed landfarming site on Roger Schnabel's property at the Wells Bridge is not appropriate. The site is located adjacent to a constructed salmon spawning channel, and is within the floodplain of the Klehini and Chilkat Rivers. Ground water in this area is immediately connected to river water, and standing water can be observed above the ground surface whenever river levels are high. This site is also located just across the river from the Chilkat Tlingit village of Klukwan, and it is less than 500 meters upstream of where many residents set their salmon nets.	6	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
33	Why have a land farm at the Head of a Salmon Spawning Channel? If the land farm has to be at the preferred (sp) location then a liner should be a must.	7	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
34	The Assembly does not support land-farming of contaminated soils in the location identified. The Assembly requests that Corps develop a remediation plan that will prevent the potential of future leaching of hydrocarbons into the Chilkat River. Additionally, the site selected to remediate contaminated soils with land-farming could threaten the integrity of a constructed salmon spawning channel.	9	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
35	ALTERNATIVE LANDFARM LOCATIONS **[5]** There are 2 sites in the area that could be appropriate for the land-farming remediation method proposed in the EA. They include the "Tank Farm". This site is outside either the Chilkat or Chilkoot watersheds. It is part of the same infrastructure as the former pipeline, and the cleanup efforts should be coordinated and consolidated.	4	Comment noted, thank you.	N/A

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36	The only other possible, second choice would be the industrially developed 21-acre property, formerly used as a rock quarry, owned by Roger Schnabel, and identified simply as USS 208, TL 4.	4	Comment noted, thank you.	N/A
37	the ADEC and Corps should seek to use some appropriate site in the industrial zone of Juneau. It would be geographically foolish and fiscally irresponsible to assume that the contaminated soils should have to be barged almost 1000 miles, to Washington State, just because there is no suitable site within the watershed of the Chilkat River.	4	Comment noted, thank you.	N/A
38	Alternate landfarm sites have been proposed but not evaluated, and include private properties along Chilkat Lake Road and Porcupine Road. Both properties drain to a spring that drains to the Klehini River. Both properties are in a primarily residential area and in close proximity to other residences, and both properties would likely be subject to the Haines Borough's Conditional Use Permit application requirements, which include a public process and an uncertain permitting outcome.	5	Comment noted, thank you.	N/A
39	If no appropriate site can be located, LCC supports complete removal of the contaminated soil to an offsite, out-of-valley location.	5	Comment noted, thank you.	N/A

Alternatives Analysis [44]		**1, 2, 3, 4, 5, 6, 8, 9**		
Comment Summary: The most common objection to the alternatives analysis was the omission of a full evaluation of an alternative that included removing the highway and the contamination found underneath in addition to what was described as the source and smear zone areas. Commenters requested clarification on why an interim remedial action is the appropriate response for this project, how an interim remedial action satisfies DEC and federal regulatory standards, and how Corps intends to evaluate the effectiveness of the action in order to move forward with future plans. Support was only noted for Alternative 4, Corps's preferred alternative, with caveats including re-evaluation of landfarming as a remedial option and involving the public in developing the future workplan for excavation and treatment. Other concerns included implementing appropriate safety nets during construction and excavation, limiting impacts to salmon habitat and water quality, and coordinating with ADOT in order to most effectively and efficiently execute the proposed remedial work.				
40	SUPPORT FOR ALTERNATIVE 4 (PREFERRED) **[2]** As a primary stakeholder of the lands adjacent and affected by the contaminated project site, Alaska's Division of Parks and Outdoor Recreation (DPOR) supports Alternative 4 of the methods included in the draft EA. This method meets the objectives of the project and addresses long term impacts on adjacent DPOR managed lands and waters of the Alaska Chilkat Bald Eagle Preserve (CBEP).	3	Comment noted, thank you.	N/A

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41	Alternative 4 is the only option that begins to address, and act on, the Corps's legal and ethical responsibilities to remedy the environmental damages that resulted from the 1968 fuel spill at the site in question.	4	Comment noted, thank you.	N/A
42	AMENDMENTS TO ALTERNATIVE 4 (PREFERRED) **[4]** The preferred alternative proposes treating more than one million gallons of groundwater onsite during soil excavation and constructing an offsite landfarm to treat contaminated soils through exposure to air and microbial degradation. The proposed landfarm location is adjacent to a spawning channel constructed in the 1980s by Northern Southeast Regional Aquaculture Association Inc. (NSRAA) to provide spawning habitat for chum salmon. NSRAA conducted annual escapement counts 1983–2007, documenting 12–5,000 adult chum salmon each year (NSRAA, 2019, unpublished data). The stream is listed in ADF&G's anadromous waters catalog as Stream No. 115-32-10250-2977 as providing habitat for chum, coho, and sockeye salmon. Additionally, ADF&G Division of Commercial Fisheries staff opportunistically conducted escapement surveys in the channel between 1984 and 2019, with counts ranging from 0 to 906 adult salmon each year. A In 2014, ADF&G Habitat Section staff electrofished the channel, capturing juvenile coho salmon throughout the channel. Please incorporate this fish use information.	1	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
43	In the DEA, groundwater depth at the proposed landfarm is estimated to be 10–12 ft based on anecdotal information from the landowner. We recommend investigating seasonal groundwater depth fluctuation to ensure groundwater will not contact leachate from the landfarm and contaminate the spawning channel, which is solely fed by groundwater. We also recommend considering monitoring surface water quality in the spawning channel to confirm the effectiveness of the engineered controls at preventing leachate from entering the stream.	1	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
44	On several occasions, ADF&G staff observed the Chilkat River back flooding the spawning channel and the adjacent historic floodplain during high water events May–September. The presence of Chilkat River surface water near the proposed landfarm location is not described in the DEA; please include this information in the analysis.	1	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A

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#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
45	The DEA does not specify the excavation backfill material type. We recommend using soils similar to existing conditions to promote restoration of the disturbed wetlands to maintain current hydrological and ecological wetland functions.	1	Comment noted, thank you. The Corps plans to stockpile and re-use noncontaminated topsoil disturbed during excavation. Other backfill materials will meet regulatory standards and be geotechnically suitable.	p. 16, 63
46	OMISSION OF ALTERNATIVE INCLUDING ROAD REMOVAL **[11]** On July 15, 2019, the Army Corps came to Klukwan to meet with our Tribal Council on this issue. At that time the Army Corps' representatives assured CIV that a full remediation of the site was being seriously considered and was the agency's preferred choice at that time. We stressed to the Army Corps' staff that full remediation was our top priority. The EA as written completely fails to demonstrate to us that the different avenues to complete a full remediation of the site were addressed. How is this meaningful consultation? Not only did the Army Corps change course significantly in what it said to our Tribal Council in July but it completely failed to acknowledge why it changed course in the EA.	2	See response to Comment 6.	p. 7, 9, 11-12
47	The EA fails to adequately analyze the options available to carry out a complete remediation of the site, and fails to acknowledge that the highway expansion project will increase the costs of complete remediation. Section 2.2.6 of the EA provides three sentences as to why the agency did not evaluate the excavation of the soils beneath the highway- a complete remediation. The agency states it will not do this because this is an interim clean up.	2	See response to Comment 6.	p. 7, 9, 11-12
48	The EA as written does not provide an adequate reason as to why the different approaches available to complete a full remediation of the site were not analyzed.	2	See response to Comment 6.	p. 7, 9, 11-12
49	The Army Corps should invest the funds necessary to adequately dispose of the contamination and fully eliminate the risk it poses to human health, aquatic life and local wildlife.	2	Alternative 4 is intended to greatly reduce the risk to humans, wildlife, fish, and water quality, and is considered the most effective alternative at this point in the cleanup process. The Corps will retain liability for the contamination and will continue to address contamination at the site until risk is determined to be acceptable per ADEC regulations. Additional text has been added to Section 1.4 of the EA to more fully describe future decision points in the environmental cleanup process. Also see the response to Comment 6.	p. 7, 9, 11-12

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#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
50	Corps's responsibility under applicable federal law requires complete clean-up of all contaminated soils and water that exceed limits specified in the EA. Legal responsibility for clean-up / remediation is not limited or reduced by variations in funding amounts appropriated by the US Congress. If current funding levels do not allow for full and comprehensive cleanup, than more funding must be sought by the Corps.	4	Under current law, the FUDS Program remains liable for the site cleanup until the site no longer poses an immanent and substantial risk to human health or the environment. This interim removal action is not intended to represent the final remedial decision; however it is a necessary step in order to remove the majority of the contaminated soil and allow for an evaluation of remaining risk and potential alternatives for the final remedial decision.	p. 7
51	All contaminated materials on both sides of the highway, as well as UNDERNEATH the highway, must be removed for remediation or disposal. The Haines Highway could simply be temporarily rerouted with a small, dirt-surface detour in the immediate area of the contaminant clean-up.	4	See response to Comment 6.	p. 7, 9, 11-12
52	the EA does not include a full cleanup option.	5	See response to Comment 6.	p. 7, 9, 11-12
53	Clearly, if contaminant levels pose an "imminent and substantial endangerment to public health, welfare or the environment," LCC supports cleanup action. What the EA has not proven is the need for an intermediate, rather than a full, cleanup option.	5	Section 1.4 *Purpose and Need for Action* explains the cleanup requirements the proposed action is intended to address. The purpose of the EA is to assess and disclose the potential environmental consequences of the proposed action.	p. 7
54	The remediation plan should include an analysis of a full cleanup of contaminated soils, including those soils beneath and within the road prism. If there is indeed a way, regardless of budget or other limitations, to do a complete remediation and restoration of the site, that option should be analyzed and presented for consideration.	6	See response to Comment 6.	p. 7, 9, 11-12
55	Also work with DOT to clean it all up including under Highway	8	See response to Comment 6.	p. 7, 9, 11-12
56	The Assembly is concerned that the Environmental Assessment cleanup proposal does not include full removal of contaminated soil from under the Haines Highway roadbed. It encourages Corps to work collaboratively with Alaska DOT&PF to design a remediation program that addresses the entirety of the spill area including the contaminated soil under the Haines Highway at PMP 17.7.	9	See response to Comment 6. The Corps will continue to coordinate with Alaska DOT&PF regarding cleanup of the PMP 17.7 release area.	p. 7, 9, 11-12

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57	INSUFFICIENT ANALYSIS OF ALTERNATIVES **[6]** the EA does not provide adequate information to conclude that the preferred alternative will be sufficient to achieve the interim remediation goals, or to conclude that the preferred alternative is more cost-effective than complete remediation, given that complete remediation may ultimately be necessary.	2	Information included in the EA represents the most relevant and timely information available to take a hard look at the potential environmental consequences of the proposed action. The interim removal action is not intended to represent the final remedial decision; however it is a necessary step to meet the project purpose and need. NEPA does not require an exhaustive look at all alternatives that go beyond those that meet the project purpose and need. Additional text has been added to Section 1.4 of the EA to more fully describe future decision points in the environmental cleanup process. Also see the response to Comment 6.	p. 7, 9, 11-12
58	During a meeting at the CIV office in Klukwan on February 13, 2020, after the release of the EA, the agency stated for the first time that a full cleanup was not possible. One reason why it is not possible- provided by the Army Corps representatives - was that a temporary road would have to be built on the river side of the existing roadbed. It was brought up by Tribal Members that in fact this is not the case and that there is a potential option to build the temporary road on the east side of the existing road bed. The Army Corps did not explain why that would not be possible or practicable. Additionally, the agency cited having to move utilities as being another reason why it cannot excavate under the road bed. However, as with the temporary road justification, the agency did not explain why it would be impracticable to move utilities along this small section. These reasons for why a full clean up cannot happen are inadequate and unsupported.	2	See responses to Comment 6 and 10.	p. 7, 9, 11-12
59	Critical details of the proposed alternative are unclear in the draft EA. The preferred alternative would apparently excavate an area extending up to 10 feet from the highway on the east, and for an area extending five feet from the highway on the west. However, "excavation and backfill would be completed only in areas sufficiently distant from the highway to ensure that the roadway embankment is not compromised." EA at 15. Because the EA does not define a sufficient distance, it is unclear how much contaminated soil the Army Corps will actually be able to excavate under the preferred alternative. That information is relevant to both the effectiveness of the preferred alternative and its environmental impacts, and must be provided.	2	In 2012, the Corps began routinely collecting groundwater and soil samples in and adjacent to the project area in order to delineate the extent of contamination. Due to the confined nature of parts of the project location (underneath a main thoroughfare), the Corps is unable to delineate the exact extent of contamination. Section 2.1.3 of the EA has been amended to provide further detail explaining why the exact extent and amounts of soil cannot be determined prior to the interim remediation actions. The preferred alternative assumes the maximum dimensions of the excavation and a backfill plan will be drafted in close coordination with ADOT&PF and ADEC.	p. 5-7, 9, 54

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60	While we understand that 18 AAC 75 allows for interim clean up of hazardous materials, it does not make sense to go this route considering the number of unknown factors the agency could come up against when excavating the contaminated soil.	2	Comment noted, thank you. As with most environmental cleanup projects, some site characteristics are not fully known until field efforts begin. Also see response to comment 57.	p. 7, 9, 11-12
61	The cleanup options described in the EA are classified as 'interim' for no apparent reason other than perhaps to avoid the expense and complications of a full cleanup option. No plan for follow-up cleanup operations is set forth in the EA, and scant justification is given for leaving contaminated soil under the highway.	5	See response to Comment 6 and 57.	p. 7, 9, 11-12
62	No explanation is given as to how this determination was reached, why the agency decided to pursue "interim remediation goals" rather than permanent remediation, or how this option complies with the statute mandating "permanent remedies."	5	See response to Comment 6 and 57.	p. 7, 9, 11-12
63	DEC REGULATIONS **[8]** 18 AAC 75.330(a) states that DEC is the agency that determines whether an interim removal action is appropriate, rather than a complete clean-up. The Army Corps provides no information from DEC on how DEC made this determination, rather than seeking full remediation. Nor does the Army Corps supply an adequate explanation for why an interim removal action was chosen over complete remediation. Under 18 AAC 75.330(c) and (d), an interim removal action "may not be used to delay or supplant the cleanup process" and "must be followed by additional cleanup action as at the site unless the department determines that the interim removal action has met the requirements of the site cleanup rules." Furthermore, "[a]n interim removal action must, to the maximum extent practicable, contribute to the overall performance of any long-term cleanup action at the site." 18 AAC 75.330(b).	2	As the lead Agency for the Formerly Used Defense Sites Program (FUDS), it is up to the Corps to determine the appropriate remedy for contaminated FUDS sites in Alaska following EPA, Defense Environmental Restoration Program, FUDS, and the State of Alaska's environmental regulations and guidance. ADEC's role is to provide oversight and review of FUDS projects to ensure that the Corps is complying with ADEC regulations and guidance and that the FUDS sites that are the highest priority to the state are also prioritized by the FUDS Program for investigation and cleanup. See response to Comment 6 for further information regarding the action's purpose and need. Section 1.4 of the EA has been revised to more fully describe future decision points in the environmental cleanup process.	p. 7
64	The EA does not show that selecting an interim removal action is consistent with DEC cleanup rules in these circumstances.	2	See response to Comment 6.	p. 7, 9, 11-12
65	18 AAC 75.325. Site cleanup rules: purpose, applicability, and general provisions states that to the maximum extent practicable the responsible person/party shall use permanent remedies. We do not feel that the agency has demonstrated that a permanent remedy is not practicable.	2	See response to Comment 6.	p. 7, 9, 11-12

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66	When taking into consideration the cumulative effects of reasonably foreseeable future circumstances and actions- both at the excavation site (HFP_ MP 17.7) and the landfarm site, the agency's preferred alternative does not seem to meet 18 AAC 75.325. This section of the regulation states that the responsible patty shall recover material in a manner that minimizes the spread of contamination into an uncontaminated area by using containment, recovery, and disposal techniques appropriate to site conditions, avoids additional discharge and provides for long-term care and management of a site as required under the site cleanup rules, including proper operation and maintenance of cleanup techniques and equipment; monitoring wells and equipment if required; and institutional controls, if required under 18 AAC 75.375. The EA does not demonstrate that the preferred alternative satisfies these requirements, and is also insufficient to satisfy NEPA's "hard look" requirement	2	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA. The recommendations stated in the EA are based on the best available science discussed in Section 3 and on consultations with tribes and partners listed in Section 4.	p. 20, 70
67	At what point in the post remediation monitoring does DEC determine that a full clean-up is necessary? These regulatory action points and triggers should be clearly discussed in the EA.	2	Thank you for the comment. The Corps acknowledges that the steps of the cleanup process can be clarified more fully in the EA. Section 1.4 of the EA has been revised to more fully describe future decision points in the environmental cleanup process.	p. 7
68	Under 18 AAC 75.325. Site cleanup rules: purpose, applicability, and general provisions states that to the maximum extent practicable the responsible person/party shall use permanent remedies. Despite significant public support for a full cleanup option, the Corps has neglected to evaluate a “permanent remedy” as required by statute.	5	See response to Comment 6.	p. 7, 9, 11-12
69	The proposed action conflicts with Alaska Statutes § 41.21.610 – 630 by threatening water quality, salmon habitat, and the eagles and other wildlife that depend on water quality. The Eagle Preserve is a fundamental economic driver in the Haines Borough, providing opportunities for seasonal tours and wildlife viewing. Spawning and rearing grounds in the Eagle Preserve provide habitat for all five species of Pacific salmon, plus steelhead and trout, which together support a robust regional and statewide fishing economy.	5	See response to Comment 16.	p. 30, 78
70	LCC supports long-term monitoring of water quality to determine whether additional remediation is needed, and in order for the action to comply with 18 AAC 75.325.	5	Comment Noted. Groundwater and surface water monitoring is a component of Corps's preferred alternative.	p. 16

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71	PROPOSED WORK PLAN **[4]** We recommend the site specific workplan include measures to avoid contaminated water and sediment leakage during excavation and transport to minimize contamination in the watershed;	1	Comment noted. A site-specific workplan including best practices and impact mitigation measures will be prepared by the selected construction contractor that will be reviewed by ADEC and ADOT&PF. The planning documents will include the necessary environmental protection and stormwater pollution prevention plans as required.	N/A
72	We recommend the site specific workplan include guidance to workers for proper storage of animal attractants to prevent wildlife encounters. ADF&G has educational materials available that can help increase safety and reduce negative effects on wildlife.	1	Comment noted. A site-specific workplan including best practices and impact mitigation measures will be prepared by the selected construction contractor that will be reviewed by ADEC and ADOT&PF. The planning documents will include the necessary environmental protection and stormwater pollution prevention plans as required.	N/A
73	In a consultation meeting held Feb. 13th 2020, agency staff informed us that once a remediation technique is chosen the Army Corps and DEC will develop a final work plan and monitoring plan for the site and that stakeholders will be shown the workplan. From our understanding, under DEC regulations the agency does not have to share this work plan with the public.	2	The final work plan is public information. USACE will provide a copy of the work plan in the project information repository located at the Haines Public Library. As a sovereign nation the CIV may request consultation and discussion with USACE at any time in the remediation process.	p. 80
74	Due to the large quantities of contaminated groundwater that will have to be managed during project implementation, work should occur at the absolute lowest possible groundwater levels, late summer and early fall.	6	Comment noted. The anticipated construction timeline would begin in early summer 2021.	N/A
75	EXCAVATION AND BACKFILL **[3]** The DEA does not specify the excavation backfill material type. We recommend using soils similar to existing conditions to promote restoration of the disturbed wetlands to maintain current hydrological and ecological wetland functions.	1	See response for Comment 45.	p. 16, 63
76	We are concerned that the excavation techniques are not appropriate to deal with the site conditions and will result in additional discharge. There is no adaptive management plan in the EA that discusses how the agency plans to deal with significant rain events and flooding during the excavation of the contaminated soil and water. There is no adaptive management plan in the EA that points to alternative equipment and techniques that will be utilized if the agency has to deal with more water than is has predicted.	2	An environmental protection plan and a stormwater pollution prevention plan will be in place prior to construction. A detailed work plan created by the selected construction contractor will include necessary alternative steps should construction not progress as expected.	p. 16-17, 54

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77	excavation and backfill would be completed only in areas sufficiently distant from the highway to ensure that the roadway embankment is not compromised. EA at 15. Because the EA does not define a sufficient distance, it is unclear how much contaminated soil the Army Corps will actually be able to excavate under the preferred alternative.	2	Due to the confined nature of parts of the project location, the Corps is unable to delineate the full extent of contamination. The preferred alternative assumes the maximum amount of contaminated soil that the Corps could feasibly and technically remove during this proposed action.	p. 9-12
78	CONFLICTS WITH HIGHWAY PROJECT **[5]** The EA does not acknowledge, however, that the highway expansion project will make any future additional cleanup mandated by 18 AAC 75.330 even more costly, and that conducting only an interim removal action now could delay complete cleanup or even render it cost-prohibitive, contrary to DEC's cleanup rules. The EA also does not estimate how much complete remediation would cost now, or how that figure compares to the cost of removing contaminated soils from under the highway after the expansion project is complete.	2	Comment noted. See response to Comment 6 and 10.	p. 7, 9, 11-12
79	During a meeting at the CIV office in Klukwan on February 13, 2020, after the release of the EA, the agency stated for the first time that a full cleanup was not possible. One reason why it is not possible- provided by the Army Corps representatives - was that a temporary road would have to be built on the river side of the existing roadbed. It was brought up by Tribal Members that in fact this is not the case and that there is a potential option to build the temporary road on the east side of the existing road bed. The Army Corps did not explain why that would not be possible or practicable. Additionally, the agency cited having to move utilities as being another reason why it cannot excavate under the road bed. However, as with the temporary road justification, the agency did not explain why it would be impracticable to move utilities along this small section. These reasons for why a full clean up cannot happen are inadequate and unsupported.	2	See response to Comment 6. The Corps is happy to continue discussion with the CIV to address concerns that were not fully addressed during the consultation meeting.	p. 7, 9, 11-12

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80	Given that much of the proposed excavation area is within five feet of the highway edge and the expansion project would add 5 feet to each side of the highway, the comment that the project should be complete before the highway expansion project for "maximum effectiveness" is an understatement. If the Army Corps does not intend to excavate any soil under the highway, the project must take place before the expansion because there is no analysis showing that the preferred alternative would be sufficiently protective as reduced by the expansion.	2	Comment noted. The Corps is actively coordinating with ADOT&PF to align construction schedules to accomplish the proposed interim removal action.	p. 9-10
81	highway reconstruction efforts planned by the Alaska DOT do not take precedence over, or limit, the clean-up responsibility of the federal government. State governments, and their actions and laws, occupy a lower level of authority than does the federal government within the legal structure of the United States. It is the Alaska DOT's role and responsibility to modify their highway work schedule, based on when it might fit within the legally required federal clean-up schedule, which does take logistic precedence.	4	See response to Comment 80.	p. 9-10
82	Corps claims that proposed Haines Highway construction activities impede their ability to either do a full cleanup or even a full evaluation of cleanup options. Corps is a federal agency and should have the authority to overrule the state highway department. The need for full cleanup is established, as is statutory responsibility. Community support for full cleanup is ongoing. Furthermore, the Haines Highway project is on hold due to litigation. As of this date, no calls have been made for highway work in the year 2020. Even if the highway work should begin, the Corps should be able to coordinate with DOT to prioritize a full removal of contaminated soil at the site.	5	See response to Comment 16 and 80.	p. 9-10, 30, 78
83	PERMITTING **[1]** Will USACE need additional permitting beyond the footprint of the Haines Highway permitting included in Phase 2 ROW?	3	A site-specific workplan will be prepared by the selected construction contractor. The contractor will acquire all necessary work permits.	N/A

Environmental Impacts Concerns [38]	**1, 2, 3, 4, 5, 6, 8**		

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#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
Comment Summary: Impacts to salmon spawning channels, fish and avian habitats, water quality, and subsistence resources were of great importance to a number of commenters. Proximity to the Chilkat Bald Eagle Preserve and the regulations related to that protected area are of great concern for both the Tribe and other agencies. ADF&G provided fish use information and suggestions for riparian buffers to be included in the final version of the EA. Commenters requested clarification on restorative measures and mitigation plans for sensitive habitats and vegetation impacted by construction and landfarming. Other specific concerns include bioaccumulation of contaminants and movement through the food chain, impacts on groundwater and water quality, impacts to wildlife regarding noise and air quality during construction, mitigation measures for extreme high water events in the excavation or landfarming areas, and the potential contamination of clean soil from landfarming. Impacts to property values, quality of life, and environmental justice were also noted.				
84	ENVIRONMENTAL RESTORATION/MITIGATION **[1]** The EA doesn't present a plan for the restoration of the site after the contaminated soil has been removed. A restoration plan, including the source locations of replacement fill and wetland soils, native plants, et cetera, should be addressed and presented as a part of this document. If the site is not properly restored post-cleanup, then the whole project may in fact do more harm than good with regard to conservation of aquatic resources.	6	Section 2.2.7.3 summarizes identified measures to avoid, minimize, or mitigate the impacts of the proposed action. The removal of contaminants from the project site benefits the overall environment. The Corps anticipates no long-term significant loss to local wetland habitat or function as a result of the project. Natural revegetation is anticipated to occur rapidly and over time there would be no discernible change in vegetation or wildlife use of the area.	p. 17-19, 32-34
85	CULTURAL RESOURCES **[1]** Although Corps will utilize a Corps archaeologist on site for any cultural considerations occurring during the project, DPOR recommends Corps have continued close contact with the State Office of History and Archaeology and consider utilizing a cultural observer from a local Native organization.	3	The Corps would consult with SHPO, the Chilkoot Indian Association, and Chilkat Indian Village and other agencies as needed to determine how to address any inadvertently-discovered cultural resources during project implementation.	p. 18, 33-34
86	SENSITIVE SPECIES AND HABITAT LOSS **[8]** Don't clean dirt in another wetland, near a salmon spawning creek.	8	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
87	Under the regulations, if a planned clean-up affects an anadromous fish-bearing stream designated under AS 16.20, activities under the site clean-up rules are subject to coordination with appropriate resource agencies, including the Department of Fish and Game (AS 16.05.871(a) or AS 16.20.	2	The Corps consulted with representatives of ADF&G during the preparation of the Draft EA to collect information about the project site and coordinate regarding its current and future use pertaining to sensitive species and habitats. A SWPPP will be a component of any future work plan regarding the proposed action, which would specify measures to control runoff, contain sediments within the construction area, and reduce the potential for erosion.	p. 8, 17-19, 28

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#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
88	What measures will be taken to protect wetland areas in and near the clean-up site?	3	A stormwater pollution prevention plan will be a component of any future work plan regarding the proposed action, which would specify measures to control runoff, contain sediments within the construction area, and reduce the potential for erosion. Although backfill may extend into areas that contain wetlands, the Corps anticipates no long-term significant loss to local wetland habitat or function as a result of the proposed action. Natural revegetation is expected to occur, and mitigation measures such as affecting minimal areas of disturbance, grubbing and clearing outside of the primary nesting season, and recontouring excavated areas will aid in restoration of the project area.	p. 17-19, 31-33
89	There is a concern regarding the land farming location along a salmon stream and what environmental protection procedures will be employed during the mitigation project. DNR generally establishes a riparian buffer zone of approximately 300 feet from all streams, creeks, rivers and lakes, and recommends the same distance or greater for the location of the contaminated soil storage.	3	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
90	the Alaska DEC is mandated to maintain and safeguard all salmon-bearing rivers in our state. They should be advocating for any land-farming remediation to take place outside of the Chilkat watershed, so that even in the event of an accident, no effluent could enter the vital, salmon-bearing, life- and culture-sustaining Chilkat watershed.	4	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
91	The proposed action conflicts with Alaska Statutes § 41.21.610 – 630 by threatening water quality, salmon habitat, and the eagles and other wildlife that depend on water quality. The Eagle Preserve is a fundamental economic driver in the Haines Borough, providing opportunities for seasonal tours and wildlife viewing. Spawning and rearing grounds in the Eagle Preserve provide habitat for all five species of Pacific salmon, plus steelhead and trout, which together support a robust regional and statewide fishing economy.	5	The Corps incorporated Alaska Statutes § 41.21.610 – 630 during the analysis in preparation of the Draft EA.	p. 30, 78
92	Proposed distance from landfarm to spawning channel is insufficient, as Alaska Administrative Code requires a 100 foot buffer: 18 AAC 78.274.	5	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
93	Landfarming close to the chum channel could also result in contaminants following the easy downstream route provided by the chum channel directly into the Chilkat River.	5	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A

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#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
94	BIOACCUMULATION **[1]** the EA singles out benzene and xylene as "not bioaccumulative." However, other toxic contaminants are known to be in the soil and accessing the water. Toluene is a substance of concern under the Environment Canada Domestic Substance List as suspected to be an environmental toxin and be persistent or bioaccumulative, as well as having moderate to high toxicity concern in humans, including carcinogenicity. Has Corps evaluated all contaminants for potential bioaccumulative capacity?	5	Toluene has not been detected in groundwater at the project site in excess of state (ADEC) or federal (EPA) regulatory or screening levels and is not considered to be a bioaccumulative chemical by EPA. Therefore, the United States does not consider Toluene to be a bioaccumulative chemical. The same is true for each of the BTEX compounds. In fact, none of the contaminants detected at the project location (i.e. benzene, ethylbenzene, xylenes, 1-methylnaphthalene, naphthalene, Gasoline Range Organics (GROs), and Diesel Range Organics (DROs) are considered to be bioaccumulative compounds. Section 3.3.2.1 of the EA has been updated to clarify that none of the contaminants of concern in groundwater are considered bioaccumulative by the EPA.	p. 30-33, 47-55
95	AIR QUALITY **[1]** The EA does not analyze potential environmental impacts from contaminated dirt that could be blown from the landfarm as fugitive dust, nor does it discuss any possible methods to control such fugitive dust.	2	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
96	GROUNDWATER TABLE DEPTH **[3]** In the DEA, groundwater depth at the proposed landfarm is estimated to be 10–12 ft based on anecdotal information from the landowner. We recommend investigating seasonal groundwater depth fluctuation to ensure groundwater will not contact leachate from the landfarm and contaminate the spawning channel, which is solely fed by groundwater.	1	The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
97	If the ground water table is too shallow then the agency should use appropriate liners and other techniques to carryout landfarming in areas with shallow ground water tables.	2	Comment noted, thank you. Any landfarm location would adhere to the guidance published by ADEC. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
98	Due to the large quantities of contaminated groundwater that will have to be managed during project implementation, work should occur at the absolute lowest possible groundwater levels, late summer and early fall.	6	Comment noted, thank you.	N/A
99	CHILKAT BALD EAGLE PRESERVE **[3]** The Preserve is also statutorily intended to (1) protect salmon and their habitats, (2) provide continued opportunities for research, study and enjoyment of bald eagles and other wildlife, (3) protect water quality and quantity, (4) provide for other public uses consistent with the primary purpose, and (5) provide for the continued traditional and natural resource-based lifestyle of the people living in the general areas. See page 26. The agency's preferred alternative fails to meet Alaska Statutes § 41.21.610 - 630 because it will not adequately protect water quality.	2	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA. In addition the Corps incorporated the Alaska Statutes § 41.21.610 – 630 in preparation of the Draft EA. Although the Corps took into consideration potential effects to the Chilkat Bald Eagle Preserve, the project location is outside the boundaries of the Preserve.	p. 30, 78

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#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
100	If a landfarming site cannot be located- one that is NOT adjacent to the Chilkat River or its main tributaries and outside of the Chilkat Bald Eagle Preserve, then the material should be shipped out of the Chilkat Valley. This is a pristine watershed that is protected as a preserve and one that contributes to the regional and statewide tourism and fishing economies.	2	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
101	The proposed action conflicts with Alaska Statutes § 41.21.610 – 630 by threatening water quality, salmon habitat, and the eagles and other wildlife that depend on water quality. The Eagle Preserve is a fundamental economic driver in the Haines Borough, providing opportunities for seasonal tours and wildlife viewing. Spawning and rearing grounds in the Eagle Preserve provide habitat for all five species of Pacific salmon, plus steelhead and trout, which together support a robust regional and statewide fishing economy.	5	See response to comment 99.	p. 30, 78
102	FLOODING/HIGH WATER EVENTS **[5]** On several occasions, ADF&G staff observed the Chilkat River back flooding the spawning channel and the adjacent historic floodplain during high water events May–September. The presence of Chilkat River surface water near the proposed landfarm location is not described in the DEA; please include this information in the analysis.	1	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
103	The EA does not address the potential that runoff at the landfarm may need to be collected, treated, and discharged.	2	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
104	There is no adaptive management plan in the EA that discusses how the agency plans to deal with significant rain events, flooding, rain or ice events during the landfarming phase of the remediation.	2	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
105	the proposed landfarm site, being in an area prone to flooding and within unknown ground water table most certainly poses a potential threat to water quality.	2	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
106	DPOR also recommends stringent guidelines to prevent the land farming soil from risk of future watershed contamination of the CBEP during extreme run-off events or high water/flooding conditions, which is a violation under 11AAC21.010 of contaminating water of the CBEP.	3	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A

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#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
107	MONITORING **[6]** We also recommend considering monitoring surface water quality in the spawning channel to confirm the effectiveness of the engineered controls at preventing leachate from entering the stream.	1	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
108	Considering the past monitoring results, it is obvious that there are certain times when contaminate levels do not meet DEC water quality criteria and other times the results do meet criteria. Due to the inconsistency in results the site should be monitored for longer than three years. Considering the agency is selecting an interim clean-up under the regulations we do not feel the preferred agency alternative describes how it will provide for long-term care and management of the site, including proper operation and maintenance of monitoring wells.	2	Groundwater and surface water monitoring is described in the EA as component of the Corps's preferred alternative. This interim removal action is not intended to represent the final remedial decision; however it is a necessary step in order to remove the majority of the contaminated soil and allow for an evaluation of remaining risk and potential alternatives for the final remedial decision. Additional groundwater and surface water sampling will be performed as necessary under ADEC regulations and guidance in order to support the final remedial decision.	p. 16
109	A continuous monitoring plan should be part of the EA.	2	See response to Comment 108.	p. 16
110	Ground water level and seasonal fluctuations at the site have not been adequately determined. A monitoring well must be placed to gather ground water level data and measure levels during the duration of the landfarm.	2	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A
111	LCC supports long-term monitoring of water quality to determine whether additional remediation is needed, and in order for the action to comply with 18 AAC 75.325.	5	See response to Comment 108.	p. 16
112	Three years of post-project monitoring is not enough. The site should be monitored for ten years to ensure that no further remediation is necessary, and also to provide assessment information that may inform future clean-up projects.	6	See response to Comment 108.	p. 16
113	OXYGEN RELEASING COMPOUNDS & IN SITU TREATMENT **[3]** What concerns should DPOR have about the impacts of the introduction of ORC and GRC compounds into the environment and watershed at the contaminated area and the soil farming site?	3	The treatment materials planned to be applied include ORC and GAC. These materials are non-toxic. The addition of treatment materials would temporarily elevate oxygen levels in the subsurface, but would not result in significant adverse affects to biological resources or water quality. A detailed workplan including these remediation methods would be submitted to ADEC for review and approval prior to construction.	p. 11, 33, 54-55

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#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
114	LCC would like to be informed as to the ingredients of the proposed ORC, and any studies relevant to the specific action of the ORC on the health of soil organisms, water quality and other possible impacts.	5	Multiple ORC formulas are available for purchase from the environmental industry. Examples of ORC compounds include calcium peroxide (commonly used in baking bread and in toothpaste) and magnesium hydroxide (a common antacid). The construction contractor selected by the Corps will prepare a workplan that includes details on the treatment materials to be used in the proposed action for ADEC review and approval. The final work plan will be available to the public in the project information repository located in the Haines Library.	N/A
115	LCC supports the use of Granular Activated Carbon (GAC) in water treatment processes, and in areas with residual contaminants prior to backfilling, in order to more thoroughly capture toxins and prevent contamination of the Chilkat River slough.	5	Comment noted, thank you.	N/A
116	ROADWAY AND UTILITY IMPACTS **[1]** Additionally, the agency cited having to move utilities as being another reason why it cannot excavate under the road bed. However, as with the temporary road justification, the agency did not explain why it would be impracticable to move utilities along this small section.	2	See response to Comment 6. Relocation of utilities was not considered because it would not be required to meet the purpose and need of the proposed action in the EA.	p. 7, 9, 11-12
117	NOISE **[1]** The noise, smells, potential environmental contamination and disruption caused by 1,750 trucks to and from the project site depositing contaminated soil, weekly visits to till the soil, and up to 3 years of use as a de facto waste site is too much to ask of the surrounding neighborhood.	5	Disruption due to trucking would be limited to the construction window of approximately 8 weeks. No significant impacts to air quality or traffic outside of the construction window were identified in the analysis of alternatives.	p. 21, 61
118	PROPERTY DEVALUATION **[1]** In addition to environmental concerns, residents have expressed concern that the waste dumping will set a precedent for additional land abuses in the neighborhood, dooming local properties to a downward spiral of lower property values and degraded quality of life.	5	This project will remove contaminated soil and remediate groundwater and all wastes will be disposed of per State of Alaska regulations to ensure the methods protect human health and the environment. The result will be an improvement compared to the current land condition. The impacts from the project would be temporary in nature and are presumed to have little to no impact on property values in the area due to the distance from the project location to the nearest residence.	p. 58-60
119	ZONING RESTRICTIONS FOR CONTAMINATION **[1]** Both properties (for landfarming) are in a primarily residential area and in close proximity to other residences, and both properties would likely be subject to the Haines Borough's Conditional Use Permit application requirements, which include a public process and an uncertain permitting outcome.	5	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A

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#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
120	ENVIRONMENTAL JUSTICE **[2]** Meaningful Involvement requires that (1) potentially affected community members have an appropriate opportunity to participate in decisions about a proposed activity that will affect their human health or environment; (2) the public's input can influence the regulatory agency's decision; (3) the concerns of all participants involved will be considered in the decision-making process; and (4) the decision-makers seek out and facilitate the involvement of those potentially affected (https://www.epa.gov/environmentaljustice/learn-about-environmental-justice). We conclude that government to government consultation and environmental justice principles have not been met by the Department of Defense, Army Corps' remediation process.	2	See response to Comment 4 and 8.	N/A
121	the Corps EA does not fairly evaluate the potential environmental justice impacts on the recipient community should the contaminated soil be remediated in a local neighborhood. It is well documented that poor communities are disproportionately impacted by, and targeted for, toxic waste dumps, and it is reasonable to assume that recipient community would be subjected to cumulative negative impacts as their property values and quality of life are degraded by their proximity to the dumping grounds.	5	Comment noted, thank you. An environmental justice evaluation found that there are no significant impacts to EJ communities as defined in EO 12898. In addition, the Corps is no longer considering the landfarm location described in the Draft EA.	p. 34-47

Data Insufficiencies, Clarifications & Edits [15]	**1, 2, 4, 5, 6**		
Comment Summary: Some commenters provided specific requests for information, or provided referenced information for use in the final EA. Calls were made for more studies of the action area and potential landfarm location, including groundwater table verification, further contamination delineation, advanced leachate studies, and confirmation of natural attenuation in the climate surrounding Haines.			
122 GROUNDWATER TABLE DEPTH **[2]** We informed the Army Corps that this site floods and we are concerned that the agency and DEC do not have the hydrologic data necessary to make informed decisions about what type of liners are needed, how big the berms of the landfarm need to be, etc. The EA does not provide any such data; it only states that the groundwater depth is estimated at 10-12 feet, with no indication of how that estimate was derived. EA at 14.	2	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A

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#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
123	Corps should provide specific data, such as perc tests and actual depth to ground water in different seasons, for the site(s) being considered so the public can make meaningful comments on the plan. Rushing the timeline and skipping important steps is more likely to result in unintended consequences, including the possibility of contaminating a currently clean site.	5	The Corps and the selected construction contractor would prepare a site-specific workplan that would require ADEC review and approval before any ground disturbance began.	p. 16-19, 54-56
124	LANDFARMING **[1]** the EA does not estimate the rate of attenuation, and the vague assertion alone is not a sound basis from which to draw conclusions about the potential environmental impacts of the landfarm method.	2	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA. For more information on the technical applicability of landfarming in Alaska, see ADEC's Technical Memorandum "Landfarming at Sites in Alaska" (2020).	N/A
125	CONTAMINANT HAZARDS **[2]** The EA does not state whether the Army Corps will use a non-permeable liner at the landfarm site, only that such a liner may be required based on leachate testing. EA at 47. However, the EA does not say when leachate testing will occur, why it could not be conducted before the EA, what kinds of tests will be performed, or what criteria the agency will apply in determining whether to use a liner. Thus, the EA does not provide sufficient information about the risk that leachate could contaminate groundwater at the proposed landfarm.	2	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA.	N/A

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#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
126	the agency does not appear to have sampled the soil under the highway to determine the relative degree of contamination there, does not provide any technical analysis of how the preferred alternative could be expected to alter the flow of contamination to the slough, and does not discuss the potential for the clean soil to become contaminated by exposure to the soil under the highway.	2	In 2012, the Corps began collecting groundwater, surface water, soil, and sediment samples in the project area on both sides of the highway (Section 1.2). Although soils beneath the asphalt have not been tested, the site contamination was extrapolated from either side of the highway to estimate the portion of the highway that likely contains smear zone contamination. Soil sampling on both sides of the highway suggest that the contamination under the highway is limited to the groundwater smear zone at a depth of approximately 3-5 feet below the ground surface and is limited in extent under the highway (Section 3.6.1.1). The volume of contaminated soil under the highway is a small volume compared to the release area that contains contaminated soil from the surface down to depths as great as 15 feet below ground surface. It is unlikely that the smear zone contamination beneath the highway would migrate into clean areas given that the spill occurred 52 years ago and sampling data does not indicate product remains that could migrate, and because the in-situ treatment methods will act to absorb and promote natural attenuation of the residual contamination. The groundwater elevation data collected from groundwater monitoring wells at the site demonstrate that the groundwater gradient is towards the Chilkat River Slough during low river stage (mainly from fall to breakup), and away from the Slough during high water events (typically all summer) (Section 3.6.1.1 & Table 21). Based on this model, the use of in-situ treatment measures that are part of the preferred alternative would increase the rate of natural attenuation of contaminants while also acting to prevent the migration of contaminants to the Slough during low water in the channel. It is anticipated that the groundwater gradient will continue to be controlled by precipitation events and the stage of the Chilkat River after the preferred alternative is completed.	p. 5-6, 9, 51-55
127	INTERIM REMEDIAL ACTION **[2]** The EA does not acknowledge that the highway expansion project will make any future additional cleanup mandated by 18 AAC 75.330 even more costly, and that conducting only an interim removal action now could delay complete cleanup or even render it cost-prohibitive, contrary to DEC's cleanup rules... The EA does not show that selecting an interim removal action is consistent with DEC cleanup rules in these circumstances.	2	Comment noted, thank you. Please also see the response to Comment 6.	p. 7, 9, 11-12

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#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
128	The reasons for conducting an "interim" project, as this EA proposes, are not made clear. If DOT is going to grub and remove a large volume of potentially-contaminated soil from their right-of-way, can't some or all of the contaminated soil from beneath the road simply be added onto this effort?	6	The ADOT&PF highway project does not incorporate any removal or cleanup of contaminated soil other than associated with grubbing vegetation on the surface. In addition, the ADOT&PF project does not include the removal of the highway at the location of this FUDS project and will offer no greater access to contaminated soils than currently achievable under existing conditions. ADOT&PF and the Corps are coordinating construction and access schedules to allow the greatest amount of contaminated soils to be addressed as technically feasible. The Corps did not fully evaluate an alternative that included the full removal of the highway as the project goals are able to be met through means more favorable to the project constraints described in the EA.	p. 9-10
129	BIOLOGICAL RESOURCES, TABLE 6 **[1]** Please change the citation to National Marine Fisheries Service. ADF&G does not use the fish life stage terms presented in the table.	1	Changed citation to correct study.	p. 29
130	ECONOMY AND SUBSISTENCE, SOCIOECONOMICS, AND ENVIRONMENTAL JUSTICE, TABLE 16 **[1]** Please use the correct citation for ADF&G, not AKDF&G.	1	Corrected abbreviation.	p. 43
131	WILDLIFE REPORTING **[1]** We request you notify ADF&G Division of Wildlife Conservation (907-465-4329) of any negative encounters with wildlife during project activities and report dates and locations of collared brown bears and moose observations.	1	Comment noted, thank you. The Corps will perform any needed wildlife surveys prior to construction, but ongoing wildlife monitoring or reporting is not usually part of the Corps' construction projects.	N/A
132	WORKPLAN **[2]** We demand that the Army Corps includes us in the process to develop this work plan so we are can be assured our questions and concerns are adequately addressed under DOD's consultation laws and policies.	2	The Corps has a government-to-government responsibility and obligation to consult with the CIV as a sovereign nation. The CIV may request government-to-government consultation at any time to discuss the development of a workplan.	N/A
133	Corps should share the proposed work plan with the public and offer a chance for review. Local knowledge may make the difference between a successful project, and one that results in further contamination of the watershed.	5	The Corps will coordinate with the appropriate agencies to conduct oversight throughout the duration of the project. The Corps will prepare a workplan and final report documenting the implementation of the chosen alternative and submit them to ADEC for review and approval. The final work plan and report will be made available to the public in the project information repository located in the Haines Library.	p. 80

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#	TOPIC [Total number of commenters that addressed this topic]	Commenters	Response	Location(s) of Edit or Source in Draft EA
134	REVISIONS TO DRAFT EA **[2]** We ask that this draft be withdrawn and replaced with an EA that provides alternative actions that are backed by information, data and analysis that demonstrate there is not a chance for significant adverse impacts or an Environmental Impact Statement that acknowledges the chance for significant adverse impacts. Please keep the Chilkat Indian Village informed as the agency incorporates our comments and considerations into the plan to remediate this site in our traditional territory.	2	The revised EA will show that the excavated contaminated soil will be disposed offsite at a licensed waste facility. Offsite disposal was included in the preferred alternative as an option if a suitable landfarm location could not be found in Haines. The EA cites numerous studies prepared by the Corps regarding contaminants present at the treatment site and incorporates data from these studies into the analysis. The analysis draws upon the Corps' extensive history of completing similar cleanup projects in Alaska, and is sufficient to determine that there would be no significant impacts as defined by NEPA.	N/A
135	LCC requests an addendum to the EA that provides site-specific data about landfarming sites that are being considered so that the public can make meaningful comment. LCC requests that the Corps maintain communications with community stakeholders throughout the planning and cleanup process.	5	Comment noted, thank you. The Corps is no longer considering the landfarm location described in the Draft EA. The Corps will continue to provide project updates to the public at the Haines Restoration Advisory Board meetings and fact sheets, and will seek public comment on the proposed final remedy for the site in the future. Project documents can be viewed by the public in the project information repository located in the Haines Library. Stakeholders may also contact the Project Manager directly with questions during the project.	N/A
136	REMEDIATION TECHNIQUES **[1]** LCC requests additional detailed information about the proposed cleanup process. For example, the aerobic microbes are known to consume benzene, but do they consume toluene, xylene, and the other contaminants?	5	All organic petroleum constituents at the site can be metabolized by microbes anaerobically or aerobically in the environment if the microbes are present under geochemically favorable conditions. Addition of activated carbon to the contaminated smear zone is intended to improve the geochemical conditions for the microbes to accelerate anaerobic degradation by sorbing the contamination to the activated carbon and by providing a preferential substrate for the microbes to live to consume the sorbed contamination.	p. 47-54