

## **APPENDIX K—TECHNICAL APPENDICES**

**EIS Sections and Related Technical Appendices (Appendix K)**

Chapter/Section	Technical Appendix
<b>Chapter 1: Purpose and Need</b>	No
<b>Chapter 2: Alternatives</b>	Yes
<b>Chapter 3: Affected Environment*</b>	
Section 3.1—Introduction to Affected Environment	Yes
Section 3.2—Lands	No
Section 3.3—Needs and Welfare of the People – Socioeconomics	No
Section 3.4—Environmental Justice	No
Section 3.5—Recreation	No
Section 3.6—Commercial and Recreational Fisheries	Yes
Section 3.7—Cultural Resources	Yes
Section 3.8—Historic Properties	No
Section 3.9—Subsistence	Yes
Section 3.10—Health and Safety	Yes
Section 3.11—Aesthetics	No
Section 3.12—Transportation and Navigation	Yes
Section 3.13—Geology	Yes
Section 3.14—Soils	Yes
Section 3.15—Geohazards	Yes
Section 3.16—Surface Water Hydrology	Yes
Section 3.17—Groundwater Hydrology	Yes
Section 3.18—Water and Sediment Quality	Yes
Section 3.19—Noise	No
Section 3.20—Air Quality	No
Section 3.21—Food and Fiber Production	No
Section 3.22—Wetlands and Other Waters/Special Aquatic Sites	No
Section 3.23—Wildlife Values	No
Section 3.24—Fish Values	No
Section 3.25—Threatened and Endangered Species	No
Section 3.26—Vegetation	Yes
<b>Chapter 4: Environmental Consequences*</b>	
Section 4.1—Introduction to Environmental Consequences	No
Section 4.2—Lands	No
Section 4.3—Needs and Welfare of the People—Socioeconomics	No
Section 4.4—Environmental Justice	No
Section 4.5—Recreation	No

**EIS Sections and Related Technical Appendices (Appendix K)**

<b>Chapter/Section</b>	<b>Technical Appendix</b>
Section 4.6—Commercial and Recreational Fisheries	No
Section 4.7—Cultural Resources	No
Section 4.8—Historic Properties	No
Section 4.9—Subsistence	No
Section 4.10—Health and Safety	Yes
Section 4.11—Aesthetics	Yes
Section 4.12—Transportation and Navigation	No
Section 4.13—Geology	Yes
Section 4.14—Soils	Yes
Section 4.15—Geohazards	Yes
Section 4.16—Surface Water Hydrology	Yes
Section 4.17—Groundwater Hydrology	Yes
Section 4.18—Water and Sediment Quality	Yes
Section 4.19—Noise	No
Section 4.20—Air Quality	Yes
Section 4.21—Food and Fiber Production	No
Section 4.22—Wetlands and Other Waters/Special Aquatic Sites	Yes
Section 4.23—Wildlife Values	No
Section 4.24—Fish Values	Yes
Section 4.25—Threatened and Endangered Species	Yes
Section 4.26—Vegetation	No
Section 4.27—Spill Risk	Yes
<b>Chapter 5: Mitigation</b>	No
<b>Chapter 6: Consultation And Coordination</b>	No
<b>Chapter 7: List of Preparers</b>	No
<b>Chapter 8: List of Agencies, Organizations, and Persons to Whom Copies of the Statement Have Been Sent</b>	No
<b>Chapter 9: References</b>	No

\*Chapter 3 and Chapter 4 are made up of sections 3.1 to 3.26, and 4.1 to 4.27, respectively.

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## K2.0 ALTERNATIVES

### K2.1 ALTERNATIVE 1A

#### K2.1.1 Alternative 1a Project Components Footprints

Table K2-1 provides a summary of the Alternative 1a project footprint for each of the four project components (mine site, transportation corridor, port, and natural gas pipeline) described in Chapter 2, Alternatives, of the Environmental Impact Statement (EIS).

**Table K2-1: Alternative 1a Project Footprint**

Project Component	Facility	Permanent Footprint (acres)	Temporary Construction Footprint (acres) <sup>1</sup>	Length (miles)
Mine Site	Open Pit	609	--	--
	Sediment/Seepage Collection Systems	360	--	--
	Bulk Tailings Storage Facility	2,797	--	--
	Pyritic Tailings Storage Facility	1,000	--	--
	Stockpiles	527	--	--
	Quarries <sup>2</sup>	860	--	--
	On-site Access Roads	860	--	39
	Mineral Processing Facilities	113	--	--
	Mill Site Power Plant	22	--	--
	Mine Site Infrastructure	139	--	--
	Water Management Ponds	1,066	--	--
	Waste Management Facilities	17	--	--
	Water Treatment Plants	19	<1	--
<b>Mine Site Total</b>		<b>8,390</b>	<b>&lt;1</b>	<b>39</b>
Transportation Corridor	Iliamna Spur Road	--	--	--
	Explosive Storage Spur Road	4	2	<1
	Mine Access Road	353	290	35
	Kokhanok Spur Road	15	10	1
	Pedro Bay Airport Spur Road	--	--	--
	Port Access Road	411	288	37
	North Access Road	--	--	--
	Water Extraction Pads and Access Roads	<1	1	<1
	Material Sites	380	--	--
	North Ferry Terminal	--	--	--
	South Ferry Terminal	23	5	--
	Kokhanok East Ferry Terminal	--	--	--
	Eagle Bay Ferry Terminal	7	2	--
	Pile Bay Ferry Terminal	--	--	--
	<b>Transportation Corridor Total</b>	<b>1,194</b>	<b>599</b>	<b>74</b>
Port	Amakdedori Port	17	7	--
	Amakdedori Port Airstrip	6	4	<1
	Diamond Point Port	--	--	--
	Diamond Point Port Dredging Area	--	--	--
	Water Extraction Pads and Access Roads	1	<1	<1
	Lightering Location—Mooring Buoys and Anchors	<1	--	--
<b>Port Total</b>		<b>24</b>	<b>12</b>	<b>&lt;1</b>
Natural Gas Pipeline	Compressor Station Pad <sup>3</sup>	2	--	<1
	HDD Pullback Work Area	--	<1	--

**Table K2-1: Alternative 1a Project Footprint**

Project Component	Facility	Permanent Footprint (acres)	Temporary Construction Footprint (acres) <sup>1</sup>	Length (miles)
	Onshore Pipeline-Only Pipeline Corridor Segments	--	219	13
	Material Sites	--	--	--
	Pipeline Construction Access Roads	--	--	--
	Cook Inlet Segment	--	628	104
	Cottonwood Bay Segment	--	--	--
	Iliamna Lake Segment	1	156	21
	<b>Natural Gas Pipeline Total</b>	<b>3</b>	<b>1,004</b>	<b>193<sup>4</sup></b>
	<b>Alternative 1a Total</b>	<b>9,611</b>	<b>1,615</b>	<b>--</b>

Notes:

Footprints are based on project GIS database. Numbers are rounded to the nearest whole number; therefore, the sum of individual facilities may not match the totals listed for the overall component.

<sup>1</sup> The temporary construction footprint for the transportation corridor and port components includes a 30-foot buffer around the permanent footprint where temporary construction-related activities would occur; except for the water extraction site access roads, which include a 5-foot buffer. The temporary construction footprint for the onshore pipeline-only segments (i.e., not adjacent to an access road) of the natural gas pipeline component includes a 150-foot-wide impact corridor to account for pipeline trenching, side-casting, and equipment operation/travel. The temporary construction footprint for offshore segments of the natural gas pipeline (i.e., Iliamna Lake and Cook Inlet) varies (up to 102 foot maximum), as outlined in PLP 2019c.

<sup>2</sup> Includes Quarry B and Quarry C; Quarry A is in the footprint of the bulk TSF.

<sup>3</sup> Includes the tie-in to the compressor station.

<sup>4</sup> Total length of pipeline. Includes lengths for segments that are co-located with the transportation corridor access road(s) that are not listed under the natural gas pipeline section of the table.

-- = not applicable

TSF = tailings storage facility

## K2.1.2 Summary of Project Phases

Table K2-2 presents a summary and schedule of the four project phases (construction, operations, closure, and post-closure) used to describe the project and assess impacts throughout the EIS.

**Table K2-2: Summary of Project Phases**

Phase	Activity	Absolute Year (Y)	Construction Year (CY)	Operations Year (OY)	Closure Year (CY)
Construction (4 years)	Construction	Y1 – Y4	CY1 – CY4	-	-
	Commissioning activities	Y4	CY4 – occurs in parallel with final construction	-	-
	Pre-production mining/dewatering	Y3 – Y4	CY3-CY4 – occurs in parallel with construction	-	-
Operations (20 years)	Operations	Y5 – Y24	-	OY1 – OY20	
Closure (20 years) <sup>1</sup>	Reclamation and closure	Y25 – Y45	-	-	CLY1 - CLY20
Post-closure (long-term) <sup>2</sup>	Monitoring	Y46 →	-	-	CLY21 →

Notes:

<sup>1</sup> Includes closures phases 1 and 2 (PLP 2019d).

<sup>2</sup> Includes closure phase 3 and post-closure phase 4 (PLP 2019d). The long-term post-closure phase is expected to last for centuries.

### K2.1.3 Applicant's Proposed Construction Schedule

Table K2-3 presents a high-level overview of the proposed construction schedule.

**Table K2-3: Proposed Construction Schedule**

Construction Activity	Estimated Start	Estimated End
<b>Access Infrastructure</b>		
Amakdedori port site capture (land by barge)	May Y1	--
North and south ferry terminal site capture	June/July Y1	--
Construct temporary access Amakdedori to Kokhanok	June Y1	September Y1
Construct temporary access north ferry terminal to mine site	July Y1	November Y1
Access road construction (south)	September Y1	July Y2
Access road construction (north)	November Y1	October Y2
Construct major bridges	June Y2	September Y2
Amakdedori port and dock construction	September Y1	September Y2
Construct south ferry terminal	June Y2	September Y2
Construct north ferry terminal	June Y2	September Y2
<i>Access construction complete</i>	--	<i>October Y2</i>
Ferry vessel construction and launch	September Y2	September Y3
<b>Natural Gas Pipeline</b>		
Pipeline construction along road segments	November Y1	October Y2
Offshore equipment mobilization and staging of vessels/supplies	March Y2	May Y2
Construction of shoreline transition (trenching/HDD drilled from shore and tied in)	May Y2	August Y2
Cook Inlet sub-sea pipeline placement (trenching, pipe welding/ placement/testing, as-built survey)	June Y2	August Y2
Offshore equipment demobilization	September Y2	--
Anchor Point compressor station	June Y3	August Y3
Iliamna Lake sub-lake placement	June Y3	July Y3
<i>Natural gas pipeline construction complete</i>	--	<i>September Y3</i>
<b>Mine Site</b>		
Site capture (establish construction infrastructure)	November Y1	August Y2
Major site earthworks	September Y2	May Y4
Mill and infrastructure construction	May Y3	October Y4
Pit pre-production mining	September Y3	October Y4
<i>Commencement of operations</i>	<i>October Y4</i>	--

Notes:

-- = not applicable

HDD = horizontal directional drilling

Y = Year

Source: PLP 2020-RFI 162

## K2.1.4 Mining Phases, Material Type, and Volumes

Table K2-4 summarizes the types and volumes of material proposed to be mined during pre-production and production mining.

**Table K2-4: Proposed Material to be Mined**

Mining Period	Material Type	Quantity
Pre-production (during the construction phase)	Overburden	22 million tons
	Waste rock	11 million tons
Production (during the operations phase)	Overburden	38 million tons
	Mineralized material process plant fed	1,291 million tons
	Waste rock	82 million tons

Source: PLP 2019d

## K2.1.5 Mining Supplies, Processing Reagents, and Material

Table K2-5 lists the average annual quantities of fuel, mining, milling, and miscellaneous consumables, as well as common mining supplies, processing reagents, and materials. Typical packaging for transportation is also provided.

**Table K2-5: Mine Site Supplies and Quantities**

Material/Supply/Reagent	Use	Shipping/Preparation	Annual Consumption <sup>1</sup>
Diesel Fuel	Vehicles and blasting	Shipped in bulk to the port and transferred to storage tank. Transferred to 6,350-gallon ISO tank-containers to ship to the mine site and there transferred to storage tanks.	16 million gallons
Lubricants	Vehicles and equipment	Drums and totes in containers	1,000 tons
Ammonium nitrate prill	Blasting	Bulk container	17,500 tons
Primers, detonators, and detonating cord	Blasting	Specialized packaging as required, shipped in containers	112,000 Units
Blasting emulsion ingredients	Blasting	Specialized packaging as required, shipped in containers	8,000 tons
Packaged explosives	Blasting	Specialized packaging as required, shipped in containers.	Included in miscellaneous supplies.
Haulage truck and other tires	Vehicles	Bulk containers/break bulk	1,000 tons
Ground-engaging tools	Drilling and loading	Bulk containers	Included in miscellaneous supplies.
Calcium Oxide (quick lime)	pH modifier; depresses pyrite in the copper-molybdenum flotation process. pH modifier for water treatment	Calcium oxide pebbles (80%) shipped in specially adapted shipping containers. Pebbles would be crushed and mixed with water to form lime slurry at the lime plant.	135,000 tons

**Table K2-5: Mine Site Supplies and Quantities**

<b>Material/Supply/ Reagent</b>	<b>Use</b>	<b>Shipping/Preparation</b>	<b>Annual Consumption<sup>1</sup></b>
Sodium Ethyl Xanthate	Copper collector; used in the rougher flotation circuit.	Pelletized reagent packaged in 1-ton bags and shipped in containers. Mixed with process water to form 20% solution and stored in collector storage tank. Mix and storage tanks vented externally with fans.	8,000 tons
Fuel Oil (Diesel)	Used in the flotation process.	Shipped in tanker trucks and stored in the main head tank in the copper-molybdenum concentrator area.	Included in diesel fuel total.
Sodium Hydrogen Sulfide (NaHS)	Copper depressant used in the copper-molybdenum separation processes.	Pelletized reagent packaged in 1-ton bags and shipped in containers. Mixed with process water to form 20% solution and stored in the sodium hydrogen sulfide storage tank.	4,000 tons
Carboxy Methyl Cellulose	Depressant; anionic polymer used to depress clay and related gangue material in the bulk cleaner flotation circuit.	Pelletized reagent packaged in 1-ton bags and shipped in containers. Mixed with process water in the agitated dispersant tank to form 20 percent solution and stored in dispersant storage tank.	1,000 tons
Methyl Isobutyl Carbinol	Frother; maintains air bubbles in the flotation circuits.	Shipped in 20-foot specialized ISO containers and stored in the frother storage tank.	4,000 tons
Depressant (Sodium Silicate)	Clay or silica gangue mineral depressant used in the copper-molybdenum separation process.	Pelletized reagent packaged in 1-ton bags and shipped in containers. Mixed with process water to form 20% solution and stored in the sodium silicate storage tank.	3,000 tons
Anionic Polyacrylamide	Thickener aid.	Pelletized reagent packaged in 1-ton bags and shipped in containers. Vendor package preparation system composed of a bag breaking enclosure to contain dust, dry flocculent metering, and a wet jet system to combine treated water with the powdered flocculent in an agitated tank for maturation. Prepared in small batches and transferred to a flocculent storage tank.	Included in miscellaneous supplies.
Polyacrylic Acid	Anti-scalant for the lime production process.	Liquid shipped in 35-cubic-foot specialized container tanks in protected rectangular framework.	Included in miscellaneous supplies.
Nitrogen	Nitrogen used in the molybdenum flotation circuit to depress copper sulfides.	Provided by a vendor-supplied pressure swing adsorption nitrogen plant. This equipment separates nitrogen from air for use in the mineral-process plant.	15,000 tons
Grinding Media	Steel balls for use in grinding mills	Bulk containers	55,000 tons

**Table K2-5: Mine Site Supplies and Quantities**

Material/Supply/ Reagent	Use	Shipping/Preparation	Annual Consumption <sup>1</sup>
Miscellaneous Supplies	Varies	Bulk containers/break bulk	30,000 tons
Hydrochloric Acid (HCl, 35% Liquid Solution)	pH modifier used in water treatment for co-precipitation, metal oxidation and post-neutralization if needed.	Bulk liquid shipped in specialized container tanks. Transferred to on-site storage tanks. Dosed with metering pumps.	17,500 tons
Ferric Chloride (FeCl <sub>3</sub> , Dry Solid or 35% Liquid Solution)	Introduces ferric iron into solution for metals co-precipitation in water treatment.	Dry solid shipped in bulk dry chemical tanks, dissolved in water and dosed with metering pumps. Also available as a 35% liquid solution.	15,000 tons
Ferrous Chloride (FeCl <sub>2</sub> , 30% Liquid Solution)	Acts as reducing agent and provides iron for co-precipitation of metals and metalloids in water treatment.	Bulk liquid shipped in specialized container tanks. Transferred to on-site storage tanks and dosed with metering pumps.	125 tons
Potassium Permanganate (KMnO <sub>4</sub> , Dry Solid)	Oxidation of metals in water treatment.	Dry solid packaged in 1.5-ton supersacks and shipped in containers. Dissolved in water and dosed with metering pumps.	100 tons
Polymer (Dry Solid)	Enhances coagulation and settling of precipitated solids in water treatment	Dry solid packaged in 1.5-ton supersacks and shipped in containers. Dissolved in water and dosed with metering pumps.	100 tons
Sodium Hydrogen Sulfide (NaSH, Dry Solid)	Reducing agent used for precipitation of metal sulfides.	Dry solid packaged in 1.5-ton supersacks and shipped in containers. Dissolved in water and dosed with metering pumps.	300 tons
Antiscalant (Liquid)	Disperses scale forming precipitates in RO systems.	Shipped in totes and dosed with metering pumps.	50 tons
Membrane Clean-In-Place Acid Solution (Liquid)	Acid cleaning solution for ultrafiltration and RO membranes. Typically a proprietary mixture of citric acid and chelating agents.	Small quantities packaged in totes or drums and shipped in containers. Diluted in CIP tanks, and pumped through membranes.	Included in miscellaneous supplies.
Membrane Clean-In-Place Alkaline Solution (Liquid)	Alkaline cleaning solution for ultrafiltration and RO membranes. Typically a proprietary mixture of 50% sodium hydroxide, detergents, and additives.	Small quantities packaged in totes or drums and shipped in containers. Diluted in CIP tanks, and pumped through membranes.	Included in miscellaneous supplies.
Soda Ash (Na <sub>2</sub> CO <sub>3</sub> , Dry Solid)	Adds alkalinity to treated water as needed prior to discharge.	Dry solid packaged in bulk dry chemical tanks or 1.5-ton supersacks and shipped in containers. Dissolved in water and dosed with metering pumps.	450 tons

Notes:

<sup>1</sup> Numbers as presented are approximate and have been averaged and rounded as appropriate for ease of reference.

ISO = International Organization for Standardization

RO = Reverse Osmosis

CIP = Clean-In-Place

Source: PLP 2019-RFI 152

## K2.1.6 Material Sites

Construction materials would be excavated from borrow material sites along the transportation corridor roads. Table K2-6 provides information for material sites under the Alternative 1a, including the estimated quantities, size, type of material, use of material, and whether blasting is required. Figure K2-1 and Figure K2-2 show the location of material sites proposed for the Alternative 1a.

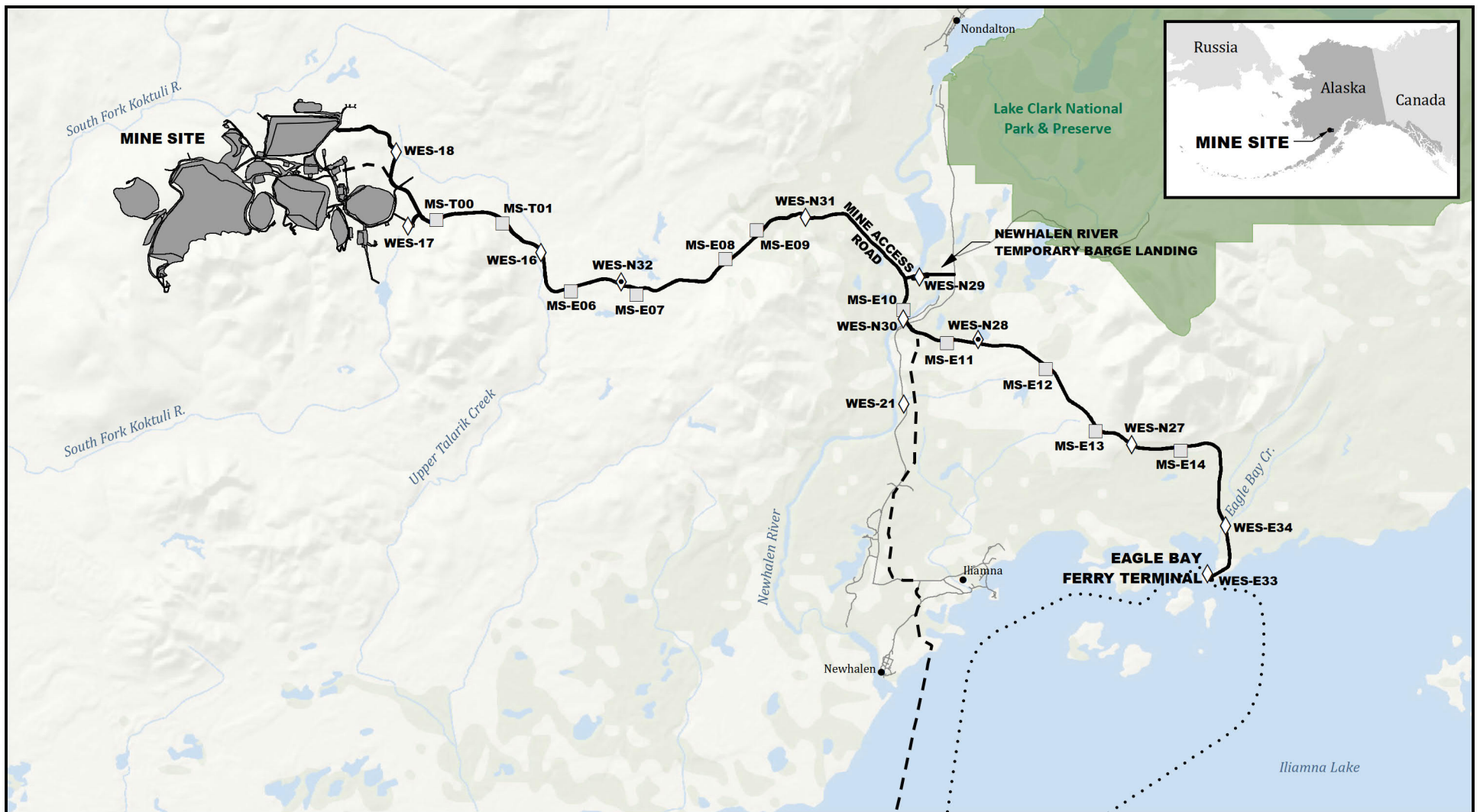
**Table K2-6: Alternative 1a Material Site Quantities Estimates**

Site	Quantity (cubic yards)	Size (acres) <sup>1</sup>	Type	Blasting Required (Yes/No)	Use
<b>Port Access Road</b>					
MS-A01	600,000	9	Rock and gravel	Yes	Road, Pipeline
MS-A02	500,000	10	Rock and gravel	Yes	Road, Pipeline
MS-A03	400,000	20	Rock	Yes	Road, Pipeline
MS-A04	400,000	22	Rock	Yes	Road, Pipeline
MS-A05	700,000	20	Rock	Yes	Road, Pipeline
MS-A06	400,000	19	Rock	Yes	Road, Pipeline
MS-A07	500,000	20	Rock	Yes	Road, Pipeline
MS-A08	400,000	20	Rock	Yes	Road, Pipeline, Port
<b>Mine Access Road</b>					
MS-E06	400,000	28	Sand and gravel	Yes	Road, Pipeline
MS-E07	250,000	45	Gravel	No	Road, Pipeline
MS-E08	250,000	16	Gravel	No	Road, Pipeline
MS-E09	400,000	29	Gravel	No	Road, Pipeline
MS-E10	300,000	8	Gravel	No	Road, Pipeline
MS-E11	300,000	25	Gravel	No	Road, Pipeline
MS-E12	200,000	33	Gravel	No	Road, Pipeline
MS-E13	250,000	16	Gravel	No	Road, Pipeline
MS-E14	400,000	20	Gravel	No	Road, Pipeline
MS-T00	200,000	8	Gravel	No	Road, Pipeline
MS-T01	700,000	12	Rock and gravel	Yes	Road, Pipeline
<b>Alternative 1a Total</b>	<b>7,550,000</b>	<b>380</b>			

Notes:

<sup>1</sup> Represents area of permanent impacts. Numbers are approximate and rounded.

Source: Project GIS database

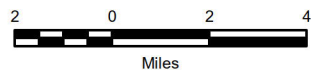


Sources: PLP 2019-RF1153; ADN R

Note: The displayed features are the permanent footprint unless otherwise specified.



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#### Alternative 1a

- ◇ Water Extraction Site
- ◇ Water Extraction Site with Access Road
- Material Site

... Ferry Route

- Natural Gas Pipelines
- Transportation Corridor
- Mine Site

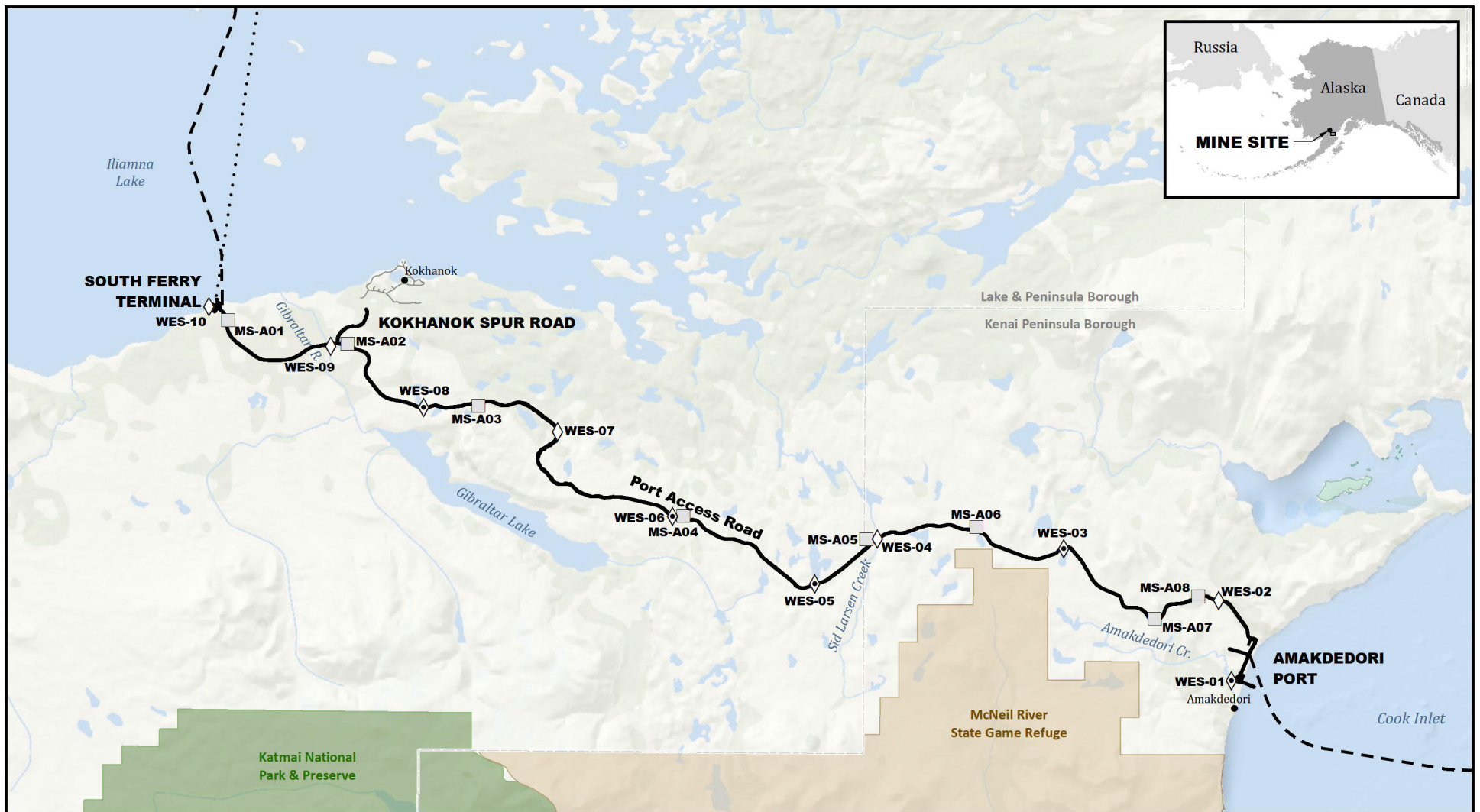
#### Other Features

- Local Roads
- National Park

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### ALTERNATIVE 1A - MATERIAL SITES AND WATER EXTRACTION SITES - MINE ACCESS ROAD

FIGURE K2-1



Sources: PLP 2019-RF1153; ADN

Note: The displayed features are the permanent footprint unless otherwise specified.



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#### Alternative 1a

◇ Water Extraction Site

◇ Water Extraction Site with Access Road

□ Material Site

... Ferry Route

--- Natural Gas Pipelines

— Transportation Corridor

#### Other Features

— Local Roads

— Borough Boundary

■ National Park

■ National Wildlife Refuge

■ State Game Refuge/Sanctuary

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## ALTERNATIVE 1A - MATERIAL SITES AND WATER EXTRACTION SITES - PORT ACCESS ROAD

FIGURE K2-2

## K2.1.7 Water Extraction Sites

Water extraction from sources along the transportation corridor would be necessary to support project construction and operations (Figure K2-1 and Figure K2-2). Table K2-7 provides information for water extraction sites under the Alternative 1a, including the waterbody type, use, years and season of use, and estimated extraction rate and volumes.

**Table K2-7: Alternative 1a Water Extraction Site Quantity Estimates**

Water Extraction Site	All-Season (Yes/No)	Waterbody Type	Use	Years of Use	Extraction	
					Rate (gpm)	Annual Volume (gal)
Port Access Road						
WES-01	Yes	Stream	Construction	Life of mine	1,000	5M
WES-02	Yes	Stream	Construction and testing	3	500	3M
WES-03	Yes	Lake	Construction	Life of mine	500	1M
WES-04	Yes	Stream	Construction	3	500	2M
WES-05	Yes	Lake	Construction	Life of mine	500	1M
WES-06	Yes	Pond	Construction	3	500	1M
WES-07	Yes	Stream	Construction	Life of mine	500	1M
WES-08	Yes	Lake	Construction	3	500	1M
WES-09	Yes	Stream	Construction and testing	3	1,000	1M
WES-10	Yes	Lake	Construction and testing	Life of mine	1,000	8M
Mine Site Access Road						
WES-16	Yes	Stream	Construction and testing	Life of mine	500	1M
WES-17	Yes	Pond	Construction	3	500	1M
WES-18	Yes	Pond	Construction	3	500	1M
WES-E33	Yes	Lake	Road and pipeline construction	Life of mine	1,000	8M
WES-E34	Yes	Stream	Road and pipeline construction	3	500	3M
WES-N27	No	Stream	Road and pipeline construction	3	500	3M
WES-N28	Yes	Lake	Road and pipeline construction	3	500	3M
WES-N29	Yes	River	Road and pipeline construction	3	1,000	8M
WES-N30	Yes	River	Road and pipeline construction	Life of mine	1,000	5M
WES-N31	No	Stream	Road and pipeline construction	3	500	3M
WES-N32	Yes	Pond	Road and pipeline construction	3	500	3M
Natural Gas Pipeline <sup>1</sup>						
WES-21	Yes	Stream	Construction and testing	Life of mine	500	1M
Alternative 1a Total						64M

Notes:

<sup>1</sup> Includes water extraction sites along pipeline-only portions of the natural gas pipeline corridor (i.e., not adjacent to transportation corridor access roads).

gal = gallons

gpm = gallons per minute

M = million

Source: Project GIS database

### K2.1.8 Access Roads to Water Extraction Sites

All-season gravel roads would be necessary to access some of the water extraction sites proposed for the Alternative 1a (Figure K2-1 and Figure K2-2). Table K2-8 provides details on the location and approximate length and acreage of each planned access road.

**Table K2-8: Alternative 1a Water Extraction Site Access Roads**

Name	Nearest Milepost	Length (miles)	Permanent Footprint (acres) <sup>1</sup>	Temporary Construction Footprint (acres)
AWES-01	PAR MP-0	<1	1	<1
AWES-03	PAR MP-8	<1	<1	<1
AWES-05	PAR MP-15	<1	<1	<1
AWES-06	PAR MP-20	<1	--	<1
AWES-08	PAR MP-26	<1	--	<1
AWES-N28	MAR MP-11	<1	--	<1
AWES-N32	MAR MP-24	<1	--	<1
<b>Alternative 1a Total</b>		<b>&lt;1</b>	<b>1</b>	<b>1</b>

Notes:

<sup>1</sup> Represents area of permanent impacts. Numbers are approximate and rounded.

< = less than

-- = not applicable

Source: Project GIS database.

## K2.2 ALTERNATIVE 1

### K2.2.1 Alternative 1 Project Components Footprints

Table K2-9 provides a summary of the Alternative 1 project footprint for each of the four project components (mine site, transportation corridor, port, and natural gas pipeline) described in Chapter 2, Alternatives, of the EIS. Table K2-10 through Table K2-12 summarize the difference in footprints for each of the variants analyzed under Alternative 1. Brackets around a number indicate a change between the variant and the base case for Alternative 1.

**Table K2-9: Alternative 1 Project Footprint**

Project Component	Facility	Permanent Footprint (acres)	Temporary Construction Footprint (acres) <sup>1</sup>	Length (miles)
Mine Site	Open Pit	609	--	--
	Sediment/Seepage Collection Systems	360	--	--
	Bulk Tailings Storage Facility	2,797	--	--
	Pyritic Tailings Storage Facility	1,000	--	--
	Stockpiles	527	--	--
	Quarries <sup>2</sup>	860	--	--
	On-site Access Roads	860	--	39
	Mineral Processing Facilities	113	--	--
	Mill Site Power Plant	22	--	--
	Mine Site Infrastructure	139	--	--
	Water Management Ponds	1,066	--	--
	Waste Management Facilities	17	--	--
	Water Treatment Plants	19	<1	--
	<b>Mine Site Total</b>	<b>8,390</b>	<b>&lt;1</b>	<b>39</b>

**Table K2-9: Alternative 1 Project Footprint**

Project Component	Facility	Permanent Footprint (acres)	Temporary Construction Footprint (acres) <sup>1</sup>	Length (miles)
Transportation Corridor	Iliamna Spur Road	119	72	9
	Explosive Storage Spur Road	4	2	<1
	Mine Access Road	341	224	28
	Kokhanok Spur Road	15	10	1
	Pedro Bay Airport Spur Road	--	--	--
	Port Access Road	411	288	37
	North Access Road	--	--	--
	Water Extraction Pads and Access Roads	2	4	1
	Material Sites	251	--	--
	North Ferry Terminal	4	2	--
	South Ferry Terminal	23	5	--
	Kokhanok East Ferry Terminal	--	--	--
	Eagle Bay Ferry Terminal	--	--	--
	Pile Bay Ferry Terminal	--	--	--
	<b>Transportation Corridor Total</b>	<b>1,171</b>	<b>607</b>	<b>77</b>
Port	Amakdedori Port	26	6	--
	Amakdedori Port Airstrip	6	4	--
	Diamond Point Port	--	--	--
	Diamond Point Port Dredging Area	--	--	--
	Water Extraction Pads and Access Roads	1	<1	<1
	Lightering Location—Mooring Buoys and Anchors	<1	--	--
	<b>Port Total</b>	<b>33</b>	<b>10</b>	<b>&lt;1</b>
Natural Gas Pipeline	Compressor Station Pad <sup>3</sup>	2	--	<1
	HDD Pullback Work Area	--	<1	--
	Onshore Pipeline-Only Pipeline Corridor Segments	--	61	5
	Material Sites	--	--	--
	Pipeline Construction Access Roads	--	--	--
	Cook Inlet Segment	--	628	104
	Cottonwood Bay Segment	--	--	--
	Iliamna Lake Segment	4	120	19
	<b>Natural Gas Pipeline Total</b>	<b>7</b>	<b>809</b>	<b>187<sup>4</sup></b>
	<b>Alternative 1 Total</b>	<b>9,600</b>	<b>1,426</b>	<b>--</b>

**Notes:**

Footprints are based on project GIS database. Numbers are rounded to the nearest whole number; therefore, the sum of individual facilities may not match the totals listed for the overall component.

<sup>1</sup> The temporary construction footprint for the transportation corridor and port components includes a 30-foot buffer around the permanent footprint where temporary construction-related activities would occur; except for water extraction site access roads, which include a 5-foot buffer. The temporary construction footprint for the onshore pipeline-only segments (i.e., not adjacent to an access road) of the natural gas pipeline component includes a 150-foot-wide impact corridor to account for pipeline trenching, side-casting, and equipment operation/travel. The temporary construction footprint for offshore segments of the natural gas pipeline (i.e., Iliamna Lake and Cook Inlet) varies (up to 102-foot maximum), as outlined in PLP 2019c.

<sup>2</sup> Includes Quarry B and Quarry C; Quarry A is in the footprint of the bulk TSF.

<sup>3</sup> Includes the tie-in to the compressor station.

<sup>4</sup> Total length of pipeline. Includes lengths for segments that are co-located with the transportation corridor access road(s) that are not listed under the natural gas pipeline section of the table.

< = less than

-- = not applicable

HDD = horizontal directional drilling

**Table K2-10: Alternative 1—Summer Only Ferry Operations Variant Project Footprint**

Project Component	Facility	Permanent Footprint (acres)	Temporary Construction Footprint (acres) <sup>1</sup>	Length (miles)
Mine Site	Open Pit	609	--	--
	Sediment/Seepage Collection Systems	360	--	--
	Bulk Tailings Storage Facility	2,797	--	--
	Pyritic Tailings Storage Facility	1,000	--	--
	Stockpiles	527	--	--
	Quarries <sup>2</sup>	860	--	--
	On-site Access Roads	[861]	--	39
	Mineral Processing Facilities	[146]	--	--
	Mill Site Power Plant	22	--	--
	Mine Site Infrastructure	139	--	--
	Water Management Ponds	1,066	--	--
	Waste Management Facilities	17	--	--
	Water Treatment Plants	19	<1	--
<b>Mine Site Total</b>		<b>[8,423]</b>	<b>&lt;1</b>	<b>39</b>
Transportation Corridor	Iliamna Spur Road	No change from Alternative 1 Transportation Corridor		
	Explosive Storage Spur Road			
	Mine Access Road			
	Kokhanok Spur Road			
	Pedro Bay Airport Spur Road			
	Port Access Road			
	North Access Road			
	Water Extraction Pads and Access Roads			
	Material Sites			
	North Ferry Terminal			
	South Ferry Terminal			
	Kokhanok East Ferry Terminal			
	Eagle Bay Ferry Terminal			
	Pile Bay Ferry Terminal			
<b>Transportation Corridor Total</b>		<b>1,171</b>	<b>607</b>	<b>77</b>
Port	Amakdedori Port	[54]	[7]	--
	Amakdedori Port Airstrip	6	4	--
	Diamond Point Port	--	--	--
	Diamond Point Port Dredging Area	--	--	--
	Water Extraction Pads and Access Roads	[<1]	<1	<1
	Lightering Location—Mooring Buoys and Anchors	<1	--	--
	<b>Port Total</b>	<b>[60]</b>	<b>[11]</b>	<b>&lt;1</b>
Natural Gas Pipeline	Compressor Station Pad <sup>3</sup>	No change from Alternative 1 Natural Gas Pipeline Corridor		
	HDD Pull Back Work Area			
	Onshore Pipeline-Only Pipeline Corridor Segments			
	Material Sites			
	Pipeline Construction Access Roads			
	Cook Inlet Segment			
	Cottonwood Bay Segment			
	Iliamna Lake Segment			
<b>Natural Gas Pipeline Total</b>		<b>7</b>	<b>809</b>	<b>187<sup>4</sup></b>
<b>Alternative 1—Summer Only Operations Variant Total</b>		<b>[9,661]</b>	<b>[1,427]</b>	<b>--</b>

**Notes:**

Footprints are based on project GIS database. Numbers are rounded to the nearest whole number; therefore, the sum of individual facilities may not match the totals listed for the overall component.

<sup>1</sup> The temporary construction footprint for the transportation corridor and port components includes a 30-foot buffer around the permanent footprint where temporary construction-related activities would occur; except for water extraction site access roads, which include a 5-foot buffer. The temporary construction footprint for the onshore pipeline-only segments (i.e., not adjacent to an access road) of the natural gas pipeline component includes a 150-foot-wide impact corridor to account for pipeline trenching, side-casting, and equipment operation/travel. The temporary construction footprint for offshore segments of the natural gas pipeline (i.e., Iliamna Lake and Cook Inlet) varies (up to 102-foot maximum), as outlined in PLP 2019c.

<sup>2</sup> Includes Quarry B and Quarry C; Quarry A is in the footprint of the bulk TSF.

<sup>3</sup> Includes the tie-in to the compressor station.

<sup>4</sup> Total length of pipeline. Includes lengths for segments that are co-located with the transportation corridor access road(s) that are not listed under the natural gas pipeline section of the table.

< = less than -- = not applicable HDD = horizontal directional drilling

**Table K2-11: Alternative 1—Kokhanok East Ferry Terminal Variant Project Footprint**

Project Component	Facility	Permanent Footprint (acres)	Temporary Construction Footprint (acres) <sup>1</sup>	Length (miles)
Mine Site	Open Pit	No change from Alternative 1 Mine Site		
	Sediment/Seepage Collection Systems			
	Bulk Tailings Storage Facility			
	Pyritic Tailings Storage Facility			
	Stockpiles			
	Quarries <sup>2</sup>			
	On-site Access Roads			
	Mineral Processing Facilities			
	Mill Site Power Plant			
	Mine Site Infrastructure			
	Water Management Ponds			
	Waste Management Facilities			
	Water Treatment Plants			
	<b>Mine Site Total</b>	<b>8,390</b>	<b>&lt;1</b>	<b>39</b>
Transportation Corridor	Iliamna Spur Road	119	72	9
	Explosive Storage Spur Road	4	2	<1
	Mine Access Road	341	224	28
	Kokhanok Spur Road	[65]	[42]	[5]
	Pedro Bay Airport Spur Road	--	--	--
	Port Access Road	[297]	[212]	[27]
	North Access Road	--	--	--
	Water Extraction Pads and Access Roads	2	[3]	1
	Material Sites	[358]	--	--
	North Ferry Terminal	4	2	--
	South Ferry Terminal	--	--	--
	Kokhanok East Ferry Terminal	[15]	[3]	--
	Eagle Bay Ferry Terminal	[--]	[--]	--
	Pile Bay Ferry Terminal	--	--	--
	<b>Transportation Corridor Total</b>	<b>[1,205]</b>	<b>[560]</b>	<b>[70]</b>
Port	Amakdedori Port	No change from Alternative 1 Amakdedori Port		
	Amakdedori Port Airstrip			
	Diamond Point Port			
	Diamond Point Port Dredging Area			
	Water Extraction Pads and Access Roads			
	Lightering Location—Mooring Buoys and Anchors			
	<b>Port Total</b>	<b>33</b>	<b>10</b>	<b>&lt;1</b>
Natural Gas Pipeline	Compressor Station Pad <sup>3</sup>	2	--	<1
	HDD Pullback Work Area	--	<1	--
	Onshore Pipeline-Only Pipeline Corridor Segments	--	[85]	7
	Material Sites	--	--	--
	Pipeline Construction Access Roads	--	--	--
	Cook Inlet Segment	--	628	104
	Cottonwood Bay Segment	--	--	--
	Iliamna Lake Segment	4	[131]	[20]
	<b>Natural Gas Pipeline Total</b>	<b>7</b>	<b>[845]</b>	<b>[185]<sup>4</sup></b>
<b>Alternative 1—Kokhanok East Ferry Terminal Variant Total</b>		<b>[9,635]</b>	<b>[1,415]</b>	<b>--</b>

Notes: Footprints are based on project GIS database. Numbers are rounded to the nearest whole number; therefore, the sum of individual facilities may not match the totals listed for the overall component.

<sup>1</sup> The temporary construction footprint for the transportation corridor and port components includes a 30-foot buffer around the permanent footprint where temporary construction-related activities would occur; except for water extraction site access roads, which include a 5-foot buffer. The temporary construction footprint for the onshore pipeline-only segments (i.e., not adjacent to an access road) of the natural gas pipeline component includes a 150-foot-wide impact corridor to account for pipeline trenching, side-casting, and equipment operation/travel. The temporary construction footprint for offshore segments of the natural gas pipeline (i.e., Iliamna Lake and Cook Inlet) varies (up to 102-foot maximum), as outlined in PLP 2019c.

<sup>2</sup> Includes Quarry B and Quarry C; Quarry A is in the footprint of the TSF.

<sup>3</sup> Includes the tie-in to the compressor station.

<sup>4</sup> Total length of pipeline. Includes lengths for segments that are co-located with the transportation corridor access road(s) that are not listed under the natural gas pipeline section of the table.

< = less than -- = not applicable GIS = Geographic Information System HDD = horizontal directional drilling  
PLP = Pebble Limited Partnership TSF = tailings storage facility

**Table K2-12: Alternative 1—Amakdedori Port Pile-Supported Dock Variant Project Footprint**

Project Component	Facility	Permanent Footprint (acres)	Temporary Construction Footprint (acres) <sup>1</sup>	Length (miles)
Mine Site	Open Pit	No change from Alternative 1 Mine Site		
	Sediment/Seepage Collection Systems			
	Bulk Tailings Storage Facility			
	Pyritic Tailings Storage Facility			
	Stockpiles			
	Quarries <sup>2</sup>			
	Onsite Access Roads			
	Mineral Processing Facilities			
	Mill Site Power Plant			
	Mine Site Infrastructure			
	Water Management Ponds			
	Waste Management Facilities			
	Water Treatment Plants			
	<b>Mine Site Total</b>	<b>8,390</b>	<b>&lt;1</b>	<b>39</b>
Transportation Corridor	Iliamna Spur Road	No change from Alternative 1 Transportation Corridor		
	Explosive Storage Spur Road			
	Mine Access Road			
	Kokhanok Spur Road			
	Pedro Bay Airport Spur Road			
	Port Access Road			
	North Access Road			
	Water Extraction Pads and Access Roads			
	Material Sites			
	North Ferry Terminal			
	South Ferry Terminal			
	Kokhanok East Ferry Terminal			
	Eagle Bay Ferry Terminal			
	Pile Bay Ferry Terminal			
	<b>Transportation Corridor Total</b>	<b>1,171</b>	<b>607</b>	<b>77</b>
Port	Amakdedori Port	[15]	[9]	--
	Amakdedori Port Airstrip	6	4	--
	Diamond Point Port	--	--	--
	Diamond Point Port Dredging Area	--	--	--
	Water Extraction Pads and Access Roads	1	<1	<1
	Lightering Location—Mooring Buoys and Anchors	<1	--	--
	<b>Port Total</b>	<b>[22]</b>	<b>[13]</b>	<b>&lt;1</b>
Natural Gas Pipeline	Compressor Station Pad <sup>3</sup>	No change from Alternative 1 Natural Gas Pipeline Corridor		
	HDD Pullback Work Area			
	Onshore Pipeline-Only Pipeline Corridor Segments			
	Material Sites			
	Pipeline Construction Access Roads			
	Cook Inlet Segment			
	Cottonwood Bay Segment			
	Iliamna Lake Segment			
	<b>Natural Gas Pipeline Total</b>	<b>7</b>	<b>809</b>	<b>187<sup>4</sup></b>
<b>Alternative 1—Amakdedori Port Pile-Supported Dock Variant Total</b>		<b>[9,589]</b>	<b>[1,429]</b>	<b>--</b>

Notes:

Footprints are based on project GIS database. Numbers are rounded to the nearest whole number; therefore, the sum of individual facilities may not match the totals listed for the overall component.

<sup>1</sup> The temporary construction footprint for the transportation corridor and port components includes a 30-foot buffer around the permanent footprint where temporary construction-related activities would occur; except for water extraction site access roads, which include a 5-foot buffer. The temporary construction footprint for the onshore pipeline-only segments (i.e., not adjacent to an access road) of the natural gas pipeline component includes a 150-foot-wide impact corridor to account for pipeline trenching, side-casting, and equipment operation/travel. The temporary construction footprint for offshore segments of the natural gas pipeline (i.e., Iliamna Lake and Cook Inlet) varies (up to 102-foot maximum), as outlined in PLP 2019c.

<sup>2</sup> Includes Quarry B and Quarry C; Quarry A is in the footprint of the bulk TSF.

<sup>3</sup> Includes the tie-in to the compressor station.

<sup>4</sup> Total length of pipeline. Includes lengths for segments that are co-located with the transportation corridor access road(s) that are not listed under the natural gas pipeline section of the table.

< = less than    -- = not applicable    GIS = Geographic Information System    HDD = horizontal directional drilling  
PLP = Pebble Limited Partnership    TSF = tailings storage facility

## K2.2.2 Material Sites

Construction materials would be excavated from borrow material sites along the transportation corridor roads. Table K2-13 provides information for Alternative 1 material sites, including the estimated quantities, size, type of material, use of material, and whether blasting is required. Table K2-14 provides information for the Alternative 1 Kokhanok East Ferry Terminal Variant material sites. Figure K2-3 and Figure K2-4 show the location of material sites proposed for Alternative 1, including the Kokhanok East Ferry Terminal Variant.

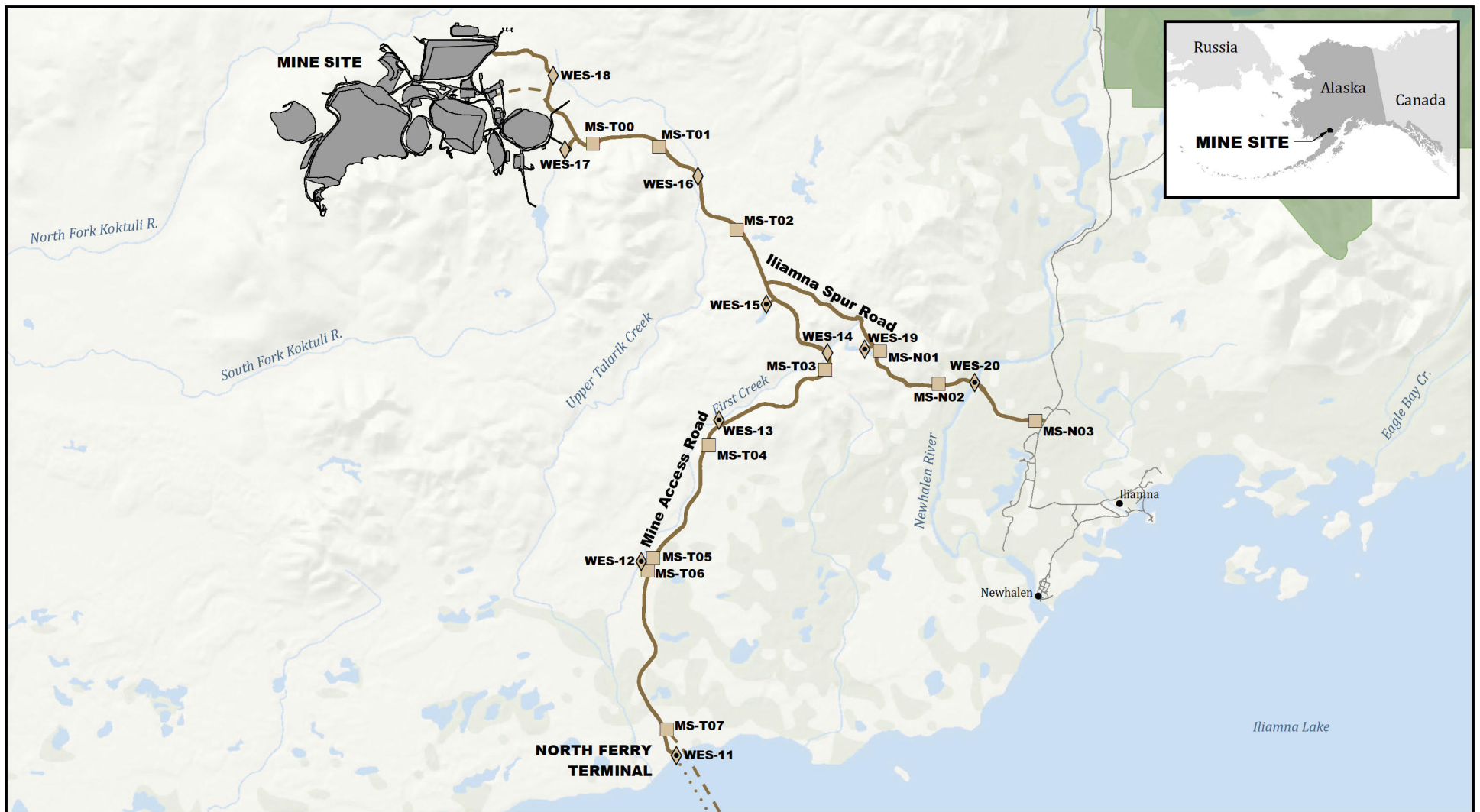
**Table K2-13: Alternative 1 Material Site Quantities Estimates**

Site	Quantity (cubic yards)	Size (acres) <sup>1</sup>	Type	Blasting Required (Yes/No)	Use
<b>Port Access Road</b>					
MS-A01	600,000	9	Rock and gravel	Yes	Road, Pipeline
MS-A02	500,000	10	Rock and gravel	Yes	Road, Pipeline
MS-A03	400,000	20	Rock	Yes	Road, Pipeline
MS-A04	400,000	22	Rock	Yes	Road, Pipeline
MS-A05	700,000	20	Rock	Yes	Road, Pipeline
MS-A06	400,000	19	Rock	Yes	Road, Pipeline
MS-A07	500,000	20	Rock	Yes	Road, Pipeline
MS-A08	400,000	20	Rock	Yes	Road, Pipeline, Port
<b>Mine Access Road</b>					
MS-T00	200,000	8	Gravel	No	Road, Pipeline
MS-T01	700,000	12	Rock and gravel	Yes	Road, Pipeline
MS-T02	200,000	13	Gravel	No	Road, Pipeline
MS-T03	200,000	8	Gravel	No	Road, Pipeline
MS-T04	300,000	9	Gravel	No	Road, Pipeline
MS-T05	100,000	9	Rock and gravel	Yes	Road, Pipeline
MS-T06	500,000	9	Gravel	No	Road, Pipeline
MS-T07	700,000	14	Gravel	No	Road, Pipeline
<b>Iliamna Spur Road</b>					
MS-N01	200,000	10	Gravel	No	Road, Pipeline
MS-N02	300,000	9	Gravel	No	Road, Pipeline
MS-N03	200,000	9	Gravel	No	Road, Pipeline
<b>Alternative 1 Total</b>	<b>7,500,000</b>	<b>251</b>			

Notes:

<sup>1</sup> Represents area of permanent impacts. Numbers are approximate and rounded

Source: Project GIS database

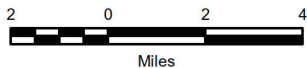


Sources: PLP 2019-RF1153; ADNDR

Note: The displayed features are the permanent footprint unless otherwise specified.



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#### Alternative 1

- ◆ Water Extraction Site
- ◆ Water Extraction Site with Access Road
- Material Sites
- ... Ferry Route
- Natural Gas Pipeline
- Transportation Corridor

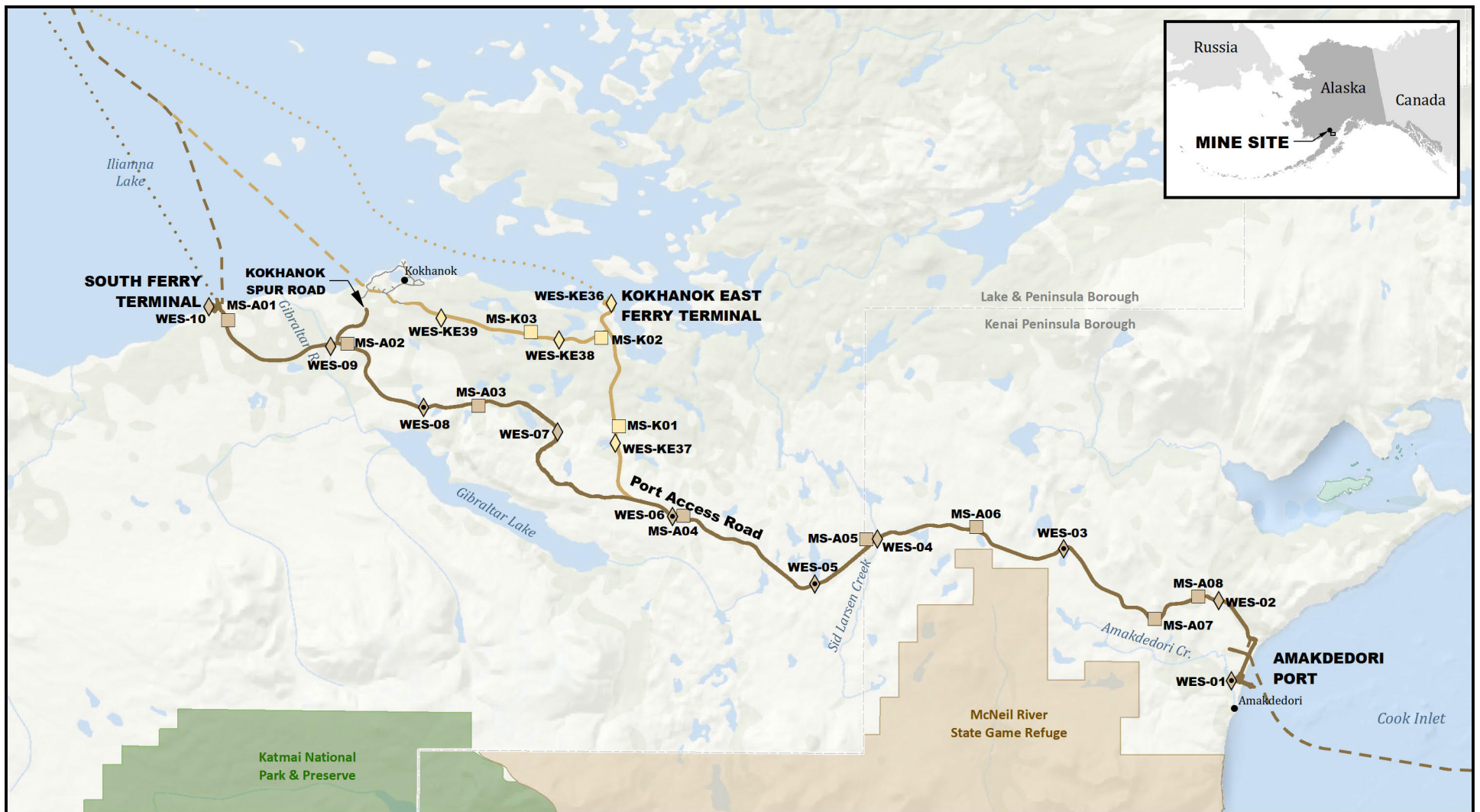
#### Alternative 1a

- Mine Site
- Local Roads
- National Park

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### ALTERNATIVE 1 - MATERIAL SITES AND WATER EXTRACTION SITES - MINE ACCESS ROAD

FIGURE K2-3

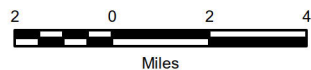


Sources: PLP 2019-RF1153; ADN

Note: The displayed features are the permanent footprint unless otherwise specified.



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#### Alternative 1

- ◆ Water Extraction Site
- ◆ Water Extraction Site with Access Road
- Material Sites
- ... Ferry Route
- Natural Gas Pipeline
- Transportation Corridor

#### Kokhanok East Ferry Terminal Variant

- ◆ Water Extraction Site
- Material Sites
- ... Ferry Route
- Natural Gas Pipeline
- Transportation Corridor

#### Other Features

- Local Roads
- Borough Boundary
- National Park
- National Wildlife Refuge
- State Game Refuge/Sanctuary

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**ALTERNATIVE 1 - MATERIAL SITES AND  
WATER EXTRACTION SITES - PORT ACCESS ROAD**

FIGURE K2-4

**Table K2-14: Alternative 1—Kokhanok East Ferry Terminal Variant Material Site Quantities Estimates**

Site	Quantity (cubic yards)	Size (acres) <sup>1</sup>	Type	Blasting Required (Yes/No)	Use
<b>Port Access Road</b>					
MS-A04	400,000	22	Rock	Yes	Road, Pipeline
MS-A05	700,000	20	Rock	Yes	Road, Pipeline
MS-A06	400,000	19	Rock	Yes	Road, Pipeline
MS-A07	500,000	20	Rock	Yes	Road, Pipeline
MS-A08	400,000	22	Rock	Yes	Road, Pipeline, Port
<b>Kokhanok East Spur Road</b>					
MS-K01	800,000	68	Rock	Yes	Road, Pipeline
MS-K02	300,000	26	Rock	Yes	Road, Pipeline
MS-K03	500,000	52	Rock	Yes	Road, Pipeline
<b>Mine Access Road</b>					
MS-T00	200,000	8	Gravel	No	Road, Pipeline
MS-T01	700,000	12	Rock and gravel	Yes	Road, Pipeline
MS-T02	200,000	13	Gravel	No	Road, Pipeline
MS-T03	200,000	8	Gravel	No	Road, Pipeline
MS-T04	300,000	9	Gravel	No	Road, Pipeline
MS-T05	100,000	9	Rock and gravel	Yes	Road, Pipeline
MS-T06	500,000	9	Gravel	No	Road, Pipeline
MS-T07	700,000	14	Gravel	No	Road, Pipeline
<b>Iliamna Spur Road</b>					
MS-N01	200,000	10	Gravel	No	Road, Pipeline
MS-N02	300,000	9	Gravel	No	Road, Pipeline
MS-N03	200,000	9	Gravel	No	Road, Pipeline
<b>Alternative 1— Kokhanok East Ferry Terminal Variant Total</b>	<b>7,600,000</b>	<b>358</b>			

Notes:

<sup>1</sup> Represents area of permanent impacts. Numbers are approximate and rounded

Source: Project GIS database

### K2.2.3 Water Extraction Sites

Water extraction from sources along the transportation corridor would be necessary to support project construction and operations (Figure K2-3 and Figure K2-4). Table K2-15 provides information for Alternative 1 water extraction sites, including the waterbody type, use, years and season of use, and estimated extraction rate and volumes. Table K2-16 provides information for Alternative 1 Kokhanok East Ferry Terminal Variant water extraction sites.

**Table K2-15: Alternative 1 Water Extraction Site Quantity Estimates**

Water Extraction Site	All-Season (Yes/No)	Waterbody Type	Use	Years of Use	Extraction	
					Rate (gpm)	Annual Volume (gal)
Port Access Road						
WES-01	Yes	Stream	Construction	Life of mine	1,000	5M
WES-02	Yes	Stream	Construction and testing	3	500	3M
WES-03	Yes	Lake	Construction	Life of mine	500	1M
WES-04	Yes	Stream	Construction	3	500	2M
WES-05	Yes	Lake	Construction	Life of mine	500	1M
WES-06	Yes	Pond	Construction	3	500	1M
WES-07	Yes	Stream	Construction	Life of mine	500	1M
WES-08	Yes	Lake	Construction	3	500	1M
WES-09	Yes	Stream	Construction and testing	3	1,000	1M
WES-10	Yes	Lake	Construction and testing	Life of mine	1,000	8M
Mine Site Access Road						
WES-11	Yes	Lake	Construction	Life of mine	1,000	8M
WES-12	Yes	Stream	Construction	3	500	1M
WES-13	Yes	Stream	Construction	Life of mine	500	1M
WES-14	Yes	Stream	Construction	3	500	1M
WES-15	Yes	Lake	Construction	3	1,000	5M
WES-16	Yes	Stream	Construction and testing	Life of mine	500	1M
WES-17	Yes	Pond	Construction	3	500	1M
WES-18	Yes	Pond	Construction	3	500	1M
Iliamna Spur Road						
WES-19	Yes	Lake	Construction	Life of mine	500	1M
WES-20	Yes	Stream	Construction	3	1,000	5M
Alternative 1 Total						49M

Notes:  
gal = gallons  
gpm = gallons per minute  
Source: Project GIS database

**Table K2-16: Alternative 1 Kokhanok East Ferry Terminal Variant Water Extraction Site Quantity Estimates**

Water Extraction Site	All-Season (Yes/No)	Waterbody Type	Use	Years of Use	Extraction	
					Rate (gpm)	Annual Volume (gal)
Port Access Road						
WES-01	Yes	Stream	Construction	Life of mine	1,000	5M
WES-02	Yes	Stream	Construction and testing	3	500	3M
WES-03	Yes	Lake	Construction	Life of mine	500	1M
WES-04	Yes	Stream	Construction	3	500	2M
WES-05	Yes	Lake	Construction	Life of mine	500	1M
WES-06	Yes	Pond	Construction	3	500	1M
WES-KE36	Yes	Lake	Road and pipeline construction	Life of mine	1,000	8M
WES-KE37	Yes	Lake	Road and pipeline construction	3	500	3M
Kokhanok East Spur Road						
WES-KE38	Yes	Stream	Road and pipeline construction	3	500	3M
WES-KE39	Yes	Lake	Road and pipeline construction	3	500	3M
Mine Site Access Road						
WES-11	Yes	Lake	Construction	Life of mine	1,000	8M
WES-12	Yes	Stream	Construction	3	500	1M
WES-13	Yes	Stream	Construction	Life of mine	500	1M
WES-14	Yes	Stream	Construction	3	500	1M
WES-15	Yes	Lake	Construction	3	1,000	5M
WES-16	Yes	Stream	Construction and testing	Life of mine	500	1M
WES-17	Yes	Pond	Construction	3	500	1M
WES-18	Yes	Pond	Construction	3	500	1M
Iliamna Spur Road						
WES-19	Yes	Lake	Construction	Life of mine	500	1M
WES-20	Yes	Stream	Construction	3	1,000	5M
Alternative 1—Kokhanok East Ferry Terminal Variant Total						55M

Notes:  
gal = gallons  
gpm = gallons per minute  
M = million  
Source: Project GIS database

## K2.2.4 Access Roads to Water Extraction Sites

All-season gravel roads would be necessary to access some of the water extraction sites proposed for Alternative 1 (Figure K2-3 and Figure K2-4). Table K2-17 provides details on the location, approximate length, and acreage of each planned access road. These apply to the Alternative 1 base case and the Alternative 1—Kokhanok East Ferry Terminal Variant.

**Table K2-17: Alternative 1 Water Extraction Site Access Roads**

Name	Nearest Mile Post	Length (miles)	Permanent Footprint (acres) <sup>1</sup>	Temporary Construction Footprint (acres)
AWES-01	PAR MP-0	<1	1	<1
AWES-03	PAR MP-8	<1	<1	<1
AWES-05	PAR MP-15	<1	<1	<1
AWES-06	PAR MP-20	<1	--	<1
AWES-08	PAR MP-26	<1	--	<1
AWES-11	MAR MP-01	<1	<1	<1
AWES-12	MAR MP-5	<1	--	2
AWES-13	MAR MP-10	<1	<1	<1
AWES-15	MAR MP-16	<1	--	1
AWES-19	ISAR MP-4	<1	1	<1
AWES-20	ISAR MP-20	<1	<1	<1
<b>Alternative 1 Total</b>		<b>1</b>	<b>3</b>	<b>4</b>

Notes:

<sup>1</sup> Represents area of permanent impacts. Numbers are approximate and rounded

< = less than

-- = not applicable

Source: Project GIS database

## K2.3 ALTERNATIVE 2—NORTH ROAD AND FERRY WITH DOWNSTREAM DAMS

### K2.3.1 Alternative 2 Project Components Footprints

Table K2-18 provides a summary of the Alternative 2—North Road and Ferry with Downstream Dams project footprint for each of the four project components (mine site, transportation corridor, port, and natural gas pipeline) described in Chapter 2, Alternatives, of the EIS. Table K2-19 through Table K2-21 summarize the difference in footprints for each of the variants analyzed under Alternative 2. Brackets around a number indicate a change between the variant and the base case Alternative 2.

**Table K2-18: Alternative 2 Project Footprint**

Project Component	Facility	Permanent Footprint (acres)	Temporary Construction Footprint (acres) <sup>1</sup>	Length (miles)
Mine Site	Open Pit	609	--	--
	Sediment/Seepage Collection Systems	361	--	--
	Bulk Tailings Storage Facility	2,907	--	--
	Pyritic Tailings Storage Facility	1,000	--	--
	Stockpiles	527	--	--
	Quarries <sup>2</sup>	860	--	--
	Onsite Access Roads	856	--	39
	Mineral Processing Facilities	113	--	--
	Mill Site Power Plant	22	--	--
	Mine Site Infrastructure	139	--	--
	Water Management Ponds	1,066	--	--
	Waste Management Facilities	17	--	--
	Water Treatment Plants	19	<1	--
	<b>Mine Site Total</b>	<b>8,497</b>	<b>&lt;1</b>	<b>39</b>
Transportation Corridor	Iliamna Spur Road	--	--	--
	Explosive Storage Spur Road	4	2	<1
	Mine Access Road	353	291	35
	Kokhanok Spur Road	--	--	--
	Pedro Bay Airport Spur Road	--	--	--
	Port Access Road	209	138	18
	North Access Road	--	--	--
	Water Extraction Pads and Access Roads	<1	<1	<1
	Material Sites	321	--	--
	North Ferry Terminal	--	--	--
	South Ferry Terminal	--	--	--
	Kokhanok East Ferry Terminal	--	--	--
	Eagle Bay Ferry Terminal	7	2	--
	Pile Bay Ferry Terminal	18	3	--
	<b>Transportation Corridor Total</b>	<b>912</b>	<b>437</b>	<b>54</b>
Port	Amakdedori Port	--	--	--
	Amakdedori Port Airstrip	--	--	--
	Diamond Point Port <sup>3</sup>	55	23	--
	Diamond Point Port Dredging Area	--	58	--
	Water Extraction Pads and Access Roads	--	--	--
	Lightering Location – Mooring Buoys and Anchors	<1	--	--
	<b>Port Total</b>	<b>55</b>	<b>80</b>	<b>--</b>
Natural Gas Pipeline	Compressor Station Pad <sup>4</sup>	2	--	<1
	HDD Pullback Work Area	--	<1	--
	Onshore Pipeline-Only Pipeline Corridor Segments	--	777	44
	Material Sites	298	--	--
	Pipeline Construction Access Roads	--	29	--
	Cook Inlet Segment	--	618	75
	Cottonwood Bay Segment	--	27	3
	Iliamna Lake Segment	--	--	--
	<b>Natural Gas Pipeline Total</b>	<b>300</b>	<b>1,451</b>	<b>164<sup>5</sup></b>
<b>Alternative 2 Total</b>		<b>9,763</b>	<b>1,968</b>	<b>--</b>

**Notes:**

Footprints are based on project GIS database. Numbers are rounded to the nearest whole number; therefore, the sum of individual facilities may not match the totals listed for the overall component.

<sup>1</sup> The temporary construction footprint for the transportation corridor and port components includes a 30-foot buffer around the permanent footprint where temporary construction-related activities would occur; except for water extraction site access roads, which includes a 5-foot buffer. The temporary construction footprint for the onshore pipeline-only segments (i.e., not adjacent to an access road) of the natural gas pipeline component includes a 150-foot-wide impact corridor to account for pipeline trenching, side-casting, and equipment operation/travel. The temporary construction footprint for offshore segments of the natural gas pipeline (i.e., Iliamna Lake and Cook Inlet) varies (up to 183-foot maximum).

<sup>2</sup> Includes Quarry B and Quarry C; Quarry A is in the footprint of the bulk TSF.

<sup>3</sup> Includes the onshore dredge material storage areas adjacent to the port facility.

<sup>4</sup> Includes the tie-in to the compressor station.

<sup>5</sup> Total length of pipeline. Includes lengths for segments that are co-located with the transportation corridor access road(s) that are not listed under the natural gas pipeline section of the table.

< = less than      -- = not applicable      GIS = Geographic Information System      HDD = horizontal directional drilling  
PLP = Pebble Limited Partnership      TSF = tailings storage facility

**Table K2-19: Alternative 2—Newhalen River North Crossing Variant Project Footprint**

Project Component	Facility	Permanent Footprint (acres)	Temporary Construction Footprint (acres) <sup>1</sup>	Length (miles)
Mine Site	Open Pit	No change from Alternative 2 Mine Site		
	Sediment/Seepage Collection Systems			
	Bulk Tailings Storage Facility			
	Pyritic Tailings Storage Facility			
	Stockpiles			
	Quarries <sup>2</sup>			
	Onsite Access Roads			
	Mineral Processing Facilities			
	Mill Site Power Plant			
	Mine Site Infrastructure			
	Water Management Ponds			
	Waste Management Facilities			
	Water Treatment Plants			
	<b>Mine Site Total</b>	<b>8,497</b>	<b>--</b>	<b>39</b>
Transportation Corridor	Iliamna Spur Road	--	--	--
	Explosive Storage Spur Road	4	2	<1
	Mine Access Road	[356]	290	35
	Kokhanok Spur Road	--	--	--
	Pedro Bay Airport Spur Road	--	--	--
	Port Access Road	209	138	18
	North Access Road	--	--	--
	Water Extraction Pads and Access Roads	<1	<1	<1
	Material Sites	[338]	--	--
	North Ferry Terminal	--	--	--
	South Ferry Terminal	--	--	--
	Kokhanok East Ferry Terminal	--	--	--
	Eagle Bay Ferry Terminal	7	2	--
	Pile Bay Ferry Terminal	18	3	--
	<b>Transportation Corridor Total</b>	<b>[932]</b>	<b>437</b>	<b>54</b>
Port	Amakdedori Port	No change from Alternative 2 Diamond Point Port		
	Amakdedori Port Airstrip			
	Diamond Point Port <sup>3</sup>			
	Diamond Point Port Dredging Area			
	Water Extraction Pads and Access Roads			
	Lightering Location – Mooring Buoys and Anchors			
	<b>Port Total</b>	<b>55</b>	<b>80</b>	<b>--</b>
Natural Gas Pipeline	Compressor Station Pad <sup>4</sup>	No change from Alternative 2 Natural Gas Pipeline Corridor		
	HDD Pullback Work Area			
	Onshore Pipeline-Only Pipeline Corridor Segments			
	Material Sites			
	Pipeline Construction Access Roads			
	Cook Inlet Segment			
	Cottonwood Bay Segment			
	Iliamna Lake Segment			
	<b>Natural Gas Pipeline Total</b>	<b>300</b>	<b>1,451</b>	<b>164<sup>5</sup></b>
	<b>Alternative 2—Newhalen River North Crossing Variant Total</b>	<b>[9,783]</b>	<b>1,968</b>	<b>--</b>

Notes:

Footprints are based on project GIS database. Numbers are rounded to the nearest whole number; therefore, the sum of individual facilities may not match the totals listed for the overall component.

<sup>1</sup> The temporary construction footprint for the transportation corridor and port components includes a 30-foot buffer around the permanent footprint where temporary construction-related activities would occur; except for water extraction site access roads, which includes a 5-foot buffer. The temporary construction footprint for the onshore pipeline-only segments (i.e., not adjacent to an access road) of the natural gas pipeline component includes a 150-foot-wide impact corridor to account for pipeline trenching, side-casting, and equipment operation/travel. The temporary construction footprint for offshore segments of the natural gas pipeline (i.e., Iliamna Lake and Cook Inlet) varies (up to 1183-foot maximum).

<sup>2</sup> Includes Quarry B and Quarry C; Quarry A is in the footprint of the bulk TSF.

<sup>3</sup> Includes the onshore dredge material storage areas adjacent to the port facility.

<sup>4</sup> Includes the tie-in to the compressor station.

<sup>5</sup> Total length of pipeline. Includes lengths for segments that are co-located with the transportation corridor access road(s) that are not listed under the natural gas pipeline section of the table.

< = less than -- = not applicable GIS = Geographic Information System HDD = horizontal directional drilling

PLP = Pebble Limited Partnership TSF = tailings storage facility

**Table K2-20: Alternative 2—Summer Only Ferry Operations Variant Project Footprint**

Project Component	Facility	Permanent Footprint (acres)	Temporary Construction Footprint (acres) <sup>1</sup>	Length (miles)
Mine Site	Open Pit	609	--	--
	Sediment/Seepage Collection Systems	361	--	--
	Bulk Tailings Storage Facility	2,907	--	--
	Pyritic Tailings Storage Facility	1,000	--	--
	Stockpiles	527	--	--
	Quarries <sup>2</sup>	860	--	--
	On-site Access Roads	[857]	--	39
	Mineral Processing Facilities	[146]	--	--
	Mill Site Power Plant	22	--	--
	Mine Site Infrastructure	139	--	--
	Water Management Ponds	1,066	--	--
	Waste Management Facilities	17	--	--
	Water Treatment Plants	19	<1	--
	<b>Mine Site Total</b>	<b>[8,530]</b>	<b>&lt;1</b>	<b>39</b>
Transportation Corridor	Iliamna Spur Road	--	--	--
	Explosive Storage Spur Road	4	2	<1
	Mine Access Road	353	291	35
	Kokhanok Spur Road	--	--	--
	Pedro Bay Airport Spur Road	--	--	--
	Port Access Road	[231]	[139]	18
	North Access Road	--	--	--
	Water Extraction Pads and Access Roads	<1	<1	<1
	Material Sites	321	--	--
	North Ferry Terminal	--	--	--
	South Ferry Terminal	--	--	--
	Kokhanok East Ferry Terminal	--	--	--
	Eagle Bay Ferry Terminal	7	2	--
	Pile Bay Ferry Terminal	18	3	--
	<b>Transportation Corridor Total</b>	<b>[934]</b>	<b>[438]</b>	<b>54</b>
Port	Amakdedori Port	No change from Alternative 2 Diamond Point Port		
	Amakdedori Port Airstrip			
	Diamond Point Port <sup>3</sup>			
	Diamond Point Port Dredging Area			
	Water Extraction Pads and Access Roads			
	Lightering Location – Mooring Buoys and Anchors			
	<b>Port Total</b>	<b>55</b>	<b>80</b>	<b>--</b>
Natural Gas Pipeline	Compressor Station Pad <sup>4</sup>	No change from Alternative 2 Natural Gas Pipeline Corridor		
	HDD Pullback Work Area			
	Onshore Pipeline-Only Pipeline Corridor Segments			
	Material Sites			
	Pipeline Construction Access Roads			
	Cook Inlet Segment			
	Cottonwood Bay Segment			
	Iliamna Lake Segment			
	<b>Natural Gas Pipeline Total</b>	<b>300</b>	<b>1,451</b>	<b>164<sup>5</sup></b>
	<b>Alternative 2—Summer Only Ferry Operations Variant Total</b>	<b>[9,819]</b>	<b>1,969</b>	<b>132</b>

Notes:

Footprints are based on project GIS database. Numbers are rounded to the nearest whole number; therefore, the sum of individual facilities may not match the totals listed for the overall component.

<sup>1</sup> The temporary construction footprint for the transportation corridor and port components includes a 30-foot buffer around the permanent footprint where temporary construction-related activities would occur; except for water extraction site access roads, which includes a 5-foot buffer. The temporary construction footprint for the onshore pipeline-only segments (i.e., not adjacent to an access road) of the natural gas pipeline component includes a 150-foot-wide impact corridor to account for pipeline trenching, side-casting, and equipment operation/travel. The temporary construction footprint for offshore segments of the natural gas pipeline (i.e., Iliamna Lake and Cook Inlet) varies (up to 183-foot maximum).

<sup>2</sup> Includes Quarry B and Quarry C; Quarry A is in the footprint of the bulk TSF.

<sup>3</sup> Includes the onshore dredge material storage areas adjacent to the port facility.

<sup>4</sup> Includes the tie-in to the compressor station.

<sup>5</sup> Total length of pipeline. Includes lengths for segments that are co-located with the transportation corridor access road(s) that are not listed under the natural gas pipeline section of the table.

< = less than -- = not applicable GIS = Geographic Information System HDD = horizontal directional drilling  
PLP = Pebble Limited Partnership TSF = tailings storage facility

**Table K2-21: Alternative 2—Diamond Point Port Pile-Supported Dock Variant Project Footprint**

Project Component	Facility	Permanent Footprint (acres)	Temporary Construction Footprint (acres) <sup>1</sup>	Length (miles)
Mine Site	Open Pit	No change from Alternative 2 Mine Site		
	Sediment/Seepage Collection Systems			
	Bulk Tailings Storage Facility			
	Pyritic Tailings Storage Facility			
	Stockpiles			
	Quarries <sup>2</sup>			
	Onsite Access Roads			
	Mineral Processing Facilities			
	Mill Site Power Plant			
	Mine Site Infrastructure			
	Water Management Ponds			
	Waste Management Facilities			
	Water Treatment Plants			
	<b>Mine Site Total</b>	<b>8,497</b>	<b>&lt;1</b>	<b>39</b>
Transportation Corridor	Iliamna Spur Road	No change from Alternative 2 Transportation Corridor		
	Explosive Storage Spur Road			
	Mine Access Road			
	Kokhanok Spur Road			
	Pedro Bay Airport Spur Road			
	Port Access Road			
	North Access Road			
	Water Extraction Pads and Access Roads			
	Material Sites			
	North Ferry Terminal			
	South Ferry Terminal			
	Kokhanok East Ferry Terminal			
	Eagle Bay Ferry Terminal			
	Pile Bay Ferry Terminal			
	<b>Transportation Corridor Total</b>	<b>912</b>	<b>437</b>	<b>54</b>
Port	Amakdedori Port	--	--	--
	Amakdedori Port Airstrip	--	--	--
	Diamond Point Port <sup>3</sup>	[44]	[30]	--
	Diamond Point Port Dredging Area	--	58	--
	Water Extraction Pads and Access Roads	--	--	--
	Lightering Location – Mooring Buoys and Anchors	<1	--	--
	<b>Port Total</b>	<b>[44]</b>	<b>[88]</b>	<b>--</b>
Natural Gas Pipeline	Compressor Station Pad <sup>4</sup>	No change from Alternative 2 Natural Gas Pipeline Corridor		
	HDD Pullback Work Area			
	Onshore Pipeline-Only Pipeline Corridor Segments			
	Material Sites			
	Pipeline Construction Access Roads			
	Cook Inlet Segment			
	Cottonwood Bay Segment			
	Iliamna Lake Segment			
	<b>Natural Gas Pipeline Total</b>	<b>300</b>	<b>1,451</b>	<b>164<sup>5</sup></b>
	<b>Alternative 2—Diamond Point Port Pile-Supported Dock Variant Total</b>	<b>[9,753]</b>	<b>[1,976]</b>	<b>--</b>

Notes:

Footprints are based on project GIS database. Numbers are rounded to the nearest whole number; therefore, the sum of individual facilities may not match the totals listed for the overall component.

<sup>1</sup> The temporary construction footprint for the transportation corridor and port components includes a 30-foot buffer around the permanent footprint where temporary construction-related activities would occur; except for water extraction site access roads, which includes a 5-foot buffer. The temporary construction footprint for the onshore pipeline-only segments (i.e., not adjacent to an access road) of the natural gas pipeline component includes a 150-foot-wide impact corridor to account for pipeline trenching, side-casting, and equipment operation/travel. The temporary construction footprint for offshore segments of the natural gas pipeline (i.e., Iliamna Lake and Cook Inlet) varies (up to 183-foot maximum).

<sup>2</sup> Includes Quarry B and Quarry C; Quarry A is in the footprint of the bulk TSF.

<sup>3</sup> Includes the onshore dredge material storage areas adjacent to the port facility.

<sup>4</sup> Includes the tie-in to the compressor station.

<sup>5</sup> Total length of pipeline. Includes lengths for segments that are co-located with the transportation corridor access road(s) that are not listed under the natural gas pipeline section of the table.

< = less than -- = not applicable GIS = Geographic Information System HDD = horizontal directional drilling

PLP = Pebble Limited Partnership TSF = tailings storage facility

### K2.3.2 Material Sites

Construction materials would be excavated from borrow material sites along the transportation corridor roads. Table K2-22 provides information for Alternative 2 material sites, including the estimated quantities, size, type of material, use of material and whether blasting is required. Table K2-23 provides information for Alternative 2—Newhalen River North Crossing Variant material sites. Figure K2-5 and Figure K2-6 show the location of material sites identified for Alternative 2.

**Table K2-22: Alternative 2 Material Site Quantities Estimates**

Site	Quantity (cubic yards)	Size (acres) <sup>1</sup>	Type	Blasting Required (Yes/No)	Use
<b>Port Access Road</b>					
MS-D23	125,000	6	Rock	Yes	Road, Pipeline
MS-D24	351,000	25	Rock	Yes	Road, Pipeline
MS-D25	66,000	13	Gravel	No	Road, Pipeline
MS-D26	100,000	12	Gravel	No	Road, Pipeline
MS-D27	168,000	12	Rock	Yes	Road, Pipeline
MS-D28	102,000	13	Gravel and broken rock scree	No	Road, Pipeline
<b>Mine Access Road</b>					
MS-T00	200,000	8	Gravel	No	Road, Pipeline
MS-T01	700,000	12	Rock and gravel	Yes	Road, Pipeline
MS-E06	400,000	28	Sand and gravel	Yes	Road, Pipeline
MS-E07	250,000	45	Gravel	No	Road, Pipeline
MS-E08	250,000	16	Gravel	No	Road, Pipeline
MS-E09	400,000	29	Gravel	No	Road, Pipeline
MS-E10	300,000	8	Gravel	No	Road, Pipeline
MS-E11	300,000	25	Gravel	No	Road, Pipeline
MS-E12	200,000	33	Gravel	No	Road, Pipeline
MS-E13	250,000	16	Gravel	No	Road, Pipeline
MS-E14	400,000	20	Gravel	No	Road, Pipeline
Transportation Component Total	4,562,000	321			
<b>Natural Gas Pipeline</b>					
MS-PL-D01	50,000	4	Rock	Yes	Pipeline
MS-PL-D02	100,000	3	Gravel	No	Pipeline
MS-PL-D03	50,000	3	Rock	Yes	Pipeline
MS-D15	120,000	17	Gravel	No	Pipeline
MS-D16	263,000	21	Gravel	No	Pipeline
MS-D17	438,000	37	Gravel and sand	No	Pipeline
MS-D18	555,000	41	Gravel and sand	No	Pipeline
MS-D19	165,000	20	Gravel	No	Pipeline
MS-D20	360,000	35	Rock	Yes	Pipeline
MS-D21	216,000	41	Gravel	No	Pipeline
MS-D22	150,000	14	Gravel	No	Pipeline
MS-D31	210,000	39	Gravel	No	Pipeline
MS-D32	146,000	23	Gravel	No	Pipeline
Pipeline Component Total	2,823,000	298			
<b>Alternative 2 Total</b>	<b>7,385,000</b>	<b>619</b>			

Notes:

<sup>1</sup> Represents area of permanent impacts. Numbers are approximate and rounded

Source: Project GIS database

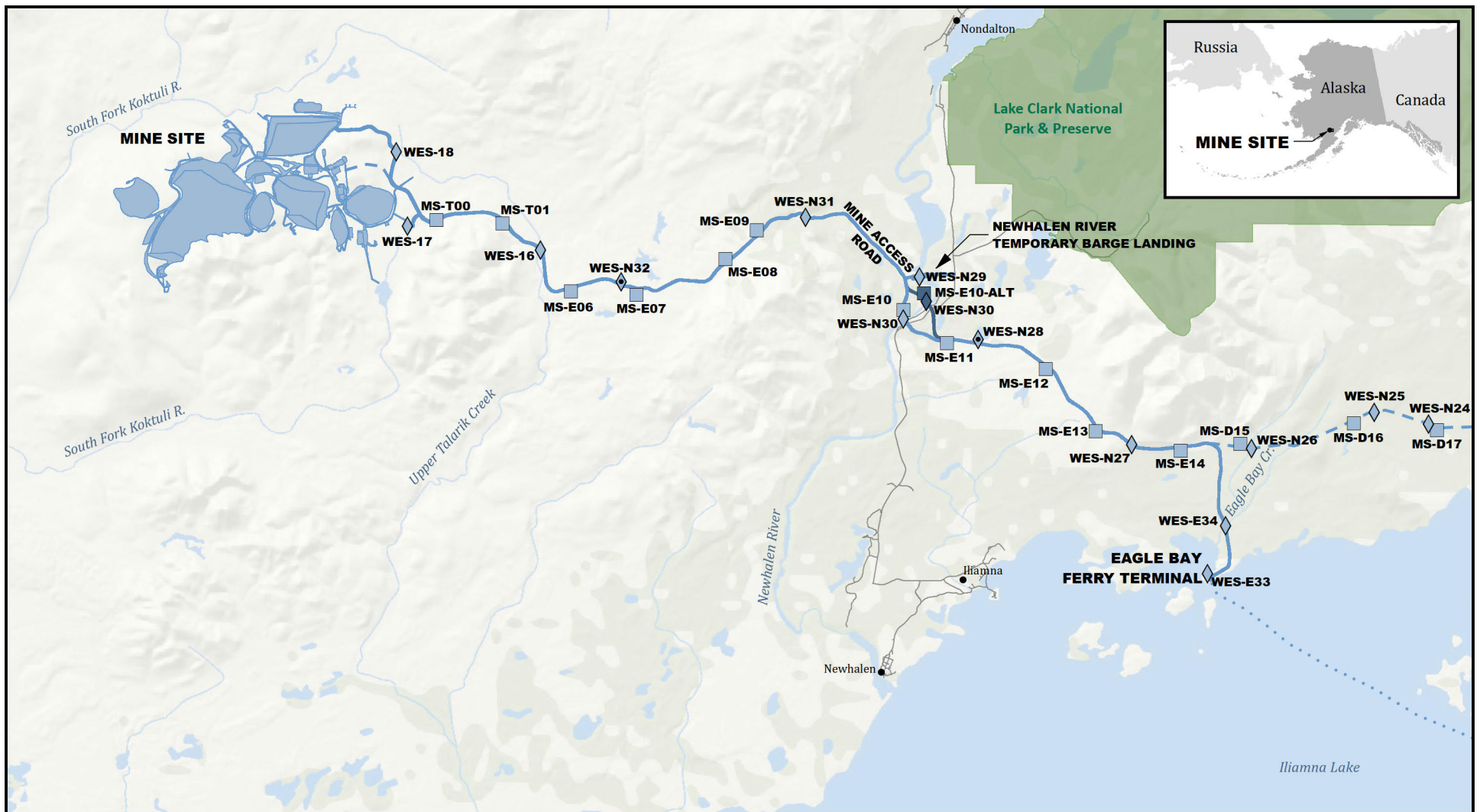
**Table K2-23: Alternative 2—Newhalen River North Crossing Variant Material Site Quantities Estimates**

Site	Quantity (cubic yards)	Size (acres) <sup>1</sup>	Type	Blasting Required (Yes/No)	Use
<b>Port Access Road</b>					
MS-D23	125,000	6	Rock	Yes	Road, Pipeline
MS-D24	351,000	25	Rock	Yes	Road, Pipeline
MS-D25	66,000	13	Gravel	No	Road, Pipeline
MS-D26	100,000	12	Gravel	No	Road, Pipeline
MS-D27	168,000	12	Rock	Yes	Road, Pipeline
MS-D28	102,000	13	Gravel and broken rock scree	No	Road, Pipeline
<b>Mine Access Road</b>					
MS-T00	200,000	8	Gravel	No	Road, Pipeline
MS-T01	700,000	12	Rock and gravel	Yes	Road, Pipeline
MS-E06	400,000	28	Sand and gravel	Yes	Road, Pipeline
MS-E07	250,000	45	Gravel	No	Road, Pipeline
MS-E08	250,000	16	Gravel	No	Road, Pipeline
MS-E09	400,000	29	Gravel	No	Road, Pipeline
MS-E10-ALT	300,000	25	Gravel	No	Road, Pipeline
MS-E11	300,000	25	Gravel	No	Road, Pipeline
MS-E12	200,000	33	Gravel	No	Road, Pipeline
MS-E13	250,000	16	Gravel	No	Road, Pipeline
MS-E14	400,000	20	Gravel	No	Road, Pipeline
Transportation Component Total	4,562,000	338			
<b>Natural Gas Pipeline</b>					
MS-PL-D01	50,000	4	Rock	Yes	Pipeline
MS-PL-D02	100,000	3	Gravel	No	Pipeline
MS-PL-D03	50,000	3	Rock	Yes	Pipeline
MS-D15	120,000	17	Gravel	No	Pipeline
MS-D16	263,000	21	Gravel	No	Pipeline
MS-D17	438,000	37	Gravel and sand	No	Pipeline
MS-D18	555,000	41	Gravel and sand	No	Pipeline
MS-D19	165,000	20	Gravel	No	Pipeline
MS-D20	360,000	35	Rock	Yes	Pipeline
MS-D21	216,000	41	Gravel	No	Pipeline
MS-D22	150,000	14	Gravel	No	Pipeline
MS-D31	210,000	39	Gravel	No	Pipeline
MS-D32	146,000	23	Gravel	No	Pipeline
Pipeline Component Total	2,823,000	298			
<b>Alternative 2 Total</b>	<b>7,385,000</b>	<b>636</b>			

Notes:

<sup>1</sup> Represents area of permanent impacts. Numbers are approximate and rounded

Source: Project GIS database



Sources: PLP 2019-RF1153; ADNRP

Note: The displayed features are the permanent footprint unless otherwise specified.



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#### Alternative 2

- ◆ Water Extraction Site
- ◆ Water Extraction Site with Access Road
- Material Sites
- ... Ferry Route
- Natural Gas Pipeline

#### Transportation Corridor

- Mine Site
- ◆ Water Extraction Site
- Material Site
- Transportation Corridor

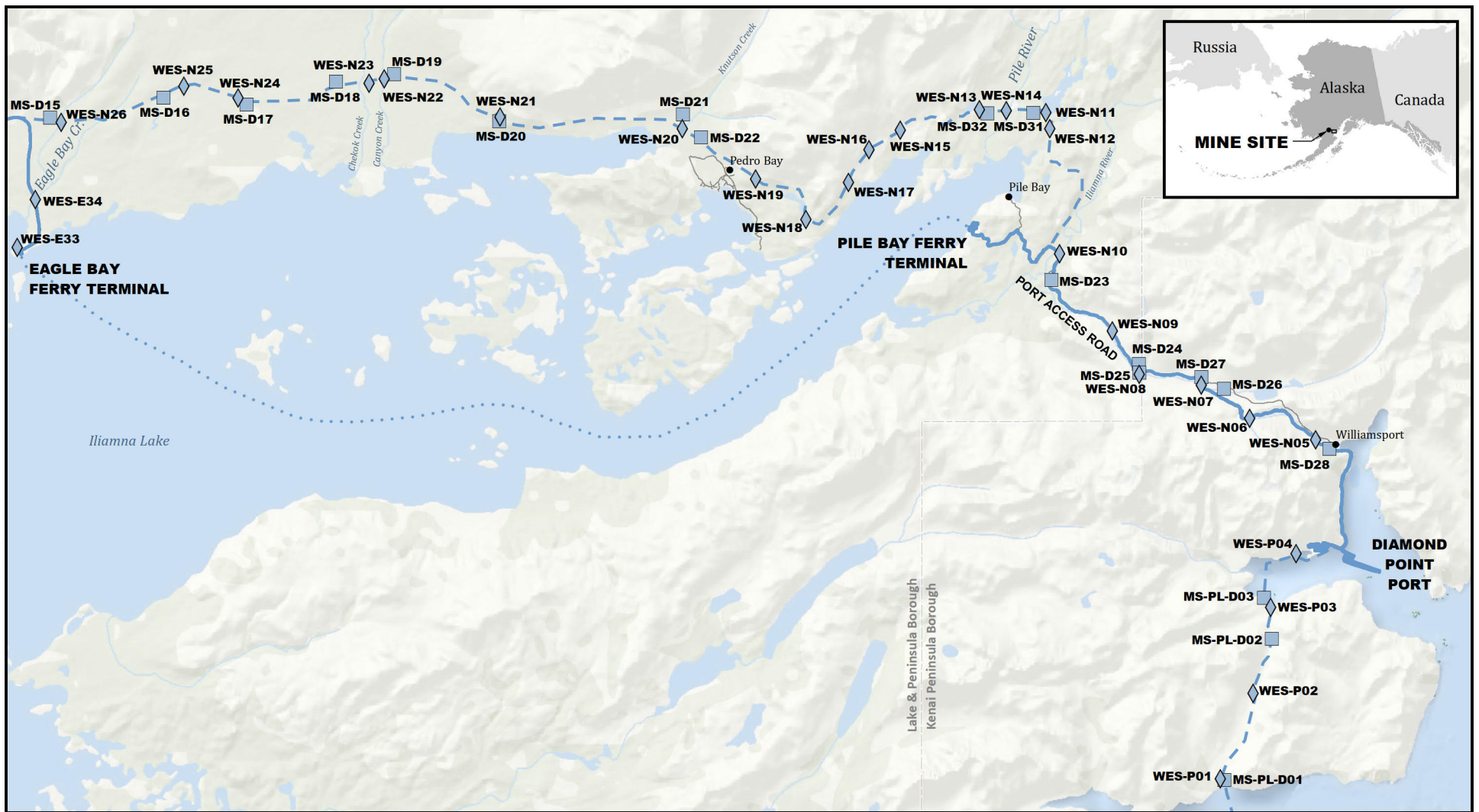
#### Other Features

- Local Roads
- National Park

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**ALTERNATIVE 2 - MATERIAL SITES AND  
WATER EXTRACTION SITES - MINE ACCESS ROAD**

FIGURE K2-5

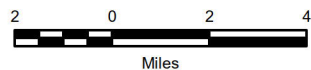


Sources: PLP 2019-RF1153; ADNIR

Note: The displayed features are the permanent footprint unless otherwise specified.



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#### Alternative 2

- ◆ Water Extraction Site
- ◆ Water Extraction Site with Access Road
- Material Sites

- ... Ferry Route
- Natural Gas Pipeline
- Transportation Corridor

#### Other Features

- Local Roads
- Borough Boundary
- National Park

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## ALTERNATIVE 2 - MATERIAL SITES AND WATER EXTRACTION SITES - PORT ACCESS ROAD

FIGURE K2-6

Water extraction from sources along the transportation corridor and natural gas pipeline corridor would be necessary to support project construction and operations (Figure K2-5 and Figure K2-6). Table K2-24 provides information for Alternative 2 water extraction sites, including the waterbody type, use, years and season of use, and estimated extraction rate and volumes.

**Table K2-24: Alternative 2 Water Extraction Site Quantity Estimates**

Water Extraction Site	All-Season (Yes/No)	Waterbody Type	Use	Years of Use	Extraction	
					Rate (gpm)	Annual Volume (gal)
Port Access Road						
WES-N05	Yes	Stream	Road and pipeline construction	Life of mine	500	3M
WES-N06	Yes	Stream	Road and pipeline construction	3	500	3M
WES-N07	Yes	Stream	Road and pipeline construction	3	500	3M
WES-N08	Yes	Pond	Road and pipeline construction	Life of mine	500	5M
WES-N09	Yes	Stream	Road and pipeline construction	3	500	3M
WES-N10	Yes	River	Road and pipeline construction	Life of mine	1,000	8M
Mine Access Road						
WES-16	Yes	Stream	Construction and testing	Life of mine	500	1M
WES-17	Yes	Pond	Construction	3	500	1M
WES-18	Yes	Pond	Construction	3	500	1M
WES-E33	Yes	Lake	Road and pipeline construction	Life of mine	1,000	8M
WES-E34	Yes	Stream	Road and pipeline construction	3	500	3M
WES-N27	No	Stream	Road and pipeline construction	3	500	3M
WES-N28	Yes	Lake	Road and pipeline construction	3	500	3M
WES-N29	Yes	River	Road and pipeline construction	3	1,000	8M
WES-N30 <sup>1</sup>	Yes	River	Road and pipeline construction	Life of mine	1,000	5M
WES-N31	No	Stream	Road and pipeline construction	3	500	3M
WES-N32	Yes	Pond	Road and pipeline construction	3	500	3M
Transportation Component Total						64M

**Table K2-24: Alternative 2 Water Extraction Site Quantity Estimates**

Water Extraction Site	All-Season (Yes/No)	Waterbody Type	Use	Years of Use	Extraction	
					Rate (gpm)	Annual Volume (gal)
Natural Gas Pipeline <sup>2</sup>						
WES-N11	No	Stream	Pipeline construction	3	500	3M
WES-N12	Yes	Stream	Pipeline construction	3	500	3M
WES-N13	Yes	River	Pipeline construction	3	1,000	8M
WES-N14	Yes	Lake	Pipeline construction	3	500	3M
WES-N15	No	Stream	Pipeline construction	3	500	3M
WES-N16	No	Stream	Pipeline construction	3	500	3M
WES-N17	No	Stream	Pipeline construction	3	500	3M
WES-N18	No	Lake	Pipeline construction	3	500	3M
WES-N19	No	Stream	Pipeline construction	3	500	3M
WES-N20	Yes	Stream	Pipeline construction	3	1,000	8M
WES-N21	No	Stream	Pipeline construction	3	500	3M
WES-N22	Yes	Stream	Pipeline construction	3	1,000	3M
WES-N23	Yes	Stream	Pipeline construction	3	1,000	5M
WES-N24	Yes	Stream	Pipeline construction	3	500	3M
WES-N25	Yes	Stream	Pipeline construction	3	500	3M
WES-N26	Yes	Stream	Pipeline construction	3	500	3M
WES-P01	Yes	Stream	Pipeline construction and testing	1	500	3M
WES-P02	Yes	Stream	Pipeline construction	1	500	1M
WES-P03	Yes	Stream	Pipeline construction and testing	1	500	3M
WES-P04	No	Stream	Pipeline construction	1	500	1M
Pipeline Component Total						68M
Alternative 2 Total						132M

Notes:

<sup>1</sup> For the Alternative 2—Newhalen River North Crossing Variant, this water extraction site is in a different location (i.e., different location, same water extraction site name).

<sup>2</sup> Includes water extraction sites along pipeline-only portions of the natural gas pipeline corridor (i.e., not adjacent to transportation corridor access roads).

gal = gallons

gpm = gallons per minute

M = million

Source: Project GIS database

### K2.3.3 Access Roads to Water Extraction Sites

All season gravel roads would be necessary to access some of the water extraction sites proposed for Alternative 2 (Figure K2-5 and Figure K2-6). Table K2-25 provides details on the location and approximate length and acreage of each planned access road.

**Table K2-25: Alternative 2 Water Extraction Site Access Roads**

Name	Nearest Mile Post	Length (miles)	Permanent Footprint (acres) <sup>1</sup>	Temporary Construction Footprint (acres)
AWES-N28	MAR MP-11	<1	--	<1
AWES-N32	MAR MP-24	<1	--	<1
<b>Alternative 2 Total</b>		<b>&lt;1</b>	<b>--</b>	<b>&lt;1</b>

Notes:

<sup>1</sup> Represents area of permanent impacts. Numbers are approximate and rounded.

< = less than

-- = not applicable

Source: Project GIS database

## K2.4 ALTERNATIVE 3—NORTH ROAD ONLY

### K2.4.1 Alternative 3 Project Components Footprints

Table K2-26 provides a summary of the Alternative 3—North Road Only project footprint for each of the four project components (mine site, transportation corridor, port, and natural gas pipeline) described in Chapter 2, Alternatives, of the EIS. Table K2-27 summarizes the difference in footprints for the variant analyzed under Alternative 3. Brackets around a number indicate a change between the variant and the base case Alternative 3.

**Table K2-26: Alternative 3 Project Footprint**

Project Component	Facility	Permanent Footprint (acres)	Temporary Construction Footprint (acres) <sup>1</sup>	Length (miles)
Mine Site	Open Pit	609	--	--
	Sediment/Seepage Collection Systems	360	--	--
	Bulk Tailings Storage Facility	2,797	--	--
	Pyritic Tailings Storage Facility	1,000	--	--
	Stockpiles	527	--	--
	Quarries <sup>2</sup>	860	--	--
	Onsite Access Roads	860	--	39
	Mineral Processing Facilities	113	--	--
	Mill Site Power Plant	22	--	--
	Mine Site Infrastructure	139	--	--
	Water Management Ponds	1,066	--	--
	Waste Management Facilities	17	--	--
	Water Treatment Plants	19	<1	--
	<b>Mine Site Total</b>	<b>8,390</b>	<b>&lt;1</b>	<b>39</b>

**Table K2-26: Alternative 3 Project Footprint**

Project Component	Facility	Permanent Footprint (acres)	Temporary Construction Footprint (acres) <sup>1</sup>	Length (miles)
Transportation Corridor	Iliamna Spur Road	--	--	--
	Explosive Storage Spur Road	4	2	<1
	Mine Access Road	--	--	--
	Kokhanok Spur Road	--	--	--
	Pedro Bay Airport Spur Road	6	3	<1
	Port Access Road	--	--	--
	North Access Road	1,077	650	82
	Water Extraction Pads and Access Roads		<1	<1
	Material Sites	604	--	--
	North Ferry Terminal	--	--	--
	South Ferry Terminal	--	--	--
	Kokhanok East Ferry Terminal	--	--	--
	Eagle Bay Ferry Terminal	--	--	--
	Pile Bay Ferry Terminal	--	--	--
	<b>Transportation Corridor Total</b>	<b>1,691</b>	<b>655</b>	<b>82</b>
Port	Amakdedori Port	--	--	--
	Amakdedori Port Airstrip	--	--	--
	Diamond Point Port <sup>3</sup>	35	16	--
	Diamond Point Port Dredging Area	--	76	--
	Water Extraction Pads and Access Roads	--	--	--
	Lightering Location – Mooring Buoys and Anchors	<1	--	--
	<b>Port Total</b>	<b>36</b>	<b>92</b>	<b>--</b>
Natural Gas Pipeline	Compressor Station Pad <sup>4</sup>	2	--	<1
	HDD Pullback Work Area	--	<1	--
	Onshore Pipeline-Only Pipeline Corridor Segments	--	124	8
	Material Sites	11	--	--
	Pipeline Construction Access Roads	--	--	--
	Cook Inlet Segment	--	569	75
	Cottonwood Bay Segment	--	69	3
	Iliamna Lake Segment	--	--	--
	<b>Natural Gas Pipeline Total</b>	<b>13</b>	<b>762</b>	<b>164<sup>5</sup></b>
<b>Alternative 3 Total</b>		<b>10,130</b>	<b>1,510</b>	<b>--</b>

**Notes:**

Footprints are based on project GIS database. Numbers are rounded to the nearest whole number; therefore, the sum of individual facilities may not match the totals listed for the overall component.

<sup>1</sup> The temporary construction footprint for the transportation corridor and port components includes a 30-foot buffer around the permanent footprint where temporary construction-related activities would occur; except for water extraction site access roads, which include a 5-foot buffer. The temporary construction footprint for the onshore pipeline-only segments (i.e., not adjacent to an access road) of the natural gas pipeline component includes a 150-foot-wide impact corridor to account for pipeline trenching, side-casting, and equipment operation/travel. The temporary construction footprint for offshore segments of the natural gas pipeline (i.e., Iliamna Lake and Cook Inlet) varies (up to 175-foot maximum).

<sup>2</sup> Includes Quarry B and Quarry C; Quarry A is in the footprint of the bulk TSF.

<sup>3</sup> Includes the initial dredge material stockpile north of the port. The maintenance dredge material stockpile would be located in a material site for the transportation corridor.

<sup>4</sup> Includes the tie-in to the compressor station.

<sup>5</sup> Total length of pipeline. Includes lengths for segments that are co-located with the transportation corridor access road(s) that are not listed under the natural gas pipeline section of the table.

< = less than

-- = not applicable

GIS = Geographic Information System

HDD = horizontal directional drilling

PLP = Pebble Limited Partnership

TSF = tailings storage facility

**Table K2-27: Alternative 3—Concentrate Pipeline Variant Project Footprint**

Project Component	Facility	Permanent Footprint (acres)	Temporary Construction Footprint (acres) <sup>1</sup>	Length (miles)
Mine Site	Open Pit	609	--	--
	Sediment/Seepage Collection Systems	360	--	--
	Bulk Tailings Storage Facility	2,797	--	--
	Pyritic Tailings Storage Facility	1,000	--	--
	Stockpiles	527	--	--
	Quarries <sup>2</sup>	860	--	--
	Onsite Access Roads	860	--	39
	Mineral Processing Facilities	[114]	--	--
	Mill Site Power Plant	22	--	--
	Mine Site Infrastructure	139	--	--
	Water Management Ponds	1,066	--	--
	Waste Management Facilities	17	--	--
	Water Treatment Plants	19	<1	--
	<b>Mine Site Total</b>	<b>[8,391]</b>	<b>&lt;1</b>	<b>39</b>
Transportation Corridor	Iliamna Spur Road	No change from Alternative 3 Transportation Corridor <sup>3</sup>		
	Explosive Storage Spur Road			
	Mine Access Road			
	Kokhanok Spur Road			
	Pedro Bay Airport Spur Road			
	Port Access Road			
	North Access Road			
	Water Extraction Pads and Access Roads			
	Material Sites			
	North Ferry Terminal			
	South Ferry Terminal			
	Kokhanok East Ferry Terminal			
	Eagle Bay Ferry Terminal			
	Pile Bay Ferry Terminal			
	<b>Transportation Corridor Total</b>	<b>1,691</b>	<b>655</b>	<b>82</b>
Port	Amakdedori Port	--	--	--
	Amakdedori Port Airstrip	--	--	--
	Diamond Point Port <sup>4</sup>	[36]	16	--
	Diamond Point Port Dredging Area	--	76	--
	Water Extraction Pads and Access Roads	--	--	--
	Lightering Location – Mooring Buoys and Anchors	<1	--	--
	<b>Port Total</b>	<b>36</b>	<b>92</b>	<b>--</b>
Natural Gas Pipeline	Compressor Station Pad <sup>5</sup>	No change from Alternative 3 Natural Gas Pipeline Corridor		
	HDD Pullback Work Area			
	Onshore Pipeline-Only Pipeline Corridor Segments			
	Material Sites			
	Pipeline Construction Access Roads			
	Cook Inlet Segment			
	Cottonwood Bay Segment			
	Iliamna Lake Segment			
	<b>Natural Gas Pipeline Total</b>	<b>13</b>	<b>769</b>	<b>164<sup>6</sup></b>
	<b>Alternative 3—Concentrate Pipeline Variant Total</b>	<b>[10,132]</b>	<b>1,509</b>	<b>--</b>

Notes:

Footprints are based on project GIS database. Numbers are rounded to the nearest whole number; therefore, the sum of individual facilities may not match the totals listed for the overall component.

<sup>1</sup> The temporary construction footprint for the transportation corridor and port components includes a 30-foot buffer around the permanent footprint where temporary construction-related activities would occur; except for water extraction site access roads, which include a 5-foot buffer. The temporary construction footprint for the onshore pipeline-only segments (i.e., not adjacent to an access road) of the natural gas pipeline component includes a 150-foot-wide impact corridor to account for pipeline trenching, side-casting, and equipment operation/travel. The temporary construction footprint for offshore segments of the natural gas pipeline (i.e., Iliamna Lake and Cook Inlet) varies (up to 175-foot maximum).

<sup>2</sup> Includes Quarry B and Quarry C; Quarry A is in the footprint of the bulk TSF.

<sup>3</sup> The concentrate pipeline (and the optional return water pipeline) would be co-located in a single trench with the gas pipeline at the toe of the north road corridor embankment. The Alternative 3 base-case road width was conceptually engineered to accommodate the concentrate pipeline variant.

<sup>4</sup> Includes the initial dredge material stockpile north of the port. The maintenance dredge material stockpile would be located in a material site for the transportation corridor.

<sup>5</sup> Includes the tie-in to the compressor station.

<sup>6</sup> Total length of pipeline. Includes lengths for segments that are co-located with the transportation corridor access road(s) that are not listed under the natural gas pipeline section of the table.

< = less than -- = not applicable GIS = Geographic Information System HDD = horizontal directional drilling  
PLP = Pebble Limited Partnership TSF = tailings storage facility

## K2.4.2 Material Sites

Construction materials would be excavated from borrow material sites along the transportation corridor roads. Table K2-28 provides information for Alternative 3 material sites, including the estimated quantities, size, type of material, use of material, and whether blasting is required. Figure K2-7 shows the location of material sites identified for Alternative 3.

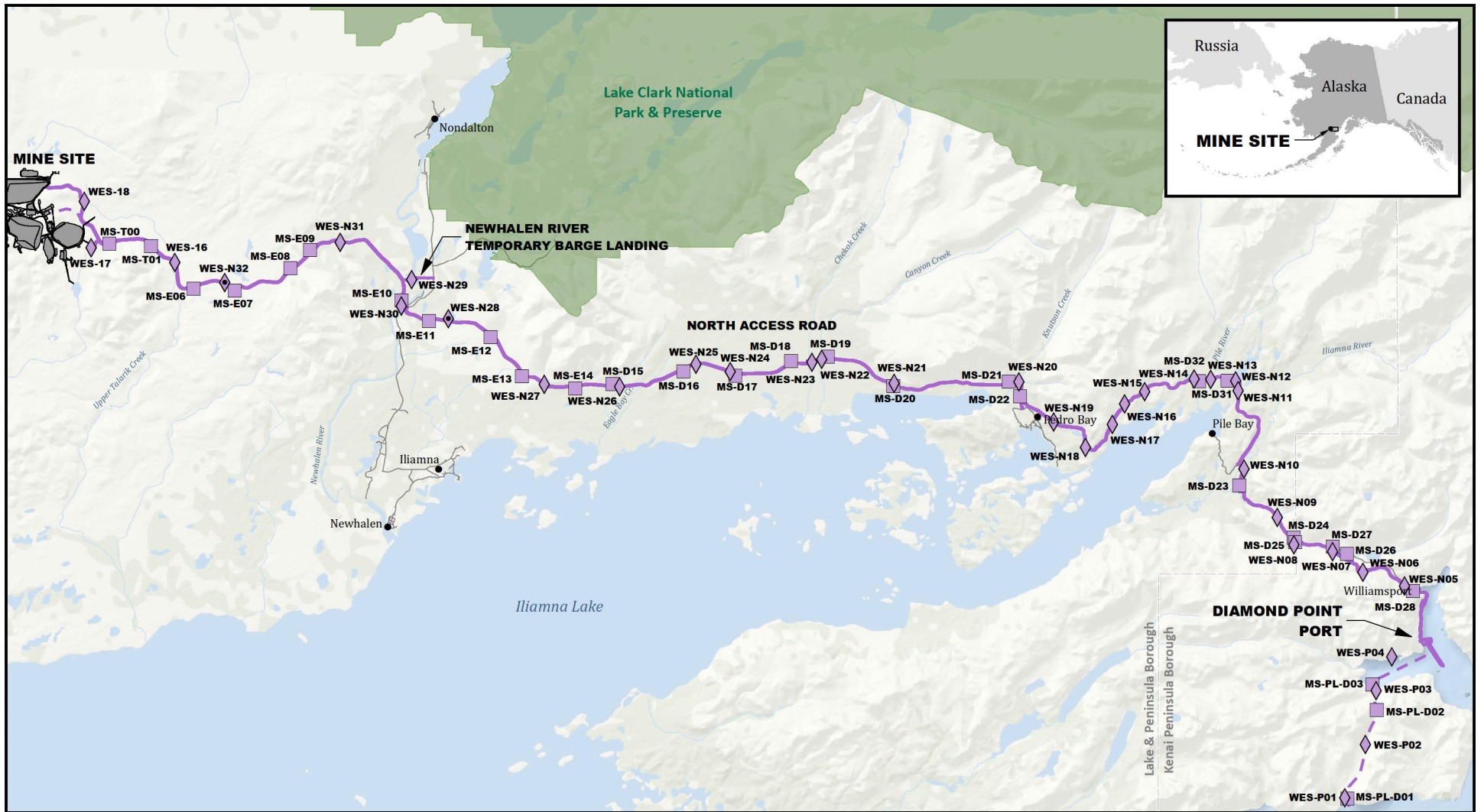
**Table K2-28: Alternative 3 Material Site Quantities Estimates**

Site	Quantity (cubic yards)	Size (acres) <sup>1</sup>	Type	Blasting Required (Yes/No)	Use
<b>North Access Road</b>					
MS-E06	400,000	28	Sand and gravel	Yes	Road, Pipeline
MS-E07	250,000	45	Gravel	No	Road, Pipeline
MS-E08	250,000	16	Gravel	No	Road, Pipeline
MS-E09	400,000	27	Gravel	No	Road, Pipeline
MS-E10	300,000	6	Gravel	No	Road, Pipeline
MS-E11	300,000	25	Gravel	No	Road, Pipeline
MS-E12	200,000	33	Gravel	No	Road, Pipeline
MS-E13	250,000	16	Gravel	No	Road, Pipeline
MS-E14	400,000	20	Gravel	No	Road, Pipeline
MS-D15	120,000	19	Gravel	No	Road, Pipeline
MS-D16	263,000	21	Gravel	No	Road, Pipeline
MS-D17	438,000	37	Gravel and sand	No	Road, Pipeline
MS-D18	500,000	41	Gravel and sand	No	Road, Pipeline
MS-D19	165,000	21	Gravel	No	Road, Pipeline
MS-D20	360,000	35	Rock	Yes	Road, Pipeline
MS-D21	216,000	36	Gravel	No	Road, Pipeline
MS-D22	150,000	12	Gravel	No	Road, Pipeline
MS-D23	125,000	6	Rock	Yes	Road, Pipeline
MS-D24	351,000	25	Rock	Yes	Road, Pipeline
MS-D25	100,000	8	Gravel	No	Road, Pipeline
MS-D26	100,000	12	Gravel	No	Road, Pipeline
MS-D27	168,000	12	Rock	Yes	Road, Pipeline
MS-D28	102,000	13	Gravel and broken rock scree	No	Road, Pipeline
MS-D31	210,000	45	Gravel	No	Road, Pipeline
MS-D32	146,000	24	Gravel	No	Road, Pipeline
MS-T00	200,000	7	Gravel	No	Road, Pipeline
MS-T01	700,000	12	Rock and gravel	Yes	Road, Pipeline
Transportation Component Total	7,164,000	604			
<b>Natural Gas Pipeline</b>					
MS-PL-D01	50,000	4	Rock	Yes	Pipeline
MS-PL-D02	100,000	3	Gravel	No	Pipeline
MS-PL-D03	50,000	3	Rock	Yes	Pipeline
Pipeline Component Total	200,000	11			
<b>Alternative 3 Total</b>	<b>7,364,000</b>	<b>615</b>			

Notes:

<sup>1</sup> Represents area of permanent impacts. Numbers are approximate and rounded.

Source: Project GIS database

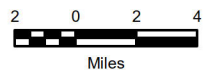


Sources: PLP 2020-RFI 168; PLP 2019-RFI153; ADN R

Note: The displayed features are the permanent footprint unless otherwise specified.



**US Army Corps of Engineers**



**Alternative 3**

- Water Extraction Site
- Water Extraction Site with Access Road
- Material Sites
- Natural Gas Pipeline
- Transportation Corridor/Port

**Alternative 1a**

- Mine Site

**Other Features**

- Local Roads
- Borough Boundary
- National Park

**PEBBLE PROJECT EIS**

**ALTERNATIVE 3 - MATERIAL SITES AND WATER EXTRACTION SITES - NORTH ACCESS ROAD**

**FIGURE K2-7**

### K2.4.3 Water Extraction Sites

Water extraction from sources along the transportation corridor would be necessary to support project construction and operations (Figure K2-7). Table K2-29 provides information for Alternative 3 water extraction sites, including the waterbody type, use, years and season of use, and estimated extraction rate and volumes.

**Table K2-29: Alternative 3 Water Extraction Site Quantity Estimates**

Water Extraction Site	All-Season (Yes/No)	Waterbody Type	Use	Years of Use	Extraction	
					Rate (gpm)	Annual Volume (gal)
North Access Road						
WES-16	Yes	Stream	Construction and testing	Life of mine	500	1M
WES-17	Yes	Pond	Construction	3	500	1M
WES-18	Yes	Pond	Construction	3	500	1M
WES-N05	Yes	Stream	Road and pipeline construction	Life of mine	500	3M
WES-N06	Yes	Stream	Road and pipeline construction	3	500	3M
WES-N07	Yes	Stream	Road and pipeline construction	3	500	3M
WES-N08	Yes	Pond	Road and pipeline construction	Life of mine	500	5M
WES-N09	Yes	Stream	Road and pipeline construction	3	500	3M
WES-N10	Yes	River	Road and pipeline construction	Life of mine	1,000	8M
WES-N11	No	Stream	Road and pipeline construction	3	500	3M
WES-N12	Yes	Stream	Road and pipeline construction	Life of mine	500	3M
WES-N13	Yes	River	Road and pipeline construction	3	1,000	8M
WES-N14	Yes	Lake	Road and pipeline construction	Life of mine	500	3M
WES-N15	No	Stream	Road and pipeline construction	3	500	3M
WES-N16	No	Stream	Road and pipeline construction	3	500	3M
WES-N17	No	Stream	Road and pipeline construction	3	500	3M
WES-N18	No	Lake	Road and pipeline construction	3	500	3M
WES-N19	No	Stream	Road and pipeline construction	3	500	3M
WES-N20	Yes	Stream	Road and pipeline construction	Life of mine	1,000	8M

**Table K2-29: Alternative 3 Water Extraction Site Quantity Estimates**

Water Extraction Site	All-Season (Yes/No)	Waterbody Type	Use	Years of Use	Extraction	
					Rate (gpm)	Annual Volume (gal)
WES-N21	No	Stream	Road and pipeline construction	3	500	3M
WES-N22	Yes	Stream	Road and pipeline construction	Life of mine	1,000	3M
WES-N23	Yes	Stream	Road and pipeline construction	3	1,000	5M
WES-N24	Yes	Stream	Road and pipeline construction	3	500	3M
WES-N25	Yes	Stream	Road and pipeline construction	3	500	3M
WES-N26	Yes	Stream	Road and pipeline construction	3	500	3M
WES-N27	No	Stream	Road and pipeline construction	3	500	3M
WES-N28	Yes	Lake	Road and pipeline construction	3	500	3M
WES-N29	Yes	River	Road and pipeline construction	Life of mine	1,000	8M
WES-N30	Yes	River	Road and pipeline construction	3	1,000	5M
WES-N31	No	Stream	Road and pipeline construction	3	500	3M
WES-N32	Yes	Pond	Road and pipeline construction	3	500	3M
Transportation Component Total						113M
<b>Natural Gas Pipeline<sup>1</sup></b>						
WES-P01	Yes	Stream	Pipeline construction and testing	1	500	3M
WES-P02	Yes	Stream	Pipeline construction	1	500	1M
WES-P03	Yes	Stream	Pipeline construction and testing	1	500	3M
WES-P04	No	Stream	Pipeline construction	1	500	1M
Pipeline Component Total						8M
<b>Alternative 3 Total</b>						<b>121M</b>

Notes:

<sup>1</sup>Includes water extraction sites along pipeline-only portions of the natural gas pipeline corridor (i.e., not adjacent to transportation corridor access roads).

gal = gallons

gpm = gallons per minute

M = Millions

Source: Project GIS database

#### **K2.4.4 Access Roads to Water Extraction Sites**

All-season gravel roads would be necessary to access some of the water extraction sites proposed for Alternative 3 (Figure K2-7). These access roads would be the same as presented in Table K2-25 for Alternative 2.

## K3.1 INTRODUCTION TO AFFECTED ENVIRONMENT

Information about traditional ecological knowledge (TEK) and the approach taken by the US Army Corps of Engineers (USACE) to collect TEK is outlined in Section 3.1, Introduction to Affected Environment. The TEK information collected is presented below.

### K3.1.1 Scoping Comments

Scoping comments were pulled from the Scoping Report (Appendix A). Comments received that pertain to the topics listed in Section 3.1, Introduction to Affected Environment, are listed below.

- Fish:
  - The area that makes up the headwaters is full of underwater streams where small fry/fingerlings swim as they emerge. They sometimes swim into lakes and ponds of the region and often get too big to get out; referred to as “landlocked salmon.”
  - Many species of fish are used for subsistence harvest, not just salmon.
  - The people in Seldovia have a long tradition of subsistence fishing for herring in Kamishak Bay. The herring also support other animals that we subsist on.
  - The placement of the tailings impoundment facility on the North Fork of the Koktuli River is prime king salmon habitat.
- Wildlife:
  - Exploration activities at the site have caused caribou to avoid the area.
  - Helicopter traffic during exploration disrupted subsistence activities. Particularly, helicopter traffic impacts spring waterfowl hunting (geese), displaces caribou, and impacts the Koktuli River.
- Birds:
  - Kamishak Bay is home to a large seabird nesting colony.
  - Bald eagles nest and feed along the coast and along all of the major salmon spawning rivers in the Bristol Bay and Cook Inlet regions. A relatively high number of golden eagles are also found here.
- Marine Mammals:
  - Incorporate TEK on freshwater seals in Iliamna Lake and be aware that there is a Freshwater Seal Commission.
  - The proposed ferry could strike seals in Iliamna Lake, which would congregate in the open water created by the ice-breaking ferry.
- Vegetation:
  - Over 80 edible and medicinal plants grow and are harvested in the project area including several species of berries, wild peas, wild onions, ferns, cow parsnip, rosehips, and many others.
- Subsistence Activity:
  - Be sure to include Kodiak Island in your analysis because it has important subsistence areas that could be impacted by the project.
  - The road corridor would go through winter moose hunting area in the Talarik Creek watershed.
  - The Nushagak, Mulchatna, and Koktuli watersheds are the hunting and fishing areas for people of New Stuyahok.

- The Amakdedori area has been historically used for early subsistence activities, including salmon harvest.
- The mountain behind Nondalton is traditional subsistence area.
- The Frying Pan Lake area is important to Nondalton people and shared with other neighboring people.
- The people in Seldovia have a long tradition of subsistence fishing for herring in Kamishak Bay. The herring also support other animals that we subsist on.
- The residents along Iliamna Lake rely on access to small islands for the harvest of bird eggs in the spring.
- A chart on the Bristol Bay seasonal subsistence gathering cycle was submitted.
- Culturally Important Areas:
  - The Amakdedori port area has been used as a site for a cultural camp, subsistence use areas, and school field trips.
  - There are ancestral burial grounds at/near the proposed Amakdedori port, along the road route on the south side of Iliamna Lake, and on the road route to the south ferry dock.
  - This region of Alaska contains several recorded rock art (i.e., petroglyph) sites. No doubt more sites like this remain to be discovered. Many of the rock art panels are on shorelines and only visible during low tide; therefore, it is easy for archaeological surveys to miss these important cultural resources.
- Navigation:
  - While lower Cook Inlet and Kamishak Bay do not have ice or currents to the same extent as the upper Cook Inlet, lower Cook Inlet is not nearly as protected as the waters of upper Cook Inlet, and Kamishak Bay experiences challenging winter sea conditions.
  - No depths are recorded on navigation charts for Iliamna Lake. Some rocks on the chart do not exist; others are not where the charts show them to be. Some are not on the charts at all. There are places where the depth goes from 400 feet to 30 feet.
  - Wind has pushed ice on the north shore of Iliamna Lake in piles as high as 50 feet and could damage the proposed ferry terminal.
  - The east winds on Iliamna Lake are strong and generate large waves that would make the proposed ferry unreliable and dangerous; winds can reach 100 miles per hour.
  - A disabled ferry could be blown by the wind onto the shoreline such as at Eagle Bluffs.

Scoping comments that referenced a geographic location via the online comment form web mapping feature are below.

- Culturally Important Areas

**Applicable Comment**

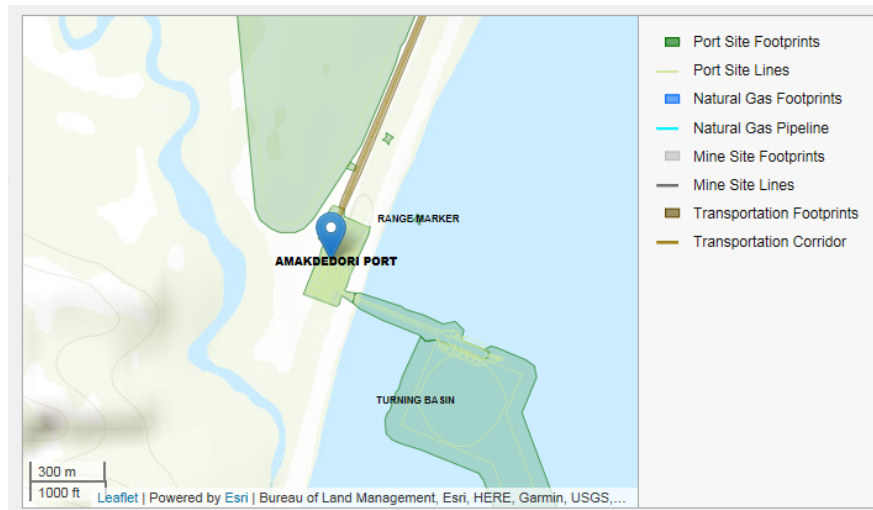
The proposed dredge storage and port site on this map is overlaid on the Amakdedori Native Village. This is also the site of cultural learning camps, subsistence use areas, and school field trips.

...

Survey work needs to include consultation with local tribal governments to apply religious and culturally appropriate research methods. Any alternatives will need to address meaningful mitigation to the loss of access to historical cultural resource sites and to living cultural resource sites.

Loss of access and location changes to the traditional learning camps and school field trips to the Amakdedori Native Village will need to be made in consultation with the Kokhanok school and parents. Alternative locations for these teachings would need to include other cultural sites of the Kachemak Tradition.

...

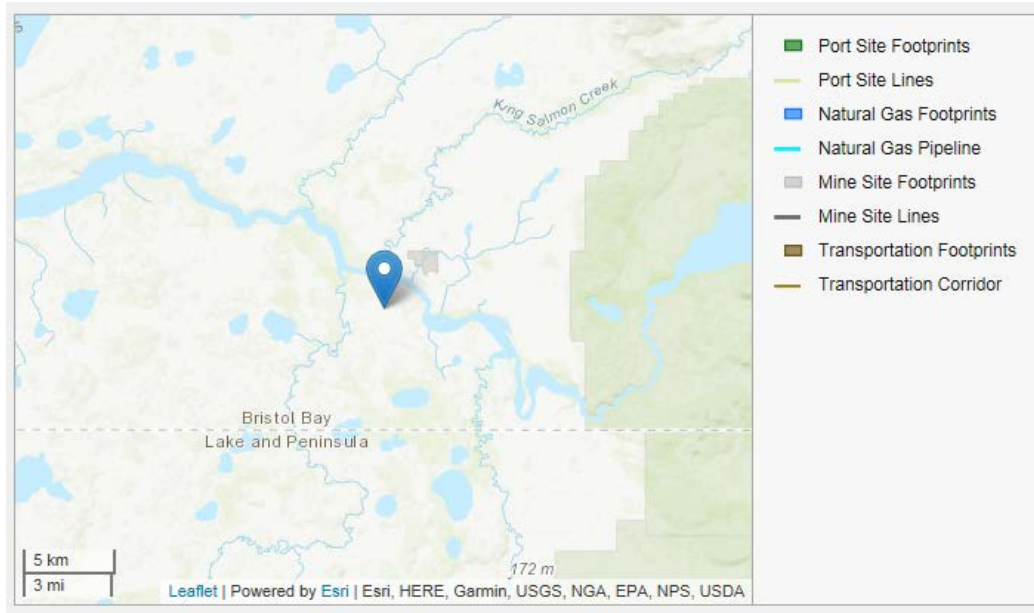


- Subsistence Activity

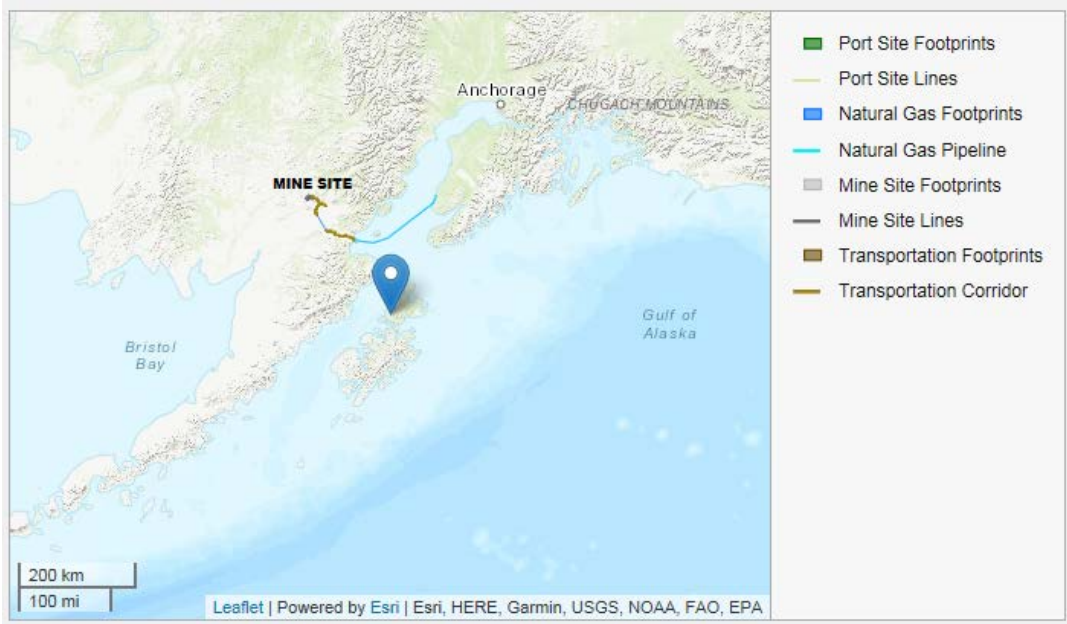
**Applicable Comment**

It worries me that the mine could impact animals, fish and berries that my friends and I gather for subsistence. A lot of us depend on the land and water for food. It offsets the high cost of living and shipping food into the area. We rely on moose, caribou, bear, many berries etc.

...



- Subsistence Activity

Applicable Comment
<p>My husband and I have a set net site on Raspberry Island. We are especially concerned about transport plans across Lake Clark and Cook Inlet. We learned during the Exxon Valdez oil spill that the spills in one place can impact fisheries and habitats along a wide swath. Although the spill was in Prince William Sound we found oil on our beaches in the Kodiak District and our fisheries was shut down.</p>  <p>The map displays the state of Alaska with a focus on the Pebble Mine area. A blue pin marks the 'MINE SITE' in the central-eastern part of the state. To the west, 'Bristol Bay' is labeled, and to the east, the 'Gulf of Alaska' is shown. The 'CHUGACH MOUNTAINS' are indicated in the northeast. A legend on the right side of the map defines several symbols: green squares for 'Port Site Footprints', yellow lines for 'Port Site Lines', blue squares for 'Natural Gas Footprints', cyan lines for 'Natural Gas Pipeline', grey squares for 'Mine Site Footprints', black lines for 'Mine Site Lines', brown squares for 'Transportation Footprints', and yellow lines for 'Transportation Corridor'. A scale bar at the bottom left shows '200 km' and '100 mi'. The map is credited to 'Leaflet   Powered by Esri   Esri, HERE, Garmin, USGS, NOAA, FAO, EPA'.</p>

### K3.1.2 Draft Environmental Impact Statement Comments

Comments on the Draft Environmental Impact Statement (EIS) were pulled from the Comment Analysis Report (Appendix D). Comments received that pertain to the topics listed in Section 3.1, Introduction to Affected Environment, are listed below.

- Subsistence Activity:
  - Additional concerns exist regarding potential impacts to the hundreds of allotments owned by Alaska Natives, which dot the landscape in the watersheds most likely affected by the proposed mining activities. These holdings were selected primarily for their importance as subsistence harvesting locations and traditional family holdings, with many of them found along streams, rivers, lakes, or other sources of freshwater; each allotment is located in watersheds also containing high-quality, diverse aquatic habitats with complex ecosystems that are important for subsistence resources.
  - The area between the Newhalen River and Upper Talarik drainage is used for subsistence activities, including hunting and harvesting.
- Navigation:
  - Hurricanes near Bristol Bay have flooded camps and trails, and have caused the relocation of cabins and buildings in the area.
  - Cook Inlet, near the proposed Amakdedori port, is known for high winds and difficult navigation for large vessels.
  - Ice on Iliamna Lake has been observed to be up to 2 feet thick.

- 80 knot winds have been observed near Kamishak Bay.
  - Salt water spray has been observed to accumulate to over a foot thick in 15 degree temperature, which could lead to sinking potential for ferries.
- Transportation:
  - The tundra is not able to support the heavily traveled trails and roads needed for this project.
  - Open water created by the all-season ice-breaking ferry will prevent locals from traveling across lakes to other villages for visiting relatives and attending gatherings.
  - Locations between Pile Bay and Williamsport are known for their high risk of landslides, heavy avalanches, and summer rock slides.
  - Thawing permafrost has caused deep melting ruts in the tundra from walking and driving. This has caused trails and roads to flood and sink.
- Culturally Important Sites:
  - There are numerous sacred historical sites and allotments in close range of the mine site and proposed transportation corridor.
  - 40 sites have been documented in the proposed mine area; 190 sites will be impacted in all areas of operation.
- Wildlife:
  - Caribou roam and have been hunted where the project infrastructure is planned.
  - Wildlife use frozen lakes for travel. The use of an all-season ice-breaking ferry across Iliamna Lake will affect wildlife crossing in all directions.
  - A population of rare freshwater seals live in Lake Iliamna.
- Birds:
  - The project area is home to over 19 species of shorebirds, with 14 breeding in the area and 33 waterbird species.
- Fish
  - The northern fork of the Koktuli can produce 25 percent of the king salmon used for subsistence food.
  - Increased rain and big storms over the years have caused massive flooding in marshy areas where salmon spawn.
- Geohazards:
  - 5,000 earthquakes have been detected since fall 2018, including those in new locations not previously experiencing such activity. Water funneling down volcano tubes that connect seemingly disconnected lakes and streams have been observed.
  - There have been increased slips deep in the tundra as it thaws out rapidly from climate change and as rain events increase.

### **K3.1.3 Existing Documents**

#### **K3.1.3.1 Environmental Protection Agency Watershed Study**

Appendix D in Volume 2 of the Environmental Protection Agency (EPA) *Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska* is a study of TEK and cultural

characterization in the Nushagak and Kvichak watersheds, conducted by Boraas and Knott (2013). The study was based on interviews in the region. Information from this study that would be considered TEK and pertains to the topics presented in Section 3.1 is listed below.

- Fish:
  - That is spring water [at Kijik]. It does not freeze. That is why you can go over there and get a sockeye salmon in March; it might have a green head, and it is red, but it is still a sockeye salmon. You can go over there on New Year's Day and get a fresh sockeye salmon.
  - But, I think, when they are spawning, that is where they hit the spring waters, where it does not freeze. It is always open, even in the dead of the winter. It is always open; you got to be careful there. Especially up in Lake Clark, around Kijik. It is, man, 30 below zero, and still open water.
  - They are sensitive, very sensitive. If you put something bad in the water the fish will sense it. They will probably not go up the river, they will go somewhere else. If they spawn here and they notice something different they will move to another spot. The fish are very sensitive.
  - For quite a few years there when we were building up the king salmon run we did not even fish in June. It was just to build up those runs. It is kind of ironic that the kings we built up are on the Koktuli River where that mine is going to go. It is almost a whole decade that we sacrificed to build up that run. We built it up and now it might go away.
  - You do not see Bristol Bay having troubles because our ecosystem is whole and not damaged. We are very appreciative of what we have. In relationship to the mine the place I work up here is the Bristol Bay Economic Development Corporation and... one of the companies we bought is Ocean Beauty Seafoods which is one of the largest salmon producers in Alaska. We put up 161 million pounds of commercially caught goods in a year. So I talk to the people and if there is a mine that goes in like pebble and we have copper coming out and affecting our fish, are you interested in buying our fish? These are customers we sell 300-400 thousand pound lots to. No, we are not interested... We do not want ourselves and our kids to eat contaminated foods.
  - They [Salmon] would not go there [where water is contaminated]. They are also very sensitive to temperature. They have a really keen sensory acuity, not only them, but all the critters, all the birds. ...They are so sensitive in every aspect of that word.
- Wildlife:
  - You cannot even get meat like you used to; you cannot even go out hunting for moose or caribou. Nothing is here anymore; everything is disappearing. I know, you know [name] could verify too. There used to be so much caribou, we would see them all over the road, all over the lake, everything.
  - Since the Pebble Mine started their exploration, I speak for everyone around here that we have not had the big caribou herds that come through here anymore.
  - The drill wells are making all the noise. We were over there, my wife and I were over there last spring, and when we went over there to check out the Pebble, there [we] saw three other helicopters right in the same area, and that is lots of traffic. We have not had caribou meat around here ever since. Have not had caribou meat caught here in probably the last 6 years.

- Vegetation:
  - What they used to say, was the first time, when they first moved down to fish camps, then this wild celery, I do not know if you know what that is, but we eat those. They go up on the mountainside and pick lots of that, and then they peel it, they peel the peelings off and we eat the inside part.
- Subsistence Activity Areas:
  - In Easter they went up to Koliganek the next village up. He said people up there caught white fish and pikes. He said the water is good upriver, it is not like down here. I think it is the water that is coming down from up Mulchatna. He thinks it's from them working on that pebble up there [Pebble Mine].
- Culturally Important Areas:
  - There are 10,000 cache pits [at the Kijik archaeological site on Lake Clark] and they are still counting; over 200 houses, which are huge. So it was pretty big.
- Weather and Climate:
  - There is open water all over. They got drilling rigs that are sitting on open water. You cannot walk up there with knee boots you got to have hip boots there is so much water this year. The ground is saturated.

### **K3.1.3.2 Other Reports**

Several other reports were used in developing individual sections. The information is established in these reports; therefore, the data are not listed individually here. These reports include:

- The Environmental Baseline Document Chapter 23, Subsistence, which includes detailed results of a study done by Stephen R. Braund & Associates (SRB&A) in coordination with the Alaska Department of Fish and Game (ADF&G) (SRB&A 2011b). Two major elements of this study were to survey residents and then follow up with interviews. The data (e.g., tables, charts, and maps) used to determine the environmental baseline for Section 3.9, Subsistence, of this EIS reflect the findings of this study. In this way, TEK regarding areas of subsistence use and harvest data are incorporated, which is reflected in pertinent EIS chapters.
- Technical papers developed by the ADF&G in conjunction with universities, tribal organizations, and federal agencies integrate TEK and subsistence use patterns with scientific studies to create a rich body of knowledge for wildlife. The information in these reports was used in the wildlife and subsistence sections. In this way, TEK regarding wildlife and subsistence in the project area are incorporated, which is reflected in pertinent chapters of the EIS.

### **K3.1.4 Cooperating Agencies**

Cooperating agencies review and comment on draft sections of the EIS during development. During that process, some information was presented that would qualify as TEK. Information received pertaining to the topics in Section 3.1, Introduction to Affected Environment, is listed below.

- Cultural Resources:
  - The village site at Amakdedori, cabins and trails, have significant personal and cultural value to a number of individuals in the borough. The old cabins, trails, and village have personal meaning to many who reside in the borough.

### **K3.1.5 Government-to-Government Tribal Consultation**

Information was also collected during government-to-government consultation meetings between USACE and tribes. Comments received that pertain to the topics in Section 3.1, Introduction to Affected Environment, are listed below.

- Wildlife:
  - Participants stated that bears move widely across the region from Amakdedori to the mine site and beyond.
  - The road would cross caribou migration paths. Caribou are coming back to the area; the lichen crop is robust.
  - There have been changes in caribou and moose migration patterns due to disturbances associated with Pebble mine exploratory activities conducted over the last decade.
  - Beluga whales are changing their diets because their typical food is not available for them anymore.
- Weather and Climate:
  - The mine site is in a bowl, with the right wind conditions, noise could be heard from the mine.
- Subsistence Use Areas:
  - Razor clams on the east side of Cook Inlet are declining; a lot of people dig razor clams on the west side, at Amakdedori. Aquatic resources like clams, crab, herring, and shrimp have declined on the east side of Cook Inlet.

### **K3.1.6 National Historic Properties Act Section 106 Consultation**

Information was collected during consultation meetings between USACE and consulting parties for the National Historic Properties Act, Section 106. Comments received that pertain to the topics in Section 3.1, Introduction to Affected Environment, are listed below.

- Fish:
  - They used to see millions of fish, when they were kids, but the management with the ADF&G has changed and there are not as many fish now. They used to go down to Naknek and fish, but they cannot anymore. The fish are decreasing because of the way they managed the sport and commercial fisheries, and because of climate change. Last year the water was too warm and the fish were dying before they could spawn.
  - There are a lot of creeks near Pile Bay that have abundant salmon.
  - In the past year the salmon went up in the beach when the tide is high trying to keep cool. Some people were catching those fish on the beach. But around Iliamna Lake the fish were in the middle of the lake where the glacier water cools. At Pedro Bay the water was 17 degrees warmer than usual. They were diving without drysuits.
  - They are concerned about the initial construction in the Frying Pan drainage—as soon as they take the topsoil off it is pretty marshy. There are a lot of artesian wells in that area, and there are trout that travel underground between ponds (ghostfish).
  - Pike fish are now in Pete Andrews creek, they are invasive and eating the salmon.
  - There is a concern about the contamination of Frying Pan Lake from discharge. They are also concerned potential contamination to the Upper and Lower Talarik

Creeks. There are fish in those creeks now (steelhead, golden-colored lake trout that take on the color of their environment). The water goes from this area through the Chulitna River to Lake Clark.

- There is also the smell of dynamite near the Newhalen River falls. When you put a funny smell in the water, the fish will not go back.
- Wildlife:
  - There used to be caribou, but they ate all their lichen and moved on. They also got some diseases. Lots of people from Anchorage came and hunted, mostly with guides. We believe they were killing the breeding males of the herd. They were also migrating around guiding activities. There are so many factors that determine it; the loss of caribou is not related to the exploration activity.
  - The caribou herd population crashed before Pebble exploration. There was some minor exploration, but by then many of the caribou left. They ate all their food supply and their hooves got wet and diseased. There was a large die-off, they went out on Iliamna Lake and wandered around in circles and died on the lake, hundreds of them. There were just too many of them. But they are coming back, slowly. The lichen is growing because it is warm. They do not think the caribou that are coming back are part of the Mulchatna herd, maybe some other herd. They call them mountain or timber caribou. They are bigger.
  - There were a lot of caribou in the area until Pebble started doing exploration. It was loud and there were vibrations. Also, the sport hunters that came from the lower 48 and Anchorage. It was easy to come into this area. There was poor management. They would only take the antlers and leave the meat. There was also a hoof and mouth disease.
  - There are half a dozen different pathways that the McNeil River bears travel through to this area. Those bears are already habituated to humans because of the tours that go to the refuge. Bears are curious. The bears also like airport lights; they chew them up.
  - Some of the birds do not migrate away anymore, or are not going as far away as they used to. Sometimes when that happens, other species follow, like swans.
  - There used to be a lot of squirrels around here, now they are going farther north.
- Vegetation:
  - Last year it was too warm to get cranberries.
  - It was so warm the last few years that there is grass growing in Iliamna Lake where there should not be. There were big yellow water lilies. The ADF&G was very careful about controlling invasive species, but there are so many other people coming through that invasive species are a concern.
  - The tundra is dead where the Cominco exploration happened.
  - There is an invasive species—elodea.
- Navigation and Transportation
  - At Williamsport, the water depth all depends on the tides. It does not freeze as much in Iniskin Bay either. The Williamsport-Pile Bay road route gets a lot of heavy snow and the terrain is very steep.

## K3.6 COMMERCIAL AND RECREATIONAL FISHERIES

The following tables (Table K3.6-1 through Table K3.6-7) and figures (Figure K3.6-1 through Figure K3.6-2) support Section 3.6, Commercial and Recreational Fisheries.

### K3.6.1 Commercial Fisheries Data

**Table K3.6-1: 2000-2019 20-Year Average Harvest Distribution by Species (Percent)**

Species	Naknek/ Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
Sockeye	97.5	98.8	97.6	89.7	74.0	94.8
Chinook	0.0	0.0	0.0	0.4	0.6	0.1
Coho	0.0	0.2	0.1	0.7	1.7	0.3
Chum	2.3	1.0	2.3	6.8	19.3	3.9
Pink	0.1	0.0	0.0	2.4	4.3	0.9

Note: Percentages may not equal 100 due to rounding.  
Source: ADF&G 2020

**Table K3.6-2: 2000-2019 20-Year Annual Bristol Bay Sockeye Salmon Harvest by District**

	Naknek/ Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
20-Year Min.	1,418,938	2,291,502	480,509	2,663,014	233,743	10,675,713
20-Year Max.	16,531,193	14,683,614	6,630,231	24,230,150	1,018,644	43,023,030
20-Year Median	8,716,327	6,979,009	2,424,145	6,784,561	636,120	28,083,789
20-Year Average	8,433,034	7,190,984	2,871,760	7,915,926	623,378	27,118,129
2000-2009 Average	6,128,962	6,786,535	2,304,287	6,772,146	610,095	22,767,725
2010-2019 Average	10,737,106	7,595,433	3,439,233	9,059,705	636,660	31,468,532

Source: ADF&G 2020

**Table K3.6-3: 2000-2019 Annual Bristol Bay Sockeye Salmon Escapement by District**

	Naknek/ Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
20-Year Min.	2,303,463	927,054	596,332	1,389,975	128,118	6,200,639
20-Year Max.	15,033,216	2,600,982	2,599,186	9,525,486	511,770	22,366,676
20-Year Median	6,795,420	1,290,144	905,584	2,765,440	203,148	12,744,610
20-Year Average	6,773,798	1,428,523	1,078,711	3,274,607	247,104	12,802,743
2000-2009 Average	6,373,567	1,240,460	1,037,830	2,705,570	260,191	11,617,619
2010-2019 Average	7,174,030	1,616,585	1,119,592	3,843,644	234,016	13,987,867

Source: ADF&G 2020

**Table K3.6-4: Inshore<sup>1</sup> Sockeye Salmon Run by River System, 2000-2019, Naknek-Kvichak District (Thousands of Fish)**

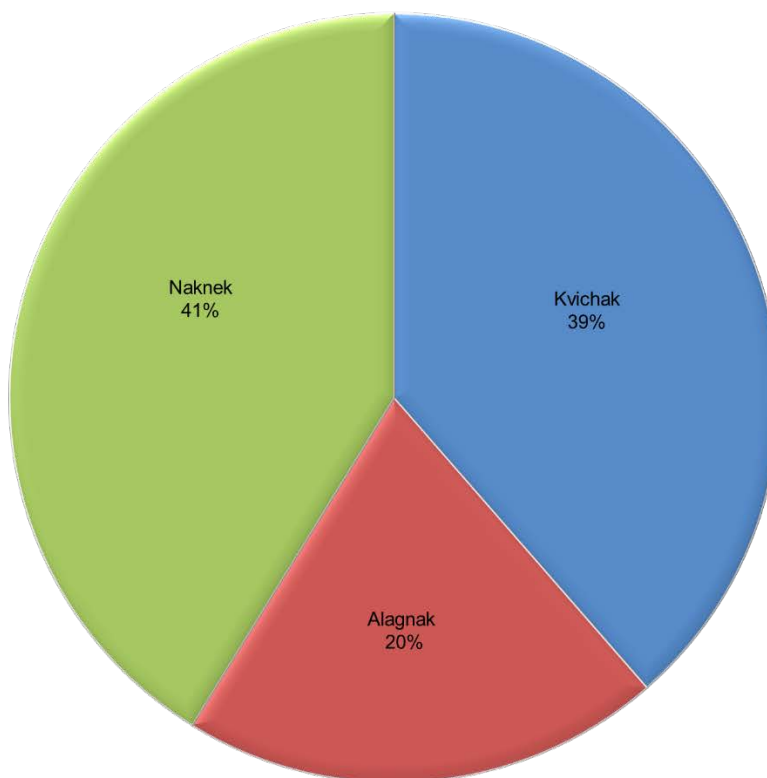
	Kvichak	Alagnak	Naknek	Total
20-Year Min. Run Size	707	335	2,249	3,722
20-Year Max. Run Size	15,470	11,682	13,350	31,572
20-Year Median Run Size	5,776	2,686	5,113	16,035
20-Year Average	6,209	3,352	5,732	16,995
2000-2009 Average	3,867	3,150	5,657	17,443
2010-2019 Average	8,550	3,553	5,806	15,876

Notes: Due to rounding, district total runs may not equal the sum of the rows.

<sup>1</sup>ADF&G uses the term “inshore” to indicate fish from a specific fishery that have returned to that fishery. An inshore Bristol Bay sockeye is one that has returned to the Bristol Bay fishery. There are Bristol Bay sockeye that do not make it back to the fishery because they are intercepted by other fisheries either as part of incidental bycatch (accidental harvest) or because they are caught passing through another salmon fishery area (i.e., Area M). The term acknowledges that some potential returning adult spawners do not make it back to the back and that the inshore run total does not fully represent the productivity of the bay’s river systems. Interception of Bristol Bay sockeye by Area M harvesters has been a contentious issue over the years.

Source: ADF&G 2020

**Figure K3.6-1: Inshore Average Sockeye Salmon Run by River System, 1998-2017, Naknek-Kvichak District**



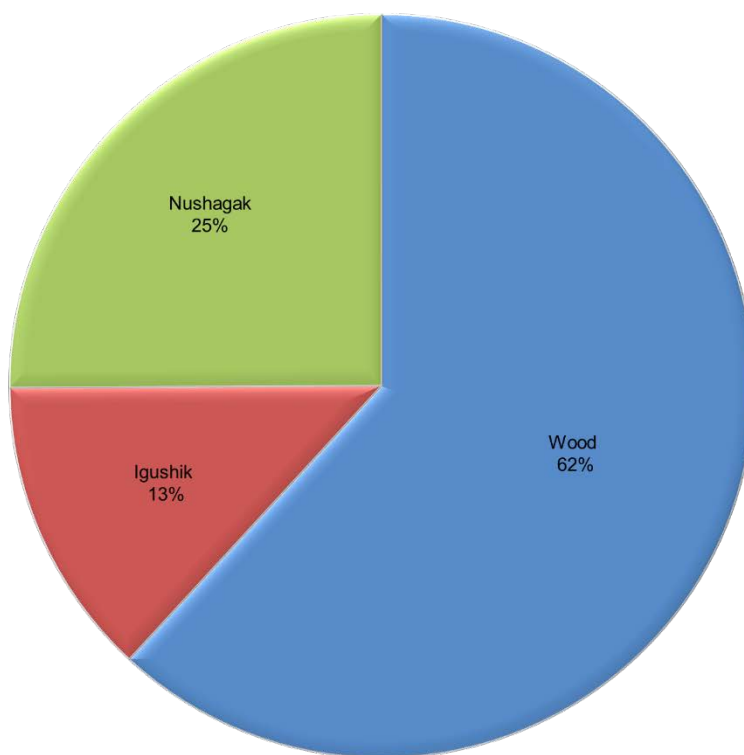
Source: EIS work product produced from ADF&G 2020

**Table K3.6-5: Inshore Sockeye Salmon Run by River System, 2000-2019, Nushagak District  
(Thousands of Fish)**

Year	Wood	Igushik	Nushagak	Total
20-Year Min. Run Size	2,449	207	674	4,055
20-Year Max. Run Size	22,426	2,394	9,425	33,756
20-Year Median Run Size	5,431	1,330	2,321	9,662
20-Year Average	7,008	1,314	2,912	11,236
2000-2009 Average	5,879	1,325	2,186	9,390
2010-2019 Average	8,136	1,303	3,639	13,082

Notes: Due to rounding, district total runs may not equal the sum of the rows.  
Source: ADF&G 2020

**Figure K3.6-2: Inshore Average Sockeye Salmon Run by River System, 2000-2019, Nushagak District**



Source: EIS work product produced from ADF&G 2020

**Table K3.6-6: Comparison of Vessels Used in the Bristol Bay Drift Gillnet Fishery, by Residency of Permit Holder**

	Group	1983	1988	1993	1998	2003	2008
Average age of vessels (years)	Bristol Bay Residents	9	11	14	18	22	26
	Other Alaska Residents	9	11	14	17	21	24
	Residents of Other States	11	12	13	16	20	24
	Average	10	11	14	17	21	25
Average horsepower of vessels	Bristol Bay Residents	239	279	282	294	287	337
	Other Alaska Residents	243	271	315	345	350	373
	Residents of Other States	252	286	335	368	372	382
	Average	245	278	311	366	366	364
Average displacement of vessels (gross tons)	Bristol Bay Residents	10	12	12	12	12	12
	Other Alaska Residents	12	13	13	13	14	15
	Residents of Other States	12	12	13	14	14	14
	Average	11	12	13	13	13	14
Average fuel capacity of vessels (gallons)	Bristol Bay Residents	239	288	292	294	287	299
	Other Alaska Residents	306	334	364	357	357	360
	Residents of Other States	283	311	348	352	350	364
	Average	276	311	331	335	331	341
Percent of vessels with refrigeration capacity	Bristol Bay Residents	0.5%	0.5%	2.3%	4.5%	5.5%	7.7%
	Other Alaska Residents	1.3%	2.3%	7.5%	13.7%	15.3%	20.8%
	Residents of Other States	0.5%	2.0%	8.1%	15.5%	17.8%	22.2%
	Average	0.8%	1.6%	6.0%	11.2%	12.9%	16.9%

Source: NEI 2009

### K3.6.2 Area N, P, S, and T Freshwater Guide Logbook Data

Table K3.6-7 summarizes 2011-2014 data from the Alaska Department of Fish and Game's (ADF&G) Freshwater Guide Logbook program, which requires fishing guides in the state of Alaska to record the location, number of clients, and catch/harvest for every guided trip. Included in Table K3.6-7 is the average number of businesses reporting for a waterbody, the average annual number of trips taken, and the average number of days fished. In addition, the table shows the number of times in the 4-year span that the ADF&G reported program data. For example, Lower Talarik Creek appears in the data for 3 out of 4 years between 2011 and 2014. On average, five businesses reported a total of 16 trips and 48 fishing days per year. Table K3.6-7 highlights (in blue) waterbodies that could be affected by an aspect of the project or by unanticipated releases.

**Table K3.6-7: Comparative Estimates of Sport Fishing Effort, Days**

Waterbody	Average of 2011-2014 Data			
	Appearances in Data (Max = 4)	Businesses Operating	Trips	Days
<b>Area N</b>				
Big River Lakes	4	26	757	2,932
Wolverine Creek mouth (by Big River Lakes)	4	17	500	1,959
Kustatan River	4	28	242	1,027
Crescent Lake	4	17	176	606
Kamishak River	4	8	133	356
Big River	4	8	89	328
Other sites (South of North Forelands)	1	12	61	231
Other lakes and streams	2	7	57	190
Crescent River (Grecian River)	3	9	38	155
Sites south of North Forelands	2	13	47	150
Chuitna River	4	8	26	111
Bachatna Creek	4	8	19	80
Coal Creek (into Beluga Lake)	3	4	18	58
Other sites between North Forelands and Susitna drainage	1	5	11	31
<b>Area P</b>				
Kenai River—Cook Inlet to Soldotna Bridge	4	146	4,449	15,389
Kenai River—Skilak Inlet to Kenai Lake	4	46	2,490	7,673
Kasilof River—below Sterling Highway	4	79	1,825	5,996
Kenai River—Moose River to Skilak outlet	4	94	1,724	5,562
Kenai River—Soldotna Bridge to Moose River	4	56	739	2,376
Kasilof River—above Sterling Highway	4	21	146	478
Russian River	4	11	151	342
Other streams	4	7	64	271
Deep Creek	4	5	44	164
Kenai River—guided, reach not specified	4	11	43	127
Other lakes	4	10	39	117
Anchor River	4	7	52	115
Ninilchik River	1	4	30	111
Quartz Creek	4	9	36	79
Kasilof River—guided, reach not specified	2	6	12	33
Bench Lake (Johnson Trail)	1	5	11	28
Hidden Lake	1	4	7	24

**Table K3.6-7: Comparative Estimates of Sport Fishing Effort, Days**

Waterbody	Average of 2011-2014 Data			
	Appearances in Data (Max = 4)	Businesses Operating	Trips	Days
Afonasi Lake	1	4	4	14
<b>Area S</b>				
Alagnak (Branch) River	4	18	1,292	2,776
Copper River (Iliamna Lake area)	4	11	613	1,466
Kvichak River	4	19	548	1,288
Moraine Creek	4	18	463	1,047
Kulik River	4	12	382	972
Iliamna River	4	7	185	430
Battle River	4	15	94	293
Gibraltar River	4	9	123	289
Kukaklek River (Big Ku) (into Alagnak)	4	9	105	220
Tazimina River	4	6	95	214
Iliamna Lake	4	8	76	223
Nanuktuk Creek	4	13	92	195
Newhalen River	3	9	58	174
Lake Clark	4	12	59	161
Lower Talarik Creek	4	8	55	148
Nonvianuk River (into Alagnak)	4	7	49	108
Funnel Creek	4	9	32	73
Kijik River	4	5	18	60
Little Kulik (into Nanuktuk Creek)	2	6	28	56
Other lakes and streams	3	6	19	52
Upper Talarik Creek	3	5	16	48
Chekok Creek	2	7	19	46
Nonvianuk Lake	1	9	18	38
Kontrashibuna Lake	2	4	12	38
Kijik Lake	3	5	8	27
<b>Area T</b>				
Nushagak River—sonar site to outlet of Mulchatna	4	28	1,153	3,577
Nushagak River—Black Point upstream to Sonar Site	4	21	847	2,513
Togiak River System	3	6	732	1,571
Togiak River and Lake drainage	1	7	707	1,509
Agulowak River	4	6	715	1,355

**Table K3.6-7: Comparative Estimates of Sport Fishing Effort, Days**

Waterbody	Average of 2011-2014 Data			
	Appearances in Data (Max = 4)	Businesses Operating	Trips	Days
Other lakes and streams	2	10	478	992
Other streams	2	7	339	675
Nushagak River—upstream from mouth of Mulchatna River	4	13	352	670
Wood River Lakes system	4	8	293	628
Agulukpak River	4	10	306	586
Mulchatna River	4	6	135	342
Nuyakuk River (Tikchik-Nuyakuk Lake system)	1	12	151	329
Aleknagik Lake	4	6	93	194
Other lakes	2	4	86	168
Nushagak River system (excluding Mulchatna drainage)	2	10	53	143
Wood River	1	7	56	129
Nushagak River System (including Harris Creek and King Salmon River)	1	6	38	119

Note: Blue highlights indicate waterbodies that could be affected by an aspect of the project or by unanticipated releases.

Source: Sigurdsson and Powers 2012, 2013, 2014; Powers and Sigurdsson 2016

## K3.7 CULTURAL RESOURCES

The EIS analysis area for cultural resources consists of the following:

- At the mine site, the EIS analysis area is the project footprint for direct effects, and the area within 3 miles of the outer extent of the footprint for indirect effects.
- For other features outside the mine site, excluding the natural gas pipeline in Cook Inlet and Iliamna Lake, the EIS analysis area is the construction footprint for direct effects, and the area within 1 mile of the footprint for indirect effects. These features include the transportation corridors, ferry terminals, port facilities, mooring spreads, navigational aids, onshore portions of the natural gas pipeline, and the natural gas compressor station.
- For the natural gas pipeline in Cook Inlet and Iliamna Lake, the EIS analysis area is the construction footprint of the natural gas pipeline for direct effects, and the width of the anchor spread (i.e., the area where anchoring of the pipe laying barges may occur) for indirect effects. The width of the anchor spread would be variable; the maximum anchor spread width would be 4,101 feet on each side of the pipeline. The maximum total width of the anchor spread would be 8,225 feet.

### K3.7.1 Alaska Heritage Resource Survey (AHRs) Sites

There are 67 known AHRs sites in the EIS analysis area, described below in Table K3.7-1. Select notes from Stephen R. Braund & Associates (SRB&A) reports (SRB&A 2015a) are included in brackets.

**Table K3.7-1: Known AHRs Locations in the EIS Analysis Area**

AHRs No.	Site Name	Summarized Description <sup>1</sup>	Period
ILI-0001	Pedro Bay Site	Site consisting of the surface indications of five semi-subterranean house structures and four subterranean fish storage pits on 25' high ridge projecting some 250 yards north from the base of Pedro Mountain. Four of the houses have two unequally sized rooms connected by short tunnels, all five have entry passages. Townsend excavated here between 1960 and 1967, producing indications of at least two components. The upper component (AD 1750-1800) relates to the, apparently Tanaina, surface features and the lower component (BC 2358 & BC 2370) materials resemble Ocean Bay I and Ocean Bay II artifacts. A third component may also be present.	Prehistoric
ILI-00005	Dutton	Mining camp named for G.W. Dutton who was its first postmaster in 1905. The post office was discontinued in 1909. A 1 1/2-story, gable roofed, wood frame structure (possibly the post office/residence) was still standing in August 1988. Some structural damage had occurred to one wall, but the wood throughout the rest of the structure appeared to be with little or no rot.	Historic
ILI-00006	Chekok	Eskimo village, now abandoned, listed in the 1880 census as "Chikak," with a population of 51. Townsend saw three house pits, two of which were surface and one which was semi-subterranean, in 1960.	Historic

**Table K3.7-1: Known AHRS Locations in the EIS Analysis Area**

AHRS No.	Site Name	Summarized Description <sup>1</sup>	Period
ILI-00008	Old Kakhonak, Kakonak, Kokhanok	Eskimo village, with a population of 28, listed in the 1890 census. The site was apparently abandoned as residents moved to the present village during the 1940-1950s. Yarborough, in two surveys, noted two or three graves, upright poles from an apparent cache, the remains of a 4m x 5m log cabin, a 2m x 1.1m x .6m deep depression, and a shallow 2m x 5m rectangular feature.	Historic
ILI-00010	Old Iliamna	Eskimo village reported by Petroff as "Ilyamna" in the 1880 Census; about 1935 the residents moved to a new location. Teben'kov (1852) noted an "Odinochka" at this location. It has been reported that the site consists of a church, burial ground, and 20-30 house remains; and that the last Native residents moved to Pile Bay in 1936.	Historic
ILI-00012	Bear Creek Site	A minimum of 12 semi-subterranean houses and several cache pits were located on two river terraces above Bear Creek, along the southern base of a large esker ridge. Most of the houses were single room structures, an average 10' x 10' in size, although at least two were double room structures. All have entry tunnels, and some deep houses have rotted foundation logs. [There is some discrepancy in the site location, which was shown to Townsend by Leonard McMillan of Iliamna. A sketch added to a USGS map by Townsend, indicates a location in SEC.6, SEC.7, T5S, R33W, SM (D6); a location plotted on the original AHRS map indicated a location in SEC.18, T4S, R32W, SM (D5); Townsend's written description gives the approximate location now used.]	Prehistoric
ILI-00015	ILI-00015	Archaeological site with cultural material present.	Prehistoric
ILI-00019	Zip Creek	Three house depressions, one of which was a double house. On a grassy hill slope on the west shore of the creek. Area is about 50 yards x 50 yards. Two other grassy areas of this hill may have sites also, possibly fish camps.	Prehistoric
ILI-00021	Lonesome Bay Village	Former Native village in an estimated 5 acre clearing.	Prehistoric
ILI-00022	St Nicholas Chapel, Pedro Bay	This 1890 chapel is one of the few to retain its excellent original lines with no obvious alterations. Of hewn-log construction, the main portion forms a 15' square with an adjunct that forms the altar end being in the form of a truncated (five-sided) octagon. There is a gable roof over the square portion and a modified hip roof over the octagonal space. There is a shed vestibule. The roof is shingled and has two crosses. [NATREG] St Nicholas Chapel in the village of Pedro Bay at the eastern end of Lake Iliamna on the Alaska Peninsula was built in 1890. The rectangular building consists of a 15' square nave with a gable roof and a five-sided octagonal altar area with a hip roof. There is a small shed roof vestibule at the W of the structure. The log structure is covered with tar paper on the S side. The shingled roof houses two unadorned crosses, the larger one at the center of the roof and the lesser one at the W end of the ridge line.	Historic

**Table K3.7-1: Known AHRS Locations in the EIS Analysis Area**

AHRS No.	Site Name	Summarized Description <sup>1</sup>	Period
ILI-00025	Saint Peter and Paul Chapel, Kakhonak	Russian Orthodox church built about 1940. Consists of a 25'-6" x 15' nave and sanctuary and an attached 8'-1" x 9'-2" vestibule. The exterior is shingle and corrugated metal. A 2011 survey by THRC stated that the condition of the church was "dilapidated" and a new church has been built (1984) to the SE. [NATREG] Russian Orthodox Church built about 1940. Consists of a 25'6"x 15' nave and sanctuary and an attached 8'1"x 9'2" vestibule. The exterior is shingle and corrugated metal.	Historic
ILI-00026	ILI-00026	Two slightly semi-subterranean houses in the trees. Although not tested, the houses are believed to be slightly later than those at ILI-001 and ILI-003.	Historic
ILI-00027	White Rock Site	Three large, single room, slightly semi-subterranean house on a ridge above a dry marsh. One house was partially excavated by Townsend in 1969. The site apparently equates in time with ILI-003. Yarborough noted that the site consists of two house pits and six cache pits on a south sloping ridge between two small streams. Both of the house pits have only a single room and only the smaller has an obvious entry way. The larger depression, the southern third of which Townsend excavated, measures 7.4m x 6.5m x .6-.7m deep (two possible entryways were later noted in its west wall). The other, smaller and shallower, depression measures 4.3m x 3.5m, with a 1.1m wide entry. Five of the six cache pits are rectangular to almost square, while the sixth is nearly round. They range in size from 1.35m x .9m to 3.2m x 3m and are .45-1m deep. The largest may be the feature that Townsend counted as a house pit.	Historic
ILI-00032	Knutson Bay	Townsend reported that four to five houses were located at the head of Knutson Bay, within a quarter of a mile of each other. Three of them are on the trail behind the house of Mr. Fred Blayden. Three of the houses in the area were single room surface dwellings, measuring 20' x 20'. The other two are double room, semi-subterranean structures; the larger room measures 20' x 20', the smaller room measures 10' x 10'.	
ILI-00043	Iliamna Mission, Iliamna Village	Abandoned site of a Russian Orthodox church identified on USS No. 893 (1908). Villagers moved to Pedro Bay 1940-1941.	Historic
ILI-00044	Amakdedori Village	Village site consisting of five house pits of two rooms each, with connecting passages and five smaller square pits. All are located on the second and third vegetated beach ridges, which are being eroded by the creek. Testing of two house features by Reger (1980) identified historic artifacts and floor deposits dating to AD 1883-1912.	Prehistoric
ILI-00047	ILI-00047	Yarborough located six cache pits on the west shore of a salmon spawning pond, just south of the road right-of-way. The pits are oval to rectangular in shape, and measure from .9m x .8m x .5m deep to 2.1m x 1.8m x 1m deep.	Prehistoric
ILI-00048	ILI-00048	Yarborough located a total of three house pits and five cache pits within the originally proposed road right-of-way, 320' southwest of runway station 11+13. The houses measured 3.9m x 3.7m x .5-1.1m deep, 3.2m x 2m x .4m deep, and 2.9m x 2.6m x .4-.6m deep. The cache pits measured from 2.4m x 2m x .55-.6m deep to .83m x .55m x .55-.8m deep.	Prehistoric

**Table K3.7-1: Known AHRS Locations in the EIS Analysis Area**

AHRS No.	Site Name	Summarized Description <sup>1</sup>	Period
ILI-00049	ILI-00049	Yarborough located four large multi-room house pits and five cache pits surrounded by a fairly thick growth of black spruce and alders. House 1 has a 7m x 5m main room, a 3.5m x 3m room off its east wall, and an entry way in its west wall. House 2 has a 9 m x 7 m main room, a 3 m x 2 m room to the east, and a 4 m x 3 m room at its northwest corner. House 3 has a 7m x 6m main room, a 3m x 4m room off its southwest wall, and an entry way in its northwest wall. House 4 has a 7m x 6m main room, a 3.5m x 3m room off its west wall, and an entry way in the east wall. Two small round cache pits are adjacent to House 2; three larger rectangular cache pits were noted adjacent to House 3, adjacent to House 2, and between House 1 and House 2. A test in the center of House 1 revealed an approx. 20cm thick layer of charcoal and fire cracked rock, with some animal bone, under 9cm of humus and 4cm of ash. [DOE] Site ILI-049 consists of four large, multi-roomed house pits and several smaller cache pits.	Prehistoric
ILI-00050	ILI-00050	Yarborough located a single house pit and two possible cache pits within the right-of-way of the proposed runway. The house measured about 4m x 4m x 1m deep. The feature is within what appeared to be an old stream channel. Although two tests failed to yield cultural material, Yarborough was confident that this was a house pit, as the walls are almost vertical and the depression is deeper than the rest of the channel.	Prehistoric
ILI-00052	AC Point		
ILI-00056	Gibraltar Lake Village	BIA investigators noted some 12-15 house pits within a 70m x 120m site area on the north bank of the outlet of Gibraltar Lake. The pits, which are poorly defined, appear to cluster on two adjacent mounds, separated by about 45m. A shovel test in the westernmost loci revealed cultural material (beneath the sod and a thin layer of Katmai Ash) consisting of burnt bone, charcoal, and fire cracked rock in a sandy silt matrix, to a depth of about 75cm. A single basalt flake was noted and a C14 date of BP 860+/-60 was obtained.	Prehistoric
ILI-00057	Hanak Site	BIA investigators noted one or two house pits and several small cache pits on the northwestern shore of this large lake. Three 50cm x 50cm subsurface tests, excavated to a depth of 5-60 cm, revealed only a possible organic staining about 15 cm below the surface. The site apparently postdates the 1912 Katmai Ash.	Historic
ILI-00117	FAA Building 400, Flight Service Station	Building #400 was a frame building containing 941' sq. ft. No further description is currently available. In 2002, the building was no longer present when Larry Pederson (Bristol Environmental) visited the airport. [DOE] This frame building was built in 1944. It contains 961 sq ft. It is located approx 3 miles W of the main station known as Iliamna Station.	Historic
ILI-00126	Henry Olympic Allotment Cemetery on Kakhonak Bay	Site consists of a small cemetery containing three graves, all marked with Russian Orthodox crosses. One of the coffins was eroding out of the ground. No other archaeological remains were located on the property.	Historic
ILI-00127	Pottery and Stone Beads Eroding Out	No description.	No data

**Table K3.7-1: Known AHRS Locations in the EIS Analysis Area**

AHRS No.	Site Name	Summarized Description <sup>1</sup>	Period
ILI-00131	Iliamna River Bridge	Built around 1934, this bridge originally spanned Eagle River, north of Anchorage. It was relocated in 1946 to its present location on the Williamsport to Pile Bay Road. The bridge is a Stratton standard riveted steel through truss, with timber decking plank. The bridge measures 180' long by 12' wide. It is enclosed by steel girders with an opening 11'8" high by 12' wide. Most recent bridge repairs were done in 1997. A temporary bridge was built alongside the original in 2003.	Historic
ILI-00132	Williamsport to Pile Bay Road	The Williamsport to Pile Bay Road is a 1 lane, 15.5 mi. seasonal road that provided the shortest surface route for six communities around Iliamna Lake. The road follows a traditional Den'aina Athabascan trail portage over the Chigmit Mountains and was originally built in the 1930's by the Alaska Road Commission. By 1932, the road supported small truck traffic. With the installment of the Iliamna River Bridge in 1946, the portage terminus changed from the Iliamna River at Foss's Landing to Pile Bay at Lake Iliamna. Lyle and Carl Williams subsequently began a truck freighting business, with Lyle at Pile Bay and Carl at Williamsport. The road expansion combined with the Williams' freighting operations provided an opportunity that allowed boats direct overland access to Lake Iliamna and Bristol Bay. Carl took the first Bristol Bay fishing boat over the Portage around 1938. [DOE] The road follows a traditional Dena'ina Athabaskan trail portage over the Chigmit Mountains. Near the summit the dirt road is less than 11' wide with a 750' drop. Improvements began in 1917 to the trail. In 1937 the W terminus of the road was rerouted to Pile Bay. The road is now one lane, 15.5 miles long, used seasonally. [Note: National Register Eligible]	Historic
ILI-00135	ILI-00135	The site consists of a single large cache pit on a prominent bluff immediately E of a stream. The stream supports a large spawning population of sockeyes. The cache pit is roughly square, 3.5m x 3.5m and 1.25m in depth. Tests conducted inside and adjacent to the pit were all negative. The pit contained approx. of Katmai Ash, so its excavation predates 1912. The ash appears to have been compressed so it is possible that the pit was also in use after 1912. [DOE] Site is a large square depression. It has a depth of approx. 1.25 m and a width of 3.5 m. Single test inside pit revealed approx. of Katmai ash beginning at a depth of 10cm below ground surface and excavated to a depth of 50cm with no cultural material recovered.	Prehistoric, Historic
ILI-00185	ILI-00185	Site consists of a hearth and lithics in a widened niche formed in the crack of a massive colluvially deposited stone mass as the base of the Back Range. A 2" thick charcoal stained layer was located 21" below surface. The surrounding matrix was cube shaped decomposed bedrock and silt. A granite adze or wedge (from locally available granite) and a burin (from non-local bedrock) were located in the test unit. The charcoal was dated to BP 1560+/-80 (Beta 208530).	Prehistoric

**Table K3.7-1: Known AHRS Locations in the EIS Analysis Area**

AHRS No.	Site Name	Summarized Description <sup>1</sup>	Period
ILI-00186	ILI-00186	Site consists of a lens hearth surrounded by stones. The center of the hearth was a light gray ash with a lens of black charcoal and stained soil above and below the ash. The fire pit was level with the surrounding ground indicating the hearth was dug into the ground. A charcoal sample was AMS dated to BP 430+/-40 (Beta 208531). Site may have other buried cultural materials, as it is above an easily accessible shingle beach near a well known halibut fishing "hole".	Prehistoric
ILI-00196	ILI-00196	Site consists of an isolated artifact located on an alluvial fan next to a stream bed. It appears to be a biface reduction flake made of gray chert. Intensive testing of the surrounding area failed to locate further cultural material. No gray chert source material was located nearby.	Prehistoric
ILI-00197	O'Hara House	This rectangular, front-gabled home is 1-, or perhaps 1 1/2 stories (photos show an upper story, or loft, within the roof), built in the early 1950s. It was built from lumber milled locally by Carl Williams, as well as from lumber collected from a house that had been demolished in the late 1940s or early 1950s. The earlier residence was built in the early 1940s by Lyle Williams, just N of where the O'Hara house is now. A depression and some scattered debris (bottles, cans) are the only remnants on the property. Although there are no dimensions given on the BIA site inventory record, the provided photos show the O'Hara house to be approximately 20' x 24'. The exterior is sided with green, mineral surfaced roll roofing over 1x6 shiplap. A door is in both the north and S elevations. A window is next to the door in the S elevation, though not in the N elevation, though there is a window in both N and S gable ends. The E and W elevations both have 2 windows. All windows seem to be 3 over 3 sash. In 2007 the native allotment was scheduled to be sold and the building possibly demolished. [DOE] This is a rectangular, wood frame, one and a half story building that measures 23'x 17'2", with 4"x 6" timbers laid directly on grade. The exterior walls are horizontal 1"x 6.5"-8" planking butted together with sawdust insulation and cellotex on the interior walls. On the E, S and W exterior walls rolled roofing material covers the lumber. The gable roof is covered with rolled roofing material. Roof rafters are spaced 24" on center and range in size from 1.5"-2" wide x 6" deep. The chamfered ends overhang 16" on the E and W elevation. On the S elevation there is a door and two fixed six paned windows, one to the left of the door and the other in the gable peak. A on grade plank platform measuring 6'6"x 5' is in front of the door. A frame dog house with wood shingle roof is attached to the SW corner of the house. In both the E and W elevation are two fixed six pane windows. The N elevation has a door and a window in the gable end and the remains of a shed roofed covered entry.	Historic
ILI-00198	Pile Bay Townsite Historic District	N/A	Historic
ILI-00199	Antenna	The site consists of a 4" diameter iron pipe erected by Carl Williams and used as the base of his HF radio antenna. The antenna wire originally strung between pipes is no longer present. In 2007 the pipe was erect and well supported by tight guy wires.	Historic

**Table K3.7-1: Known AHRS Locations in the EIS Analysis Area**

AHRS No.	Site Name	Summarized Description <sup>1</sup>	Period
ILI-00200	Powerplant	Power plant built by Jack Vantrease in the early 1950s. In 2007 it was located adjacent to the Vantrease warehouse/store but was originally erected across the portage road from Seversen's warehouse. It was skidded to the present location circa 1957 and used to provide electricity to the Vantrease buildings. The structure is a frame building covered with corrugated metal sheets. It measures 8' x 16.5' and rests on large wood beams laid on grade. The rear wall is hinged, it opens and swings down to form a ramp.	Historic
ILI-00211		Referencing USS 7804, the BIA crew located a 6.71m x 4.57m depression on an E-W axis. The maximum depth of the depression is approx. 1.8 m. The berms are well defined and overgrown with grasses, moss and shrubs. Four well developed trees are present within the depression. On the E side of the depression, two 55-gal drums are 3/4 buried and upon inspection, hints of a possible entrance way to the cabin. Debris is scattered around the premises. Tin can, plastic shelving, and fuel cans were identified. Remnants of a prefabricated aluminum storage building/shed measuring 2.44m x 3.05m were adjacent to the depression on the N side. The underlying organic mat of sod was removed before the shed was place on the surface. Two wall are intact but failing. The interior contained failed roof panels and cut wood.	Historic
ILI-00212	Rock Stack and Circle Site	A 1 meter diameter circle of cobbles with a very large cobble in the center. The rocks appear to be larger and rounder than the rocks in the surrounding area, which are fractured and heavily covered with black lichen. Nearby (50m) is a collapsed stack of similar stones.	Prehistoric
ILI-00214	Wiggly Lake Camp 2	This site consists of two rock features, a deposit of rifle cartridges of two different calibers, and some antler and bone pieces. The fire ring is a circle nearly a meter in diameter with a line of rocks bisecting the circle down the center. Some burned material was visible beneath the rocks. Nearby to the southeast was an area with numerous cartridges including .223, .338 and 7mm magnum rounds and a tent ring about 12 feet in diameter consisting of 5-8 cobbles resting on the surface of the tundra. Possible stakes made from antler and bone fragments are also nearby. [In 2012, SRB&A conducted subsurface testing at the site and did not locate any subsurface cultural material.]	Unknown
ILI-00215	Wiggly Lake Camp 3	The site consists of a ring of cobbles approx. 12' in diameter on the surface of the tundra. [SRB&A recorded this site in 2008 as a ring of cobbles that measured approximately 12 feet in diameter. When SRB&A revisited the site in 2012, the field crew mapped in the identified faunal remains, a hearth, and rifle cartridges and mapped these features using a Trimble GPS, and conducted multiple subsurface tests in the area. The field crew did not relocate the ring of cobbles. None of the subsurface tests in 2012 produced any cultural material.]	Unknown
ILI-00216	Wiggly Lake Camp 4	This site consists of a 20' diameter ring of large cobbles on a flat stretch of tundra. Nearby were [sic.] several sets of caribou antlers. Associated surface finds included some food wrappers, water and oil bottles, and stakes made from antler and bone.	Unknown
ILI-00217	Wiggly Lake Camp 5	This site is a relatively large camp that includes a tent ring approximately 20 feet in diameter consisting of large cobbles. A plastic water container with bear bite marks, a kerosene can, a	Historic, Modern

**Table K3.7-1: Known AHRS Locations in the EIS Analysis Area**

AHRS No.	Site Name	Summarized Description <sup>1</sup>	Period
		firewood stockpile and a stacked pile of caribou antlers were found below the esker on a flat area of tussock tundra. Nearby on the tussock flats a horseshoe pitch with horseshoes and rebar pins were found. A few fire pits were on the flats toward the lake in tussock tundra.  [SRB&A relocated the site in 2012 and mapped it with a Trimble GPS. Multiple subsurface tests were conducted, all of which were negative for cultural materials. However, personal communication with the makers of the horseshoes, Regent Sports Corporation, allowed SRB&A to determine that the set of horseshoes identified were made during the 1960s.]	
ILI-00218	Isolated Lithic Find	This site consisted of one possible microblade or blade core. The core was found on the surface of the tundra. No other lithics were found on the surface or in test pits excavated nearby.	Prehistoric
ILI-00226	ILI-00226	Site consists of lithic debitage recovered from a subsurface context. Two shovel tests yielded 13 flakes, cultural material was 0-20cm below surface. SRB&A has begun processing a bulk hearth sample collected from the 2009 testing. Processing of the bulk sample has yielded small bone fragments, one flake, and burned botanical remains.	Prehistoric
ILI-00240	ILI-00240	Site is prominent bedrock knoll that rises approx 2-5m above the surrounding tundra. There is a steep SE face, which is obscured by woody shrub vegetation and protects the knoll from prevailing winds. The knoll has exposed bedrock of a friable fine grained flysch with fracture zones filled with a variety of forms of quartz, from clear quartz crystal to opaque or milky white material, and chalcedony geodes. SRBA found no manufactured tools or debitage on the surface or in three subsurface tests excavated on the outcrop, however, the site has good potential as a raw material source and as such the distribution of unused materials on the surface may reflect the selective use of the materials made by prehistoric users. One fragment resembled a possible tool in form but was left in situ.	
ILI-00241	ILI-00241	Site is a prominent knoll with bedrock outcroppings with veins of quartz and chalcedony. This site is smaller than the similar site ILI-00240, with two outcrop mounds surrounded by an area of bare bedrock. The knoll is surrounded by a litter of quartz fragments including clear, milky, and fractured pieces. This distribution of material may indicate that the site had been used by prehistoric toolmakers, with the fragments examined and the unusable ones discarded.	Unknown
ILI-00244	ARC Camp	ARC CAMP ADJACENT TO WILLIAMSPORT-PILE BAY ROAD	Historic

**Table K3.7-1: Known AHRS Locations in the EIS Analysis Area**

AHRS No.	Site Name	Summarized Description <sup>1</sup>	Period
ILI-00247	Williamsport Historical Occupation/Land Use Area	Cultural remains located at Williamsport on the Williams family property include the former cement foundation of Carl Williams' home. A modern cabin has been built on the 1940s cement foundation, although three sides of the foundation are still visible. The original foundation is estimated to have been about 20 ft X 20 ft. Also present are the remains of the log cabin lived in by Ed McCammet and later by the Williams family. It is possible that this log cabin was once the ARC cabin at Williamsport, given that Ed McCammet was reported to have lived in the ARC cabin. The cabin has collapsed and the remaining timbers are largely embedded in river sediments and gravels and in poor condition. A gravesite is also present. The property currently contains gravel roadpads, numerous storage and staging areas, and a standing building.	Historic
ILI-00251	ILI-00251	Site consists of two flakes of green silicified mudstone on an eroded blowout surface. One flake is blade-like. The location is an excellent hunting area as game trails run in the bottom of the canyon. The canyon below the site is the choke point for entry to the G Valley, which cuts through the mountain roughly NNE to SSW with a pass leading to the South Fork Koktuli from the North Fork Koktuli and broad areas of relatively shallow sloped well vegetated land in the valley. In 2013, archaeologists from Stephen R. Braund & Associates (SRB&A) returned to the site and conducted subsurface testing to identify additional cultural material and define the boundaries of the site. SRB&A excavated 17 shovel tests at regular intervals across the landform away from the terrace edge. None of the subsurface tests were positive.	Prehistoric
ILI-00254	ILI-00254	ILI-00254 is a modern to historic winter fur trapping camp located in a cottonwood patch on the south side of Groundhog Mountain along a tributary of Upper Talarik Creek. The creek drains a lake higher up on the mountain which is located in a steep walled canyon. The site consists of two square flat areas that were leveled out to approximately the size of a 10x10 foot wall tent, with the downhill area cut into the root bed of a large cottonwood tree. The uphill area was leveled with less cutting into the soil. Near these tent footprints, cottonwood tree limbs were removed with an axe in the past while one tree in the patch had an axe cut blaze on it to indicate where the camp was. On the surface was a well rusted steel round gasoline can with a Chevron logo still visible where it lay. Local person indicated that the site probably belonged to either "Butchy" Hobson or one of the Koktelash family from Nondalton and was a winter fur hunting camp at least 30 years in age.	Historic
ILI-00258	Cemetery Along Newhalen Road	Recorded as "Old Gravesite" on 2003 DCED aerial. The location of a marked graveyard with 6 likely graves was verified during a recent field survey of the Newhalen Road. Most of the graves are marked with lath crosses and have no name or date. The most recent marked grave is dated 1971.	
ILI-00260	ILI-00260	Site is on top of a moraine at the outlet of Frying Pan Lake and consists of 54 pieces of lithic debitage and a carbon sample from between 0 and 5 cm below surface in one subsurface test. Three other subsurface tests on the landform did not reveal additional cultural materials. The moraine is oriented E to W and is bounded by a draw on its N side, a creek valley on its S and the lake outlet which flows perpendicular to the moraine at its E end. The moraine slopes uphill to the W, culminating in a knoll before merging with the lower slope of Kaskanak Mountain. The position of the moraine	Prehistoric

**Table K3.7-1: Known AHRS Locations in the EIS Analysis Area**

AHRS No.	Site Name	Summarized Description <sup>1</sup>	Period
		and knoll with its view of Frying Pan Lake and the lake valley suggest the site was used as a hunting lookout. In 2013, archaeologists from SRB&A returned to ILI-00260 to conduct subsurface testing to better define the site boundaries. SRB&A excavated 12 shovel tests, none of which were positive for cultural material.	
ILI-00261	ILI-00261	Site is on a glacial ridge. The ground surface is up to 50 percent exposed till and gravel. The cultural materials at the site consists of one piece of lithic debitage observed on the surface among the gravel. Two subsurface tests conducted on the ridge did not result in the identification of a subsurface component at the site.	Prehistoric
ILI-00262	Kokhanok Bia School	The building is currently a single-story frame building measuring 68ft x 18ft in plan, a ridgeline at 11ft and a very low-slope roof, with a satellite dish abutting the W facade. Built ca. 1957 the Kokhanok BIA building served as a school from the late 1950s into at least the 1980s. The building contains basic attributes found in some period BIA schools in Alaska, but has undergone substantial alterations since 1973. Comparison of the 1973 building with the current makes evident an addition built on to the original N end as well as the removal of some of the original fenestration and removal of the original siding. The building currently houses administrative offices.	Historic
ILI-00269	PGCO4 2012-3	On the slope of a small ridge, this feature consists of a collection of cobbles. These cobbles are stacked in a semi-circular pattern with the opening facing down-slope to the N. The view shed is comprised of the valley with one of the Talarik's tributaries. The stones appear to have been settled for at least 20 years.	Unknown
ILI-00291	Agram Shipwreck	On October 12, 1923 at 8:45 am the wooden gas screw cannery tender Agram was washed ashore and became a total wreck on a beach between Chinik Bay and Amakdedori Native Village. [...] According to Doug Reger, who surveyed this stretch of the coast in 1980, no shipwreck remains were visible beyond the large amount of debris on Amakdedori beach, which is known for drift debris. The ship's remains may still be present below the waterline, although the high energy environment has likely compromised the wreck's structural integrity.  References: U S Customs Wreck Report; The H W McCurdy Marine History of the Pacific Northwest (1966), p. 344; "Wrecked tars live on weird edibles" The Helena Daily Independent, November 24, 1923, p.2.	Historic

**Table K3.7-1: Known AHRS Locations in the EIS Analysis Area**

AHRS No.	Site Name	Summarized Description <sup>1</sup>	Period
ILI-00292	Okalena Tretikoff Cabin Site	ILI-00292 consists of the remains of the Okalena Tretikoff Cabin Site, a hunting, fishing and trapping camp used by the allottee from 1951 through at least 1970. These remains include the footprints of three structures. The largest feature (F-2) is roughly a 12' x 12' square and consists of a raised berm, the only possible structural debris present consists of cut and flattened gas cans. A box stove was also found inside the structural footprint. This was most likely a single-roomed structure. There is an 8.5' x 8.5' square berm (F-1), with no associated structural debris. Based on the Native allotment field report (US BLM 1975), Feature-1 was likely the "cellar of some sort" observed by Don Whyde during the his 1974 field visit. F-3 is the footprint of a much smaller structure, approximately 7' x 5' and rectangular. 6" wide sill logs are preserved, but the footprint is completely overgrown by small trees. This is most likely the remains of a shed or other outbuilding. There are also five cache pits present, some of which contain glass jars and rusted cans.	Historic
ILI-00293	ILI-00293	"Fire ring" exposed by private landowner during original clearing for garden, reported to have been under "several feet of soil". Current landowner reported that the area was protected and now supports a re-vegetated stand of spruce trees on the S side of the existing garden area (which at the time of reporting had been present for 20+ years). Additional clearing in the area did not expose further material. [Reported in 2015 through NRCS consultation for a high tunnel that would cover the garden area.]	No data
ILI-00295	ILI-00295	HDR-AMK-01 is a prehistoric lithic scatter located approximately 160 meters west of the shoreline of Cook Inlet. The site consists of two secondary flakes 60 meters apart, in an area of eroded dune formations. Artifact 1 is a white to opaque cryptocrystalline silicate (CCS) secondary flake measuring 3.4 centimeters (cm) long by 3.3 cm wide, and 0.7 cm thick. Artifact 2 is also a secondary flake, is composed of light brown fine grained volcanic rock, and is located 60 meters northeast of Artifact. Artifact 2 measures 6.0 cm long by 4.8 cm wide, and 0.4 cm thick (Figure 3). Both artifacts were left in their originally identified locations.	Prehistoric
ILI-00296	Knutson Creek Cache Pits	The site consists of six cultural depressions, which are likely cache pits, arrayed across a broad terrace approximately 15?? above the creek level. These features are arranged in a semi-circle, extending from the terrace edge above Knutson Creek to the base of the slope to the east. This well drained terrace is about 20 to 25 feet above the creek and is covered with spruce and birch forest. The features are small, averaging 1.0 by 1.2 m in size and 30 cm deep. Four sub-surface tests were excavated at this site, with three in the depressions and one in an adjacent area for comparison of deposits. No artifacts were found within these tests, although Features 2 and 3 did contain disturbed sediments and charcoal. Charcoal samples were collected for possible analysis	Prehistoric

**Table K3.7-1: Known AHRS Locations in the EIS Analysis Area**

AHRS No.	Site Name	Summarized Description <sup>1</sup>	Period
ILI-00299	West Gibraltar Site	West Gibraltar Site is a multicomponent subsurface archaeological site discovered in 2019 on a prominent terrace overlooking the Gibraltar River to the east, approximately 2.4 miles upstream from the mouth of the river at Iliamna Lake. Lithic cultural materials and organic samples were recovered from at least two separate stratigraphic layers. Among the recovered items are numerous pieces of debitage representing several different lithic material types, organic/carbon samples, bone fragments (mostly fish), and sediment samples. The terrace on which the site is located represents the first constriction of the landscape on the course of the river upstream from the mouth; downstream from this point, the river meanders across a half-mile wide flood plain that would have been inundated to form a large bay during higher lake levels of the past. The West Gibraltar Site may have functioned as a lookout over this bay/valley in tandem with fish camps and residential sites in the vicinity, including directly east across the river where potential house and cache depressions have been reported and observed on remotely sensed imagery (LiDAR).	Prehistoric
ILI-00300	East Gibraltar Site	The East Gibraltar Site is a subsurface archaeological site on the lowest and youngest of two terraces rising above the Gibraltar River. The site consists of a single cobble net weight that was recovered from a subsurface (shovel) test; several other subsurface tests in the vicinity failed to produce additional cultural materials, but concurrent testing of a higher landform on the opposite (west) side of the river resulted in the identification of an extensive, multicomponent subsurface lithic site (West Gibraltar Site). The artifact may also be associated with potential cultural depressions reported and observed on remotely sensed imagery (LiDAR) on a higher terrace to the east. The terrace on which the artifact was recovered is approximately 10m above the current river level and is the first such terrace above the water in a narrow section of the river valley. The constriction here may have made the location favorable to stringing nets across the water to collect spawning salmon which are still seasonally available in the river.	Prehistoric
ILI-00301	Eagle Bay Site	Eagle Bay Site is a subsurface archaeological site on a peninsula between Eagle Bay and Iliamna Lake. The site is situated along the edge of a narrow relict lake terrace on the north/bay-side of the peninsula; several other relict terraces are evident at different heights above the current lake level around the peninsula. The site landform is ~4m above the current lake level and is the first obvious terrace above the active beach terrace, indicating that the site landform was the beach terrace prior to the most recent drop in lake level. Beach sediments (e.g. rounded pea gravel and sand) at the bottom of subsurface tests along the landform support this interpretation. Cultural material at the site consists of debitage from at least two varieties of chert recovered from two subsurface tests excavated close to the terrain break of the terrace. The landform was tested systematically at 10m intervals originating from the two positive shovel tests, but no other subsurface cultural material was identified. Some of the higher elevation terraces on the peninsula near the site landform contained modern hunting debris but were not tested for subsurface materials. The site is close to travel routes and subsistence use areas identified in interviews with knowledgeable local residents.	Prehistoric

**Table K3.7-1: Known AHRS Locations in the EIS Analysis Area**

AHRS No.	Site Name	Summarized Description <sup>1</sup>	Period
ILI-00302	East Newhalen Site	The East Newhalen Site is a multicomponent subsurface and surface site discovered in August 2019. The site contains two stratigraphically distinct subsurface prehistoric components and one historic surface component that occupy a terrace on the east/southeast side of the Newhalen River. Cultural materials at the site consist of lithic debitage and tool fragments, undecorated fragments of sand-tempered ceramics, fire cracked rock, a possible subsurface hearth, as well as multiple charcoal and ash features that may or may not be cultural. Lithic artifacts include over 100 waste flakes, blade-like flake fragments, and possible formal bifacial tool fragments. A single unmodified historic 'Blazo' fuel can was also identified on the site's surface. The site terrace stands out as one of the few level areas along this section of the river which is otherwise flanked by a steep hill. Although level relative to the adjoining slope, the surface of the site terrace is covered in large natural hummocks and deep, narrow swales that may be obscuring cultural features such as cache pits. A well-worn trail follows the edge of the terrace and may be associated with a historic trail identified during interviews with knowledgeable residents. The site is also within one mile of dozens of other interview-identified historic trails, camps, meeting spots, and subsistence use areas that may be associated with the site.	Prehistoric
ILI-00303	West Newhalen Site	SRB&A field investigations at the West Newhalen River Crossing (2 acres) began in August 2019 with pedestrian survey along east-west trending transect lines across the entire APE. Numerous saw-cut spruce tree stumps in various stages of decomposition were identified throughout the survey area, suggesting it has been a popular place to gather firewood for some time. Metal detector transects and subsurface testing at the base of the bluff identified a multi-component archaeological site (SRBA1-Site 4 / ILI-00303) consisting of an upper historic component made up of the remains of a hunting camp underlain by a prehistoric component consisting of lithic debris. Delineation of the site was completed on a return trip in September. In total, SRB&A excavated four shovel tests within the West Newhalen River Crossing area, one of which was positive for cultural materials. [PLP 2019-RFI 117a]	
ILI-00304	West Newhalen Site 2	Subsurface archaeological site with two potential components and surface features that may be cultural in origin. Two positive test pits revealed lithic debitage and formal tools, including a small bifacial implement, which appears to be a projectile point similar to those of the Brooks Gravels Phase of the Naknak River.	
ILI-00305	West Newhalen Site 3	Subsurface archaeological site consisting of a single large flake recovered from a shovel test. Subsequent testing around the initial positive test did not yield additional cultural material.	Prehistoric
ILI-00306	East Newhalen Site 2	Subsurface archaeological sites with variety of lithic material types, fire-cracked rock, and possible hearth feature(s).	Prehistoric
SEL-00164	Clabo Midden Site	This site consists of blue mussel shell midden with charcoal, some bone, and massive stone mauls. The midden is in the Clabo garden. No surface features were seen and no testing was done. The site area would have been covered with Sitka Spruce before clearing.	Prehistoric

**Table K3.7-1: Known AHRs Locations in the EIS Analysis Area**

AHRs No.	Site Name	Summarized Description <sup>1</sup>	Period
SEL-00368	Whiskey Gulch Site 1	During a survey of a high probability zone near Whiskey Gulch a total of five shovel tests were carried out in a localized undisturbed area within a gently-sloping landform on a coastal bluff. One shovel test was positive revealing possible flaked stone artifacts at a depth of approx. 63cm BS. This included a bipolar flake (with a crushed distal platform) and a possible core fragment.	Prehistoric
SEL-00379	Sterling Highway	The Sterling Highway is approximately 138 miles long and runs from the Seward Highway to the end of the Homer Spit. The highway is owned by the Alaska DOT&PF and is located within the Kenai Peninsula Borough. From the eastern terminus at Mile 36.495 on the Seward Highway, the Sterling Highway runs west through a portion of the Chugach National Forest and continues through the community of Sterling and the city of Soldotna, where it provides access to the Kenai Spur Highway leading to Kenai and Nikiski. The Sterling Highway then runs south, approximately parallel to the western coastline of the peninsula and the Cook Inlet, providing access to Kasilof and passing through the communities of Ninilchik and Anchor Point before terminating in Homer at the ferry terminal located at the end of a 5-mile sand spit. Construction began in 1947 and the highway was formally opened to the public in 1950. (A portion of the Sterling Highway designated as Interstate Highway System is under the Interstate Exemption [2005] and is exempt from Section 106 Review.)	Historic

Notes: <sup>1</sup>Descriptions of known sites as provided are verbatim from the AHRs database and have not been edited.

BIA = Bureau of Indian Affairs

ca = circa

cm = centimeter(s)

DOT&PF = Department of Transportation & Public Facilities

ft = foot/feet

gal = gallon(s)

GPS = global positioning system

HF = hi-fi (high fidelity)

m = meter(s)

mi = mile(s)

mm = millimeters

N/A = not available

Source: SBR&A 2011a, 2015a; AHRs 2019, PLP 2019-RFI 117a

Known AHRs sites that would be in the EIS analysis area for each alternative and component are shown below in Table K3.7-2. Sites that would be in the footprint of the project are shown in **bold**. Alternative variants are shown in *italics*.

**Table K3.7-2: AHRs Sites in the EIS Analysis Area for all Alternatives**

AHRs No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
ILI-0001				North Access Road Natural Gas Pipeline
ILI-00005			Natural Gas Pipeline	Natural Gas Pipeline
ILI-00006			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
ILI-00008	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
ILI-00010			Port Access Road	
ILI-00012	Natural Gas Pipeline			

**Table K3.7-2: AHRS Sites in the EIS Analysis Area for all Alternatives**

AHRS No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
ILI-00015	Natural Gas Pipeline			
ILI-00019			Port Access Road	
ILI-00021			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
ILI-00022			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
ILI-00025		<i>Kokhanok East Ferry Terminal Variant</i>		
ILI-00026			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
ILI-00027			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
ILI-00032			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
ILI-00043			Port Access Road Natural Gas Pipeline	North Access Road Natural Gas Pipeline
ILI-00044	Port Access Road Amakdedori Port Natural Gas Pipeline	Port Access Road Amakdedori Port Natural Gas Pipeline		
ILI-00047			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
ILI-00048			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
ILI-00049			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
ILI-00050			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
ILI-00052				Diamond Point Port
ILI-00056	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
ILI-00057			Port Access Road	North Access Road Natural Gas Pipeline
ILI-00117	Natural Gas Pipeline			
ILI-00126		<i>Kokhanok East Ferry Terminal Variant</i>		
ILI-00127		<i>Kokhanok East Ferry Terminal Variant</i>		
ILI-00131			Port Access Road Natural Gas Pipeline	North Access Road Natural Gas Pipeline
ILI-00132			<b>Port Access Road Natural Gas Pipeline</b>	<b>North Access Road Natural Gas Pipeline</b> Diamond Point Port
ILI-00135			Natural Gas Pipeline	North Access Road Natural Gas Pipeline

**Table K3.7-2: AHRS Sites in the EIS Analysis Area for all Alternatives**

AHRS No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
ILI-00185				North Access Road Natural Gas Pipeline
ILI-00186				North Access Road Natural Gas Pipeline
ILI-00196	Mine Site	Mine Site	Mine Site	Mine Site
ILI-00197			Port Access Road	
ILI-00198			Port Access Road Natural Gas Pipeline	
ILI-00199			Port Access Road Natural Gas Pipeline	
ILI-00200			Port Access Road Natural Gas Pipeline	
ILI-00211	Mine Access Road Natural Gas Pipeline		Mine Access Road	
ILI-00212	Mine Site	Mine Site	Mine Site	Mine Site
ILI-00214	Mine Site	Mine Site	Mine Site	Mine Site
ILI-00215	Mine Site	Mine Site	Mine Site	Mine Site
ILI-00216	Mine Site	Mine Site	Mine Site	Mine Site
ILI-00217	Mine Site	Mine Site	Mine Site	Mine Site
ILI-00218	<b>Mine Site</b> Mine Access Road Natural Gas Pipeline	<b>Mine Site</b> Mine Access Road Natural Gas Pipeline	<b>Mine Site</b> Mine Access Road Natural Gas Pipeline	<b>Mine Site</b> North Access Road Natural Gas Pipeline
ILI-00226	Mine Access Road Natural Gas Pipeline		Mine Access Road	North Access Road Natural Gas Pipeline
ILI-00240	Mine Site	Mine Site	Mine Site	Mine Site
ILI-00241	Mine Access Road Natural Gas Pipeline	Mine Access Road Natural Gas Pipeline	Mine Access Road	North Access Road Natural Gas Pipeline
ILI-00244			Port Access Road	North Access Road Natural Gas Pipeline
ILI-00247			Port Access Road	North Access Road Diamond Point Port Natural Gas Pipeline
ILI-00251	<b>Mine Site</b>	<b>Mine Site</b>	<b>Mine Site</b>	<b>Mine Site</b>
ILI-00254	Mine Site	Mine Site	Mine Site	Mine Site
ILI-00258	Natural Gas Pipeline			
ILI-00260	Mine Site	Mine Site	Mine Site	Mine Site
ILI-00261	Mine Access Road Natural Gas Pipeline	Mine Access Road Natural Gas Pipeline	Mine Access Road	North Access Road Natural Gas Pipeline
ILI-00262		<i>Kokhanok East Ferry Terminal Variant</i>		
ILI-00269	Mine Site Mine Access Road Natural Gas Pipeline	Mine Site Mine Access Road Natural Gas Pipeline	Mine Site Mine Access Road	Mine Site North Access Road Natural Gas Pipeline

**Table K3.7-2: AHRS Sites in the EIS Analysis Area for all Alternatives**

AHRS No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
ILI-00291	Amakdedori Port Natural Gas Pipeline			
ILI-00292	Natural Gas Pipeline			
ILI-00293			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
ILI-00295	Port Access Road Amakdedori Port Natural Gas Pipeline	Port Access Road Amakdedori Port Natural Gas Pipeline		
ILI-00296			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
ILI-00299	<b>Port Access Road Natural Gas Pipeline</b>	<b>Port Access Road Natural Gas Pipeline</b>		
ILI-00300	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
ILI-00301	Mine Access Road Natural Gas Pipeline		Mine Access Road	
ILI-00302			<i>Newhalen River North Crossing Variant</i>	North Access Road Natural Gas Pipeline
ILI-00303	Mine Access Road Natural Gas Pipeline		Mine Access Road	North Access Road Natural Gas Pipeline
ILI-00304	Mine Access Road Natural Gas Pipeline		Mine Access Road	North Access Road Natural Gas Pipeline
ILI-00305	Mine Access Road Natural Gas Pipeline		Mine Access Road	<b>North Access Road Natural Gas Pipeline</b>
ILI-00306	Mine Access Road Natural Gas Pipeline		Mine Access Road	<b>North Access Road Natural Gas Pipeline</b>
SEL-00164	Natural Gas Pipeline	Natural Gas Pipeline	Natural Gas Pipeline	Natural Gas Pipeline
SEL-00368	Natural Gas Pipeline	Natural Gas Pipeline	Natural Gas Pipeline	Natural Gas Pipeline
SEL-00379	Natural Gas Pipeline	Natural Gas Pipeline	Natural Gas Pipeline	Natural Gas Pipeline

Source: AHRS 2019

### K3.7.2 Place Names

There are 56 place names identified in the EIS analysis area, by SRB&A for the Environmental Baseline Document for the project, and submitted as public comments, which are described below in Table K3.7-3.

**Table K3.7-3: Known Place Names in the EIS Analysis Area**

Place Name No.	Native Place Name	Place Description	English Translation
PLA-001	<i>Vak'ent'esi Vena</i>	Frying Pan Lake	"frying pan lake"
PLA-002	<i>Vak'ent'esi Vena Q'estsiq'</i>	Outlet of Frying Pan Lake	"outlet of the lake"
PLA-003	<i>Nughil Vetnu</i>	Newhalen River	"flows downstream"

**Table K3.7-3: Known Place Names in the EIS Analysis Area**

Place Name No.	Native Place Name	Place Description	English Translation
PLA-004	<i>Tuni Vetnu TI'ughu</i>	Head of Upper Talarik Creek	"rainbow trout stream"
PLA-005	<i>Eseni Dghil'u Hdakaq'</i>	Mouth of Upper Talarik Creek	"mouth of stream"
PLA-006	<i>Yutsi Qilant</i>	Knutson Bay	"lower place"
PLA-007	<i>Tsayehtnu</i>	Pile River	"cliff river"
PLA-008	<i>Nilavena Hkaytaghi'u</i>	Iliamna Bay	"islands lake bay"
PLA-009	<i>Vighutiztin Q'atl'a</i>	Lonesome Bay	"trail goes along it bay"
PLA-010	<i>Qanintin</i>	Pedro Bay Mountain	"ridge against a place"
PLA-011	<i>Hkayitaggi'u</i>	Cottonwood Bay	"bay"
PLA-012	<i>Nitkintl'udalyuyi Vena</i>	Dumbbell Lake	"ends-joined-together lakes"
PLA-013	<i>Qeghqidun</i>	Big Chutes	"tunnel goes through"
PLA-014	<i>Ch'q'ayna Qudghijaq'</i>	Mountain up Iliamna River	"children ran up"
PLA-015	<i>Ch'ak'elyashtnu</i>	Chinkelyes River	"things-are-carried-out river"
PLA-016	<i>Duntsih</i>	Iliamna Lake lowlands (II); lowlands south of Lake Clark (I)	"toward the water"
PLA-017	<i>K'emeq' Ka'ahtnu</i>	Eagle Bay Creek	"big-spawning-pond creek"
PLA-018	<i>Ggis Nuqelahitnu</i>	Bear Creek	"celery-is-customarily-there creek"
PLA-019	<i>Nughil Vetnu Nudghiten</i>	Lower Rapids on Newhalen River	[none given]
PLA-020	<i>Niqanch'qentdelt</i>	Landing on Newhalen River	"where we go ashore"
PLA-021	<i>Utcha Dghil'u</i>	Roadhouse Mountain	"Alutiiq mountain"
PLA-022	<i>Chixtnu</i>	Canyon Creek	"ochre creek"
PLA-023	<i>Hunqet'unhtnu</i>	Chekok Creek	"he-takes-his-time creek"
PLA-024	<i>Yutsi Dghil'u, Yutsi Qilan</i>	Knutson Mountain, Knudsen Mountain	"by-water mountain"
PLA-025	<i>Yutsi Qilantnu</i>	Knutson River	"place-by-the-water creek"
PLA-026	<i>Gulul Vena</i>	Long Lake	"Gulul (personal name) lake"
PLA-027	<i>Tuni Vetnu</i>	Upper and Lower Talarik Creeks	"rainbow trout stream"
PLA-028	<i>Qiyhi Qelahi, Qiyhi Dghil'u</i>	Groundhog Mountain	"marmot mountain"
PLA-029	<i>Taq' Nust'in (Dghil'u)</i>	Mountain west of Newhalen River	"extends in lowlands (mountain)"
PLA-030	<i>Dzel Ggez</i>	Pass on Iliamna Bay Portage	"mountain gap"
PLA-031	<i>Esdghuk'a T'el'ih</i>	Diamond Point in Iliamna Bay	"where cockles are gathered"
PLA-032	<i>Ch'ak'dalitnu, Nuch'ak'dalitnu</i>	Old Iliamna Village and Iliamna River	"flows-out-river"
PLA-033	<i>Tunaghelggy</i>	Stream into Chinkelyes River	"white water"
PLA-034	<i>Ch'ank'elyash Vena</i>	Lower Summit Lake	"things are carried out lake"
PLA-035	<i>Unqeghnit Ch'ank'elyash Vena</i>	Upper Summit Lake	"upstream things are carried out lake"

**Table K3.7-3: Known Place Names in the EIS Analysis Area**

Place Name No.	Native Place Name	Place Description	English Translation
PLA-036	<i>Ch'ank'elyashtnu Tustes</i>	Pass at Chinkelyes Creek along Iliamna Portage	"things are carried out river pass"
PLA-037	<i>Qahetldildet Tustes</i>	Pass at Iniskin Bay Portage	"where sleds are driven down pass"
PLA-038	<i>Qahetldildet</i>	Williams Creek	"where sleds are driven down"
PLA-039	<i>Hał Q'a</i>	Trail Head on Iliamna Bay	"pack place"
PLA-040	<i>Nik'unadghezhi Kiyiq'</i>	Diamond Point	"rough one that goes out point"
PLA-041	<i>Qaqelchixt</i>	Arc Mountain	"built against place"
PLA-042	<i>Qaqelchixtnu</i>	Stream off mountain northwest of South Head into Cottonwood Bay	"built against place stream"
PLA-043	<i>Vanilnagh</i>	Fishing area on Iliamna River north of bridge	"hooked in it"
PLA-044	<i>Chu Vena</i>	Zip Lake	"beaver lake"
PLA-045	<i>Jegh Vena</i>	Lake east of Pike Lake and north of Iliamna River and Old Iliamna	"ear lake"
PLA-046	<i>Chu Vena Q'estsiq'</i>	Outlet of Zip Lake	"beaver lake outlet"
PLA-047	<i>Venkda</i>	Small lake south of bridge on Iliamna River	"poor lake"
PLA-048	<i>Tus Nuch'k'elyasht</i>	Iliamna Portage to Cook Inlet	"pass where we carry things back"
PLA-049	<i>Łach Nelłtutl'</i>	Bank across Iliamna River from Old Iliamna	"soil breaks off"
PLA-050	<i>Łiq'a T'el'ihntnu</i>	Stream into Iliamna River from the South near Old Iliamna	"fish are gathered river, salmon are gathered stream"
PLA-051	<i>Nik'unadghezhi</i>	Mountain peak north of Diamond Point	"rough one that goes out"
PLA-052	<i>Vighuk'di'ushi</i>	Mountain in Chigmit Mountains	"object that is carried along it"
PLA-053 <sup>1</sup>	<i>Nila Vena / Nanvarpak</i>	Iliamna Lake	"islands lake," "big lake"
PLA-054 <sup>1</sup>	<i>K'emeq' Ka'a</i>	Eagle Bay	"big spawning pond"
PLA-055 <sup>1</sup>	<i>K'emeq' Ka'a Hni'a</i>	Eagle Bay Island	"big spawning pond point"
PLA-056 <sup>2</sup>	<i>Amaktatuli</i>	Amakdedori	"the place to carry things over"

Notes:

All place names provided by SBR&A 2019a unless otherwise noted.

<sup>1</sup> Data source is Evanoff 2010.

<sup>2</sup> Data source is IVC 2019.

Known place names that would be in the EIS analysis area for each alternative and component are shown below in Table K3.7-4. Place names that would be in the footprint of the project are shown in **bold**. Alternative variants are shown in *italics*. The research conducted by SRB&A did not include areas south of Iliamna Lake; therefore, information is not provided for those areas.

**Table K3.7-4: Place Names in the EIS Alternatives**

Place Name No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
PLA-001	<b>Mine Site</b>	<b>Mine Site</b>	<b>Mine Site</b>	<b>Mine Site</b>
PLA-002	Mine Site	Mine Site	Mine Site	Mine Site
PLA-003	<b>Mine Access Road<sup>1</sup></b> <b>Natural Gas Pipeline<sup>1</sup></b>	<b>Mine Access Road<sup>1</sup></b> <b>Natural Gas Pipeline<sup>1</sup></b>	<b>Mine Access Road<sup>1</sup></b> <b>Natural Gas Pipeline<sup>1</sup></b>	<b>North Access Road<sup>1</sup></b> <b>Natural Gas Pipeline<sup>1</sup></b>
PLA-004	<b>Mine Site</b> Mine Access Road Natural Gas Pipeline	<b>Mine Site</b> Mine Access Road Natural Gas Pipeline	<b>Mine Site</b> Mine Access Road Natural Gas Pipeline	<b>Mine Site</b> North Access Road Natural Gas Pipeline
PLA-005	Mine Site <sup>1</sup> <b>Mine Access Road<sup>1</sup></b> <b>Natural Gas Pipeline<sup>1</sup></b>	Mine Site <sup>1</sup> <b>Mine Access Road<sup>1</sup></b> <b>Natural Gas Pipeline<sup>1</sup></b>	Mine Site <sup>1</sup> <b>Mine Access Road<sup>1</sup></b> <b>Natural Gas Pipeline<sup>1</sup></b>	Mine Site <sup>1</sup> <b>North Access Road<sup>1</sup></b> <b>Natural Gas Pipeline<sup>1</sup></b>
PLA-006			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
PLA-007			<b>Port Access Road<sup>1</sup></b> <b>Natural Gas Pipeline<sup>1</sup></b>	<b>North Access Road<sup>1</sup></b> <b>Natural Gas Pipeline<sup>1</sup></b>
PLA-008			<b>Port Access Road<sup>1</sup></b> <b>Diamond Point Port<sup>1</sup></b> Natural Gas Pipeline	<b>North Access Road<sup>1</sup></b> <b>Diamond Point Port<sup>1</sup></b> Natural Gas Pipeline
PLA-009			Port Access Road Natural Gas Pipeline	North Access Road Natural Gas Pipeline
PLA-010			<b>Natural Gas Pipeline</b>	<b>North Access Road</b> <b>Natural Gas Pipeline</b>
PLA-011			Port Access Road <sup>1</sup> <b>Diamond Point Port<sup>1</sup></b> <b>Natural Gas Pipeline<sup>1</sup></b>	North Access Road <sup>1</sup> Diamond Point Port <sup>1</sup> <b>Natural Gas Pipeline<sup>1</sup></b>
PLA-012			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
PLA-013			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
PLA-014			Port Access Road	North Access Road Natural Gas Pipeline
PLA-015			<b>Port Access Road<sup>1</sup></b>	<b>North Access Road<sup>1</sup></b> <b>Natural Gas Pipeline<sup>1</sup></b>
PLA-016	Mine Access Road Natural Gas Pipeline		Mine Access Road Natural Gas Pipeline	North Access Road Natural Gas Pipeline
PLA-017	<b>Mine Access Road<sup>1</sup></b> <b>Natural Gas Pipeline<sup>1</sup></b>		<b>Mine Access Road<sup>1</sup></b> <b>Natural Gas Pipeline<sup>1</sup></b>	<b>North Access Road<sup>1</sup></b> <b>Natural Gas Pipeline<sup>1</sup></b>
PLA-018	Mine Access Road <sup>1</sup> Natural Gas Pipeline <sup>1</sup>		Mine Access Road <sup>1</sup> Natural Gas Pipeline <sup>1</sup>	North Access Road <sup>1</sup> Natural Gas Pipeline <sup>1</sup>
PLA-019		Mine Access Road Natural Gas Pipeline <sup>1</sup>		
PLA-020		Mine Access Road Natural Gas Pipeline <sup>1</sup>		
PLA-021	Mine Access Road <sup>1</sup> Natural Gas Pipeline <sup>1</sup>		Mine Access Road <sup>1</sup> Natural Gas Pipeline <sup>1</sup>	North Access Road <sup>1</sup> Natural Gas Pipeline <sup>1</sup>

**Table K3.7-4: Place Names in the EIS Alternatives**

Place Name No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
PLA-022			Natural Gas Pipeline <sup>1</sup>	North Access Road <sup>1</sup> Natural Gas Pipeline <sup>1</sup>
PLA-023			Natural Gas Pipeline <sup>1</sup>	North Access Road <sup>1</sup> Natural Gas Pipeline <sup>1</sup>
PLA-024			Natural Gas Pipeline <sup>1</sup>	North Access Road <sup>1</sup> Natural Gas Pipeline <sup>1</sup>
PLA-025			Natural Gas Pipeline <sup>1</sup>	North Access Road <sup>1</sup> Natural Gas Pipeline <sup>1</sup>
PLA-026			Natural Gas Pipeline <sup>1</sup>	North Access Road <sup>1</sup> Natural Gas Pipeline <sup>1</sup>
PLA-027		Mine Access Road Natural Gas Pipeline		
PLA-028	Mine Site <sup>1</sup>	Mine Site <sup>1</sup>	Mine Site <sup>1</sup>	Mine Site <sup>1</sup>
PLA-029	Mine Access Road <sup>1</sup>	Mine Access Road <sup>1</sup>	Mine Access Road <sup>1</sup>	North Access Road <sup>1</sup> Natural Gas Pipeline <sup>1</sup>
PLA-030			Port Access Road Natural Gas Pipeline	North Access Road Natural Gas Pipeline
PLA-031			Port Access Road Diamond Point Port Natural Gas Pipeline	North Access Road Diamond Point Port Natural Gas Pipeline
PLA-032			Port Access Road Natural Gas Pipeline	North Access Road Natural Gas Pipeline
PLA-033			Port Access Road Natural Gas Pipeline	North Access Road Natural Gas Pipeline
PLA-034			Port Access Road Natural Gas Pipeline	North Access Road Natural Gas Pipeline
PLA-035			Port Access Road Natural Gas Pipeline	North Access Road Natural Gas Pipeline
PLA-036			Port Access Road <sup>1</sup> Natural Gas Pipeline <sup>1</sup>	North Access Road <sup>1</sup> Natural Gas Pipeline <sup>1</sup>
PLA-037			Port Access Road <sup>1</sup> Natural Gas Pipeline <sup>1</sup>	North Access Road <sup>1</sup> Diamond Point Port <sup>1</sup> Natural Gas Pipeline <sup>1</sup>
PLA-038			Port Access Road <sup>1</sup> Natural Gas Pipeline <sup>1</sup>	North Access Road <sup>1</sup> Diamond Point Port Natural Gas Pipeline <sup>1</sup>
PLA-039			Port Access Road Natural Gas Pipeline	North Access Road Diamond Point Port Natural Gas Pipeline
PLA-040			Port Access Road Diamond Point Port <sup>1</sup> Natural Gas Pipeline <sup>1</sup>	North Access Road Diamond Point Port Natural Gas Pipeline <sup>1</sup>

**Table K3.7-4: Place Names in the EIS Alternatives**

Place Name No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
PLA-041			Port Access Road <sup>1</sup> Diamond Point Port <sup>1</sup> Natural Gas Pipeline <sup>1</sup>	Diamond Point Port <sup>1</sup> Natural Gas Pipeline <sup>1</sup>
PLA-042			Diamond Point Port	Diamond Point Port Natural Gas Pipeline
PLA-043			Port Access Road Natural Gas Pipeline	North Access Road Natural Gas Pipeline
PLA-044			Port Access Road Natural Gas Pipeline	North Access Road Natural Gas Pipeline
PLA-045			Port Access Road Natural Gas Pipeline	
PLA-046			Port Access Road Natural Gas Pipeline	North Access Road <sup>1</sup> Natural Gas Pipeline <sup>1</sup>
PLA-047			Port Access Road Natural Gas Pipeline	North Access Road Natural Gas Pipeline
PLA-048			<b>Port Access Road<sup>1</sup></b> <b>Natural Gas Pipeline<sup>1</sup></b>	<b>North Access Road<sup>1</sup></b> <b>Natural Gas Pipeline<sup>1</sup></b>
PLA-049			Port Access Road Natural Gas Pipeline	North Access Road Natural Gas Pipeline
PLA-050			Port Access Road Natural Gas Pipeline	North Access Road Natural Gas Pipeline
PLA-051			Port Access Road <sup>1</sup> Diamond Point Port <sup>1</sup> Natural Gas Pipeline <sup>1</sup>	North Access Road <sup>1</sup> Diamond Point Port <sup>1</sup> Natural Gas Pipeline <sup>1</sup>
PLA-052			Port Access Road <sup>1</sup> Natural Gas Pipeline <sup>1</sup>	North Access Road <sup>1</sup> Natural Gas Pipeline <sup>1</sup>
PLA-053	<b>Ferry Route Natural Gas Pipeline</b>	<b>Ferry Route Natural Gas Pipeline</b>	<b>Ferry Route Natural Gas Pipeline</b>	
PLA-054	<b>Eagle Bay Ferry Terminal</b>		<b>Eagle Bay Ferry Terminal</b>	
PLA-055	Eagle Bay Ferry Terminal		Eagle Bay Ferry Terminal	
PLA-056	<b>Amakdedori Port Transportation Corridor</b>	<b>Amakdedori Port Transportation Corridor</b>		

Notes: <sup>1</sup>GIS location not in the EIS analysis area, but geographic feature represented by place name location extends into the EIS analysis area

Sources: SRB&A 2019a, Evanoff 2010, IVC 2019

### K3.7.3 Interview-Identified Cultural Resources

There are 246 interview-identified cultural resources identified in the EIS analysis area, identified by SRB&A for the Environmental Baseline Document for the project, which are described below in Table K3.7-5.

**Table K3.7-5: Interview-Identified Cultural Resources in the EIS Analysis Area**

IICR No.	Cultural Resource Type	Feature Type Description
IICR-0001	Trail/Route	Community Routes: Iliamna winter/dog team traditional travel routes to access Mulchatna and Sharp Mountain trapping grounds
IICR-0002	Trail/Route	Horse/dog team trail from Iliamna to Williamsport
IICR-0003	Trail/Route	Trail from Iliamna to the Landing on the Newhalen River
IICR-0004	Trapline	Iliamna trapline south of Roadhouse Mountain
IICR-0005	Cabin	Cabin on Newhalen River near Horseshoe Lake
IICR-0006	Cabin	Collapsed Cabin on Upper Talarik Creek associated with Nick Olympic
IICR-0007	Cabin; Grave/Burial	Cabin and graves near base of Roadhouse Mountain
IICR-0008	Cabin	Cabins near Pile Bay
IICR-0009	Historic Objects	Old piece of heavy equipment on beach in Eagle Bay
IICR-0010	Material Source	Water well at individual's house drilled in 1985
IICR-0011	Village	Old village and cabins at "Goose Bay" near Hedlunds
IICR-0012	Historic Objects	Cairn located along travel route between Williamsport and Iliamna
IICR-0013	Grave/Burial; Village; Archaeological Site	Village and burials inland on Young's Creek (near Chekok bay)
IICR-0014	Harvest Location/Traditional Use Area	Traditional hunting and trapping area near Groundhog Mountain
IICR-0015	Harvest Location/Traditional Use Area	Traditional caribou hunting area near Frying Pan Lake
IICR-0016	Harvest Location/Traditional Use Area	Traditional moose and caribou hunting area along Upper Talarik Creek
IICR-0017	Harvest Location/Traditional Use Area	Traditional use area for eggs, berry picking, and picnicking on Eagle Bay Islands
IICR-0018	Grave/Burial; Village; Archaeological Site	Old village and burials inland along Canyon Creek
IICR-0019	Trapline	Traditional trapping area north of Iliamna
IICR-0020	Cabin; Other Historic Structures	Cabin/reindeer station in Eagle Bay associated with Ignatia Delkittie
IICR-0021	Trail/Route	Kokhanok water routes across Iliamna Lake
IICR-0022	Grave/Burial	Burials between Kokhanok and Old Kokhanok
IICR-0023	Grave/Burial; Other Historic Structures	New Kokhanok Church and burials by lake at base of hill in Kokhanok
IICR-0024	Camp	Old fish camp south of Foldagers
IICR-0025	Grave/Burial	Burials east of old fish camp south of Foldagers
IICR-0026	Other Historic Structures	Reindeer corral on Reindeer Island
IICR-0027	Trapline	Trapline from Kokhanok to Kokhanok Bay via Kokhanok Lake and Copper River
IICR-0028	Trapline	Trapline from Kokhanok to Seven Sisters loop via Fennie's Camp
IICR-0029	Trapline	Trapline at Amakdedori associated with John Olympic

**Table K3.7-5: Interview-Identified Cultural Resources in the EIS Analysis Area**

IICR No.	Cultural Resource Type	Feature Type Description
IICR-0030	Cabin; Grave/Burial	Graves and associated cabin at mouth of Upper Talarik Creek
IICR-0031	Village	Modern village of Kokhanok
IICR-0032	Grave/Burial	Modern Kokhanok cemetery
IICR-0033	Cabin	Cabin near Upper Talarik Creek
IICR-0034	Grave/Burial	Burials west of Gibraltar River across from Fish Camp
IICR-0035	Camp	Red fish camp located on the north side of Gibraltar Lake
IICR-0036	Places with Legends or Beings	Kokhanok hairy man sighting
IICR-0037	Grave/Burial	Burial near Kokhanok Airport
IICR-0038	Place to Avoid/Spooky Place	Place where voices can be heard along creek near Kokhanok
IICR-0039	Other Historic Structures	Tundra landing strip by Foldagers
IICR-0040	Camp	Subsistence camps on the northern side of Gibraltar Lake
IICR-0041	Other Historic Structures; Place to Avoid/Spooky Place	Scary Quonset hut located near Kokhanok
IICR-0042	Grave/Burial	Burials west of Kokhanok
IICR-0043	Grave/Burial	Burials west of Kokhanok
IICR-0044	Places with Legends or Beings	White Big Foot sighting
IICR-0045	Places with Legends or Beings	Giant Fish in Iliamna Lake
IICR-0046	Cabin; Camp	Camp on Reindeer Bay with associated houses, smokehouses, and steam baths
IICR-0047	Camp	Fish camp on Reindeer Bay
IICR-0048	Cabin	Cabin associated with John Nielson north of Amakdedori going towards Bruin Bay
IICR-0049	Grave/Burial	Burials inland from Foldagers
IICR-0050	Grave/Burial; Village	Old village and burials southwest of Kokhanok
IICR-0051	Grave/Burial; Village	Old village and burials south of Kokhanok
IICR-0052	Grave/Burial; Village	Old village and burials west of Kokhanok
IICR-0053	Grave/Burial	Old burials east of Kokhanok along shoreline of Iliamna Lake
IICR-0054	Grave/Burial	Burials near Old Kokhanok Fish Camp
IICR-0055	Grave/Burial	Burials inland southeast of Kokhanok
IICR-0056	Grave/Burial; Battleground	Battleground with associated burials located on the western side of the Gibraltar River
IICR-0057	Cabin	John Olympic's Cabin at Amakdedori
IICR-0058	Places with Legends or Beings	Hairy man sighting
IICR-0059	Grave/Burial	Burials east of Kokhano

**Table K3.7-5: Interview-Identified Cultural Resources in the EIS Analysis Area**

IICR No.	Cultural Resource Type	Feature Type Description
IICR-0060	Trail/Route	Dog team trail to Fennie Andrew's cabin
IICR-0061	Grave/Burial; Other Historic Structures	Church and cemetery near Old Kokhanok Fish Camp
IICR-0062	Cabin	Cabin north of Amakdedori going towards Bruin Bay, possibly associated with John Nielson's cabin.
IICR-0063	Grave/Burial	Burials in modern Kokhanok
IICR-0064	Grave/Burial	Burials along beach west of Kokhanok
IICR-0065	Village	Old village along shoreline west of Kokhanok
IICR-0066	Place to Avoid/Spooky Place	Unnamed lake southeast of Kokhanok associated with spooky stories
IICR-0067	Village	Old village and fish camp south of Kokhanok
IICR-0068	Material Source	Material source for clay along Gibraltar River banks
IICR-0069	Trapline	Traplines by Fennie's Camp
IICR-0070	Trapline	Trapline southeast of Gibraltar Lake
IICR-0071	Trail/Route	Old dog team trail between Iliamna and Sixmile Lake
IICR-0072	Trail/Route, Trapline	Kokhanok to Gibraltar Lake trail/trapline
IICR-0073	Trapline	Kokhanok Lake-Copper River trapline
IICR-0074	Grave/Burial; Other Historic Structures	Old Kokhanok Church and cemetery
IICR-0075	Cabin; Camp	Fennie Andrew's cabin/camp at Gibraltar Lake outlet
IICR-0076	Cabin; Place to Avoid/Spooky Place	Spooky cabin near Gibraltar Lake
IICR-0077	Grave/Burial	Burials by Fennie Andrew's cabin
IICR-0078	Trail/Route	Trail along Iliamna Lake beach to Kokhanok Fish Camp
IICR-0079	Trail/Route	Old dog team trail to traditional moose hunting area inland west of Gibraltar Lake
IICR-0080	Village	Old village east of Kokhanok
IICR-0081	Village	Old village near Foldagers
IICR-0082	Camp	Old fish camp near outlet of Gibraltar Lake
IICR-0083	Place Name	"Iguyakhook" (phonetic)—Native place name for Gibraltar River
IICR-0084	Grave/Burial	Burials west of Kokhanok
IICR-0085	Grave/Burial	Burials south of Kokhanok
IICR-0086	Grave/Burial	Burials in modern Kokhanok
IICR-0087	Grave/Burial	Burials on west side of the mouth of the Gibraltar River
IICR-0088	Camp	Foldagers Camp
IICR-0089	Grave/Burial	Burials on west side of the mouth of the Gibraltar River
IICR-0090	Grave/Burial	Old burials on shoreline between Kokhanok and Gibraltar River
IICR-0091	Grave/Burial	Burials west of Gibraltar River

**Table K3.7-5: Interview-Identified Cultural Resources in the EIS Analysis Area**

IICR No.	Cultural Resource Type	Feature Type Description
IICR-0092	Village; Other Historic Structures; Camp	Old fish camp/village and reindeer corral west of Gibraltar River
IICR-0093	Trail/Route	Trail from Kokhanok to Gibraltar Lake
IICR-0094	Trail/Route	Community Routes: Kokhanok Traditional Travel Routes
IICR-0095	Trail/Route, Trapline	Old walking/dog team trail from Sid Larson Bay to Amakdedori via Bruin Bay
IICR-0096	Material Source	Material source for steambath rocks along beach east of Kokhanok
IICR-0097	Trail/Route	Trail from Kokhanok to Igiugig; four-wheeler, dog team, and walking
IICR-0098	Grave/Burial; Material Source	Burials and material source for clay along Gibraltar River
IICR-0099	Grave/Burial; Village; Other Historic Structures; Camp	Old village west of Kokhanok referred to as "Old Kokhanok" or "Fennie's Fish Camp" or "Old Fish Camp Village"; includes burials and current fish camp; old fish camps; Fennie's fish camp; includes old Russian Orthodox Church.
IICR-0100	Grave/Burial	Burials by old Kokhanok landing strip
IICR-0101	Cabin; Grave/Burial; Village; Archaeological Site	Old village at mouth of Amakdedori Creek including cabin and burials
IICR-0102	Cabin; Grave/Burial; Village; Camp	Fennie Andrew's Camp east of Kokhanok near Sid Larson Bay
IICR-0103	Village; Archaeological Site	Old village/housepits along Gibraltar River
IICR-0104 <sup>1</sup>	Grave/Burial; Village; Archaeological Site; Camp	Old village and current fish camp west of Kokhanok
IICR-0105	Grave/Burial; Village; Archaeological Site	Old village/housepits near mouth of Gibraltar Lake
IICR-0106	Grave/Burial; Other Historic Structures; Camp; Spiritually Important Place	Old church and fish camp site near Kokhanok
IICR-0107	Harvest Location/Traditional Use Area	Vachtaliq—"place where the seagulls lay eggs"; small island in Kokhanok Bay. Also traditional fishing area.
IICR-0108	Places with Legends or Beings	Boundary point between Dena'ina and Yup'ik near mouth of Eagle Bay Creek; resulting from historic treaty
IICR-0109	Village; Archaeological Site	Old village/housepits at Amakdedori
IICR-0110	Cabin; Camp	Collapsed cabin and family camp between Kokhanok and Sid Larson Bay
IICR-0111	Grave/Burial	Burials near lake near Kokhanok called "Slop Bucket Lake" where people used to throw garbage
IICR-0112	Material Source	Freshwater source at Coldwater Creek, small creek west of Kokhanok
IICR-0113	Grave/Burial	Burials west of Gibraltar River
IICR-0114	Grave/Burial	Burials west of Kokhanok
IICR-0115	Camp	Camp along Newhalen River at the mouth of Alexcy Creek for spawned out salmon
IICR-0116	Trail/Route	Newhalen water routes across Iliamna Lake

**Table K3.7-5: Interview-Identified Cultural Resources in the EIS Analysis Area**

IICR No.	Cultural Resource Type	Feature Type Description
IICR-0117	Cabin; Grave/Burial	Burials and nearby cabin located along Upper Talarik Creek
IICR-0118	Other Historic Structures	Site of first Iliamna School, recorded location may be inaccurate
IICR-0119	Camp	Camps on high ground near the mouth of Upper Talarik Creek
IICR-0120	Trail/Route	Winter trail from Newhalen to Lake Clark
IICR-0121	Trail/Route	Riverside trail along the western side of the Newhalen River
IICR-0122	Trail/Route	Trail from Stonehouse Lake to Sixmile Lake via east side Roadhouse Mountain
IICR-0123	Place to Avoid/Spooky Place	Spooky place at Eagle Bay
IICR-0124	Portage	Portage Landing on the western side of Newhalen River near Petroff Falls
IICR-0125	Place to Avoid/Spooky Place	Spooky place at the first bridge along Iliamna-Sixmile Lake Road
IICR-0126	Other Historic Structures	Reindeer Station at the gap west of Newhalen River near Petroff Falls
IICR-0127	Camp	Fish camp on the western side of Newhalen River near Petroff Falls
IICR-0128	Grave/Burial	Burials along Upper Talarik Creek
IICR-0129	Grave/Burial	Burials north of Iliamna on the east side of the Newhalen River
IICR-0130	Trail/Route	Trail from Kijik to Old Iliamna
IICR-0131	Trail/Route	Community Routes: Newhalen Traditional Travel Routes
IICR-0132	Cabin; Place to Avoid/Spooky Place	Cabin/Place to avoid on Upper Talarik Creek
IICR-0133	Grave/Burial; Place to Avoid/Spooky Place	Burials/Place to avoid at Eagle Bay
IICR-0134	Places with Legends or Beings	Hairy man sighting in Upper Talarik Creek
IICR-0135	Cabin; Archaeological Site; Harvest Location/Traditional Use Area	Traditional use area for spawned out salmon near head of Knutson Bay associated with cabins and archaeological sites
IICR-0136	Grave/Burial; Places with Legends or Beings; Place to Avoid/Spooky Place; Battleground; Spiritually Important Place	Roadhouse Mountain also known as "Shaman's Mountain" or "Giant Mountain"; includes sacred areas, spooky places to avoid, hairy man sightings, burials, battleground, and stone structures/shelters near summit
IICR-0137	Cabin	Cabin near mouth of Upper Talarik Creek
IICR-0138	Trapline	Trapping area on Boys' Mountain
IICR-0139	Trail/Route	Trail from Nondalton to Upper Talarik Creek
IICR-0140	Historic Objects; Place to Avoid/Spooky Place	Wien air plane crash site up Knutson Creek
IICR-0141	Camp	Camps on the south side of Frying Pan Lake
IICR-0142	Camp	Camp at outlet of Frying Pan Lake
IICR-0143	Trail/Route	Horse trail from Sixmile Lake to Eagle Bay via east side of Roadhouse Mountain

**Table K3.7-5: Interview-Identified Cultural Resources in the EIS Analysis Area**

IICR No.	Cultural Resource Type	Feature Type Description
IICR-0144	Trail/Route	Trail by dog team from Old Iliamna to Seversons along the beach
IICR-0145	Camp	Fish camp on the western side of the Newhalen River
IICR-0146	Cabin	Cabin along Upper Talarik Creek
IICR-0147	Other Historic Structures	Reindeer station in Eagle Bay
IICR-0148	Village	Modern village of Pedro Bay
IICR-0149	Camp	Fish camp located along east side of the Newhalen River
IICR-0150	Camp	Cottonwood patch used for camping north of Kaskanak Mountain
IICR-0151	Trail/Route	Trail from Tanalian to Hedlunds via Tazimina Lakes
IICR-0152	Camp	Sandy beach camp on the north end of Frying Pan Lake
IICR-0153	Camp	Wooded outlet stream camp on the south end of Frying Pan Lake
IICR-0154	Camp	Camp and burials at Portage Landing on western side of Newhalen River
IICR-0155	Battleground	Battle site north of Petroff Falls west of the Newhalen River
IICR-0156	Trail/Route	Trail from Nondalton along the western side of Newhalen River to bird camp and caribou hunting area
IICR-0157	Other Historic Structures	Reindeer corral on the west side of Newhalen River south of Sixmile Lake
IICR-0158	Camp	Cottonwood patch used for camping west of Groundhog Mountain
IICR-0159	Trail/Route	Nondalton water routes across Iliamna Lake
IICR-0160	Trail/Route	Williamsport to Pile Bay road
IICR-0161	Village	Hedlunds site near Chekok Point
IICR-0162	Portage	Portage over Knutson Creek
IICR-0163	Camp	Vern Jensen's allotment and camping area
IICR-0164	Village	Old village near head of Lonesome Bay
IICR-0165	Place Name	"Nughil Vetnu"—Native place name for Newhalen River
IICR-0166	Grave/Burial	Burial located near Portage Landing on the east side of the Newhalen River
IICR-0167	Trail/Route	Trail by dog team from Sixmile Lake to Chekok Bay/Hedlunds
IICR-0168	Trail/Route	Foot trail from Pickerel Lakes to Chekok Bay
IICR-0169	Trail/Route	Trail from Pedro Bay to Cook Inlet called "Giant's Trail"
IICR-0170	Trail/Route	Community Routes: Nondalton Traditional Travel Routes
IICR-0171	Trail/Route	Road/Trail/Route between Nondalton and Iliamna
IICR-0172	Trapline	Trapline extending from Sixmile Lake and south of Groundhog Mountain
IICR-0173	Harvest Location/Traditional Use Area; Camp	Camp and traditional caribou hunting area at Frying Pan Lake
IICR-0174	Camp	Hunting camp south of Groundhog Mountain
IICR-0175 <sup>1</sup>	Camp	Fish Camp on the eastern side of the Newhalen River near mouth of Alexcy Creek

**Table K3.7-5: Interview-Identified Cultural Resources in the EIS Analysis Area**

IICR No.	Cultural Resource Type	Feature Type Description
IICR-0176	Village; Archaeological Site	Old Dena'ina village on Newhalen River at Petrof Falls
IICR-0177	Camp	Cottonwood Camp south of Groundhog Mountain
IICR-0178	Camp	Camp and traditional meeting area in cottonwood patch near Black Mountain west of Groundhog Mountain
IICR-0179	Harvest Location/Traditional Use Area	Sacred fishing grounds from Nondalton to the landing on the Newhalen River
IICR-0180	Harvest Location/Traditional Use Area	Traditional fishing area for steelhead trout at Frying Pan Lake
IICR-0181	Harvest Location/Traditional Use Area	Clam harvesting area in Cottonwood Bay (Cook Inlet)
IICR-0182 <sup>1</sup>	Spiritually Important Place	Groundhog Mountain—important landscape feature for maintaining cultural identity and for subsistence practices
IICR-0183	Harvest Location/Traditional Use Area	Traditional fishing, trapping, caribou, and moose hunting area near Sharp Mountain, headwaters of Koktuli river, and Groundhog Mountain.
IICR-0184	Harvest Location/Traditional Use Area; Camp	Traditional use area south of Nondalton with camps for fishing and hunting; referred to as Steam Bath Creek
IICR-0185	Harvest Location/Traditional Use Area	Traditional hunting area for caribou during times of need; between Lower and Upper Talarik creeks
IICR-0186	Camp	Old camp along Pile River
IICR-0187	Camp	Old family camp in Iliamna Bay
IICR-0188	Grave/Burial	Burials at Lonesome Bay
IICR-0189	Trail/Route	Trail to Knutson Bay—Knutson Trail (newer trail)
IICR-0190	Trail/Route	Trail to Knutson Bay—Old Knutson Trail
IICR-0191	Trail/Route	Trail from Pedro Bay to Pile Bay (RS2477 trail/USGS 250k Trail) - Old Horse Trail
IICR-0192	Trapline	Trapline along Iliamna River
IICR-0193	Trapline	Trapline and traditional hunting area along Pile River
IICR-0194	Trail/Route	Trail to Old Iliamna
IICR-0195	Archaeological Site	House pits in Knutson Bay
IICR-0196	Archaeological Site	House pits in Knutson Bay
IICR-0197	Archaeological Site	Hearth site at Rabbit Point southeast of Pedro Bay
IICR-0198	Harvest Location/Traditional Use Area	Traditional ice fishing area at Dumbbell Lakes
IICR-0199	Camp	Camp and stopping area called Chayi [Tea] Place
IICR-0200	Harvest Location/Traditional Use Area	Traditional use area for spawned out salmon at mouth of Knutson Creek
IICR-0201	Grave/Burial; Village	Old village and burials at Pile Bay Village
IICR-0202	Grave/Burial	Burials east of Pile Bay Village—Pile Bay Village Cemetery
IICR-0203	Grave/Burial	Burials near Pedro Bay

**Table K3.7-5: Interview-Identified Cultural Resources in the EIS Analysis Area**

IICR No.	Cultural Resource Type	Feature Type Description
IICR-0204	Grave/Burial	Burials near Pedro Bay
IICR-0205	Grave/Burial	Burials at Pedro Bay Village cemetery
IICR-0206	Grave/Burial	Burials at Rabbit Point cemetery south of Pedro Bay
IICR-0207	Place Name	Lonesome Bay Mountain—landscape feature located north of Pedro Bay
IICR-0208	Place Name	Lincoln's Profile—Landscape feature/rock outcropping which resembles a profile of Abraham Lincoln's face
IICR-0209	Other Historic Structures	Russian Orthodox church south of Pedro Bay—moved from Old Iliamna
IICR-0210	Place Name	Big Hill—landscape feature on northeastern end of Iliamna Lake
IICR-0211	Archaeological Site	House pits near Pedro Bay airport
IICR-0212	Other Historic Structures; Battleground	Battleground and Russian fort near Pedro Bay
IICR-0213	Village; Archaeological Site	Old village and housepits in Knutson Bay
IICR-0214	Camp	Camp near Dumbbell Lake—referred to as "Chayi Camp"
IICR-0215	Cabin; Grave/Burial; Village	Old Village, cabins, and burials in Lonesome Bay
IICR-0216	Harvest Location/Traditional Use Area; Camp	Traditional camp and fishing area inland from Pedro Bay; referred to as "Joe Luck's Fish Pond"
IICR-0217	Archaeological Site; Harvest Location/Traditional Use Area	Traditional fishing area and cache pits along Old Knutson Trail
IICR-0218	Archaeological Site	House pits inland from Pedro Bay
IICR-0219	Trail/Route	Portage Trail from Sixmile Lake to Iliamna
IICR-0220	Trail/Route	Airplane Route from Port Alsworth to Nondalton and Iliamna
IICR-0221	Trail/Route	Airplane Route from Port Alsworth to Pedro Bay via pass
IICR-0222	Grave/Burial	Burials near Newhalen
IICR-0223	Grave/Burial	Burial near Schoolhouse Lake
IICR-0224	Grave/Burial; Other Historic Structures	Church and burials between Iliamna and Newhalen
IICR-0225	Camp	House pits on Newhalen River
IICR-0226	Battleground	Battleground near Roadhouse Bay
IICR-0227	Grave/Burial; Village	Old village and burial grounds near Iliamna
IICR-0228	Harvest Location/Traditional Use Area	Fish camp in Roadhouse Bay
IICR-0229	Places with Legends or Beings	Giant fish sightings in Iliamna Lake
IICR-0230	Grave/Burial; Archaeological Site	Newhalen Rapids site and burials near Old Newhalen
IICR-0231	Village	Old Newhalen Village
IICR-0232	Archaeological Site	Old Portage Village
IICR-0233	Other Historic Structures	Army Camp along Newhalen River

**Table K3.7-5: Interview-Identified Cultural Resources in the EIS Analysis Area**

IICR No.	Cultural Resource Type	Feature Type Description
IICR-0234	Grave/Burial	Burials near Newhalen
IICR-0235	Village	Old village near Schoolhouse Lake
IICR-0236	Cabin; Village	Old village and cabin in Iliamna near Old Dump Lake
IICR-0237	Harvest Location/Traditional Use Area	Traditional use area for bear hunting along Bear Creek
IICR-0238	Grave/Burial	Burial at Schoolhouse Lake
IICR-0239	Cabin; Village; Camp	Fish camp, collapsed cabin, and old village on Bear Creek
IICR-0240	Trail/Route; Harvest Location/Traditional Use Area; Spiritually Important Place	Sacred area, trail, and traditional use area west of the Newhalen River
IICR-0241	Places with Legends or Beings	Giant fish sighting in Iliamna Lake
IICR-0242	Spiritually Important Place	Place where legendary hero/shaman lived on Newhalen River
IICR-0243	Harvest Location/Traditional Use Area; Camp	Traditional fish camp near the mouth of Newhalen River; used by Dena'ina from Kijik.
IICR-0244	Camp	Fish camp on Newhalen River called "Old Man Fedia's" camp
IICR-0245	Camp; Portage	Fish camp and portage along Newhalen River
IICR-0246	Battleground	Battleground near Schoolhouse Lake
IICR-0247	Cabin	Trading post/store at AC Point in Iliamna Bay/Cook Inlet
IICR-0248	Village	Old village west of Pedro Bay
IICR-0249	Archaeological Site	House pits west of Pedro Bay

Notes: <sup>1</sup>Identified as a Traditional Cultural Property during 2013 cultural resource interviews.

USGS = United States Geological Survey

Source: PLP 2019-RFI 113a, PLP 2020-RFI 113b

The interview-identified cultural resources that would be in the EIS analysis area for each alternative and component are shown below in Table K3.7-6. Interview-identified cultural resources that would be in the footprint of the project are shown in **bold**. Alternative variants are shown in *italics*.

**Table K3.7-6: Interview-Identified Cultural Resources in the EIS Alternatives**

IICR No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
IICR-0001	<b>Natural Gas Pipeline</b>	Mine Access Road North Ferry Terminal Natural Gas Pipeline		
IICR-0002	<b>Mine Access Road</b>		<b>Mine Access Road</b> <b>Port Access Road</b> <b>Natural Gas Pipeline</b>	<b>North Access Road</b> <b>Natural Gas Pipeline</b> Diamond Point Port
IICR-0003	<b>Mine Access Road</b> Natural Gas Pipeline		<b>Mine Access Road</b>	<b>North Access Road</b> <b>Natural Gas Pipeline</b>
IICR-0004	<b>Mine Access Road</b>		<b>Mine Access Road</b> Natural Gas Pipeline	<b>North Access Road</b> <b>Natural Gas Pipeline</b>

**Table K3.7-6: Interview-Identified Cultural Resources in the EIS Alternatives**

IICR No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
IICR-0005	Mine Access Road		Mine Access Road	North Access Road Natural Gas Pipeline
IICR-0006		Mine Access Road Natural Gas Pipeline		
IICR-0007	Mine Access Road		Mine Access Road	North Access Road Natural Gas Pipeline
IICR-0008			Natural Gas Pipeline	
IICR-0009	Mine Access Road Eagle Bay Ferry Terminal		Mine Access Road Eagle Bay Ferry Terminal	
IICR-0010	Natural Gas Pipeline	Mine Access Road Natural Gas Pipeline		
IICR-0011			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0012			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0013			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0014	<b>Mine Site</b> Mine Access Road	<b>Mine Site</b> Mine Access Road Natural Gas Pipeline	<b>Mine Site</b> Mine Access Road	<b>Mine Site</b> <b>North Access Road</b> <b>Natural Gas Pipeline</b>
IICR-0015	<b>Mine Site</b> <b>Mine Access Road</b> <b>Natural Gas Pipeline</b>	<b>Mine Site</b> <b>Mine Access Road</b> <b>Natural Gas Pipeline</b>	<b>Mine Site</b> <b>Mine Access Road</b> <b>Natural Gas Pipeline</b>	<b>Mine Site</b> <b>North Access Road</b> <b>Natural Gas Pipeline</b>
IICR-0016		<b>Mine Access Road</b> North Ferry Terminal <b>Natural Gas Pipeline</b>		
IICR-0017	Eagle Bay Ferry Terminal		Mine Access Road Eagle Bay Ferry Terminal	
IICR-0018			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0019	Natural Gas Pipeline	Mine Access Road Natural Gas Pipeline		
IICR-0020	<b>Mine Access Road</b> Eagle Bay Ferry Terminal		<b>Mine Access Road</b> Eagle Bay Ferry Terminal Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0021	Port Access Road Natural Gas Pipeline <b>Natural Gas Pipeline</b>	Mine Access Road Port Access Road North Ferry Terminal Natural Gas Pipeline <i>Kokhanok East Ferry Terminal Variant</i>	Port Access Road Pile Bay Ferry Terminal Natural Gas Pipeline	
IICR-0022	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		

**Table K3.7-6: Interview-Identified Cultural Resources in the EIS Alternatives**

IICR No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
IICR-0023		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0024		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0025		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0026		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0027		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0028		<b><i>Kokhanok East Ferry Terminal Variant</i></b>		
IICR-0029	Port Access Road Amakdedori Port <b>Natural Gas Pipeline</b> Natural Gas Pipeline	<b>Port Access Road</b> <b>Natural Gas Pipeline</b> Amakdedori Port <i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0030		Mine Access Road North Ferry Terminal Natural Gas Pipeline		
IICR-0031		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0032	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0033		Mine Access Road North Ferry Terminal Natural Gas Pipeline		
IICR-0034	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0035	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0036		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0037	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline <i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0038	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0039		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0040	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0041		<i>Kokhanok East Ferry Terminal Variant</i>		

**Table K3.7-6: Interview-Identified Cultural Resources in the EIS Alternatives**

IICR No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
IICR-0042	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0043	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline <i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0044		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0045	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0046		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0047		<b><i>Kokhanok East Ferry Terminal Variant</i></b>		
IICR-0048	<b>Port Access Road Amakdedori Port Natural Gas Pipeline</b>	<b>Port Access Road Amakdedori Port Natural Gas Pipeline <i>Kokhanok East Ferry Terminal Variant</i></b>		
IICR-0049		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0050	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0051	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0052	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0053		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0054	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0055		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0056	<b>Port Access Road Natural Gas Pipeline</b>	<b>Port Access Road Natural Gas Pipeline</b>		
IICR-0057	Port Access Road Amakdedori Port Natural Gas Pipeline	Port Access Road Amakdedori Port Natural Gas Pipeline <i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0058		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0059		<b><i>Kokhanok East Ferry Terminal Variant</i></b>		

**Table K3.7-6: Interview-Identified Cultural Resources in the EIS Alternatives**

IICR No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
IICR-0060	<b>Port Access Road</b> Amakdedori Port <b>Natural Gas Pipeline</b>	<b>Port Access Road</b> Amakdedori Port <b>Natural Gas Pipeline</b> <i><b>Kokhanok East Ferry Terminal Variant</b></i>		
IICR-0061	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0062	<b>Port Access Road</b> Amakdedori Port <b>Natural Gas Pipeline</b>	<b>Port Access Road</b> Amakdedori Port <b>Natural Gas Pipeline</b> <i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0063		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0064	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0065	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline <i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0066		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0067		<i><b>Kokhanok East Ferry Terminal Variant</b></i>		
IICR-0068	<b>Port Access Road</b> <b>Natural Gas Pipeline</b>	<b>Port Access Road</b> <b>Natural Gas Pipeline</b>		
IICR-0069	<b>Port Access Road</b> <b>Natural Gas Pipeline</b>	<b>Port Access Road</b> <b>Natural Gas Pipeline</b> <i><b>Kokhanok East Ferry Terminal Variant</b></i>		
IICR-0070	<b>Port Access Road</b> <b>Natural Gas Pipeline</b>	<b>Port Access Road</b> <b>Natural Gas Pipeline</b> <i><b>Kokhanok East Ferry Terminal Variant</b></i>		
IICR-0071	<b>Mine Access Road</b>		<b>Mine Access Road</b>	<b>North Access Road</b> <b>Natural Gas Pipeline</b>
IICR-0072	<b>Port Access Road</b> <b>Natural Gas Pipeline</b>	<b>Port Access Road</b> <b>Natural Gas Pipeline</b> <i><b>Kokhanok East Ferry Terminal Variant</b></i>		
IICR-0073		<i>Kokhanok East Ferry Terminal Variant</i>		

**Table K3.7-6: Interview-Identified Cultural Resources in the EIS Alternatives**

IICR No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
IICR-0074	<b>Port Access Road Natural Gas Pipeline</b>	<b>Port Access Road Natural Gas Pipeline</b>		
IICR-0075	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0076	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0077		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0078	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0079	<b>Port Access Road Natural Gas Pipeline</b>	<b>Port Access Road Natural Gas Pipeline</b> <i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0080		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0081		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0082	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0083	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0084	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0085	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline <i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0086		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0087	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0088		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0089	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0090	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline <i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0091	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0092	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		

**Table K3.7-6: Interview-Identified Cultural Resources in the EIS Alternatives**

<b>IICR No.</b>	<b>Alternative 1a</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>
IICR-0093	<b>Port Access Road Natural Gas Pipeline</b>	<b>Port Access Road <i>Kokhanok East Ferry Terminal Variant</i></b>		
IICR-0094	<b>Mine Site Mine Access Road Port Access Road Amakdedori Port Natural Gas Pipeline</b>	<b>Mine Site Mine Access Road Port Access Road Amakdedori Port North Ferry Terminal <i>Kokhanok East Ferry Terminal Variant</i></b>	<b>Mine Site Mine Access Road Natural Gas Pipeline</b>	<b>Mine Site North Access Road Natural Gas Pipeline</b>
IICR-0095	<b>Port Access Road Amakdedori Port Natural Gas Pipeline</b>	<b>Port Access Road Amakdedori Port <i>Kokhanok East Ferry Terminal Variant</i></b>		
IICR-0096		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0097	<b>Port Access Road South Ferry Terminal Natural Gas Pipeline</b>	<b>Port Access Road South Ferry Terminal <i>Kokhanok East Ferry Terminal Variant</i></b>		
IICR-0098	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0099	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0100		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0101	Port Access Road Amakdedori Port Natural Gas Pipeline	Port Access Road Amakdedori Port Natural Gas Pipeline <i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0102		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0103	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0104	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0105	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0106	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0107		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0108	Mine Access Road Eagle Bay Ferry Terminal		Mine Access Road Eagle Bay Ferry Terminal	

**Table K3.7-6: Interview-Identified Cultural Resources in the EIS Alternatives**

IICR No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
IICR-0109	Port Access Road Amakdedori Port Natural Gas Pipeline	Port Access Road Amakdedori Port Natural Gas Pipeline <i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0110		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0111		<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0112	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0113	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline		
IICR-0114	Port Access Road Natural Gas Pipeline	Port Access Road Natural Gas Pipeline <i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0115	Mine Access Road Natural Gas Pipeline		Mine Access Road	North Access Road Natural Gas Pipeline
IICR-0116	<b>Natural Gas Pipeline</b>	<i>Kokhanok East Ferry Terminal Variant</i>		
IICR-0117		Mine Access Road <b>North Ferry Terminal</b> Natural Gas Pipeline		
IICR-0118		<b>Mine Access Road Natural Gas Pipeline</b>		
IICR-0119		Mine Access Road North Ferry Terminal Natural Gas Pipeline		
IICR-0120	<b>Mine Access Road Natural Gas Pipeline</b>		<b>Mine Access Road</b>	<b>North Access Road Natural Gas Pipeline</b>
IICR-0121	Mine Access Road Natural Gas Pipeline	<b>Mine Access Road Natural Gas Pipeline</b>	Mine Access Road	North Access Road Natural Gas Pipeline
IICR-0122			<b>Natural Gas Pipeline</b>	<b>North Access Road Natural Gas Pipeline</b>
IICR-0123	Eagle Bay Ferry Terminal		Eagle Bay Ferry Terminal	
IICR-0124		Mine Access Road Natural Gas Pipeline		
IICR-0125	<b>Natural Gas Pipeline</b>	Mine Access Road Natural Gas Pipeline		
IICR-0126		<b>Mine Access Road Natural Gas Pipeline</b>		
IICR-0127		Mine Access Road Natural Gas Pipeline		

**Table K3.7-6: Interview-Identified Cultural Resources in the EIS Alternatives**

IICR No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
IICR-0128		<b>Mine Access Road</b> North Ferry Terminal <b>Natural Gas Pipeline</b>		
IICR-0129	Mine Access Road <b>Natural Gas Pipeline</b>		Mine Access Road	<b>North Access Road</b> <b>Natural Gas Pipeline</b>
IICR-0130			<b>Natural Gas Pipeline</b>	<b>North Access Road</b> <b>Natural Gas Pipeline</b>
IICR-0131	<b>Mine Access Road</b> <b>Port Access Road</b> Eagle Bay Ferry Terminal <b>Natural Gas Pipeline</b>	<b>Mine Access Road</b> <b>Port Access Road</b> North Ferry Terminal <b>Natural Gas Pipeline</b> <i>Kokhanok East Ferry Terminal Variant</i>	<b>Mine Access Road</b> Eagle Bay Ferry Terminal Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0132		Mine Access Road Natural Gas Pipeline		
IICR-0133	Mine Access Road Eagle Bay Ferry Terminal		Mine Access Road Eagle Bay Ferry Terminal	
IICR-0134		Mine Access Road Natural Gas Pipeline		
IICR-0135			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0136	<b>Mine Access Road</b>		<b>Mine Access Road</b> Natural Gas Pipeline	<b>North Access Road</b> <b>Natural Gas Pipeline</b>
IICR-0137		Mine Access Road North Ferry Terminal Natural Gas Pipeline		
IICR-0138	Mine Site	Mine Site	Mine Site	Mine Site
IICR-0139	<b>Mine Access Road</b>	<b>Mine Access Road</b> <b>Natural Gas Pipeline</b>	<b>Mine Access Road</b>	<b>North Access Road</b> <b>Natural Gas Pipeline</b>
IICR-0140				North Access Road Natural Gas Pipeline
IICR-0141	Mine Site	Mine Site	Mine Site	Mine Site
IICR-0142	Mine Site	Mine Site	Mine Site	Mine Site
IICR-0143	<b>Mine Access Road</b>		<b>Mine Access Road</b> <b>Natural Gas Pipeline</b>	<b>North Access Road</b> <b>Natural Gas Pipeline</b>
IICR-0144	Mine Access Road <b>Eagle Bay Ferry Terminal</b>		Mine Access Road <b>Eagle Bay Ferry Terminal</b> <b>Natural Gas Pipeline</b>	<b>North Access Road</b> <b>Natural Gas Pipeline</b>
IICR-0145	Mine Access Road		Mine Access Road	North Access Road Natural Gas Pipeline
IICR-0146		Mine Access Road Natural Gas Pipeline		
IICR-0147	Mine Access Road		Mine Access Road	

**Table K3.7-6: Interview-Identified Cultural Resources in the EIS Alternatives**

IICR No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
IICR-0148			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0149	Mine Access Road		Mine Access Road	North Access Road Natural Gas Pipeline
IICR-0150	Mine Site	Mine Site	Mine Site	Mine Site
IICR-0151			<b>Natural Gas Pipeline</b>	<b>North Access Road Natural Gas Pipeline</b>
IICR-0152	Mine Site	Mine Site	Mine Site	Mine Site
IICR-0153	Mine Site	Mine Site	Mine Site	Mine Site
IICR-0154	Mine Access Road Natural Gas Pipeline		Mine Access Road	North Access Road Natural Gas Pipeline
IICR-0155	<b>Mine Access Road</b>	<b>Mine Access Road Natural Gas Pipeline</b>	<b>Mine Access Road</b>	<b>North Access Road Natural Gas Pipeline</b>
IICR-0156	<b>Mine Access Road Natural Gas Pipeline</b>	Mine Access Road Natural Gas Pipeline	<b>Mine Access Road</b>	<b>North Access Road Natural Gas Pipeline</b>
IICR-0157	Mine Access Road		Mine Access Road	North Access Road Natural Gas Pipeline
IICR-0158	Mine Site	Mine Site	Mine Site	Mine Site
IICR-0159	Mine Access Road Eagle Bay Ferry Terminal <b>Natural Gas Pipeline</b>		Mine Access Road Port Access Road Eagle Bay Ferry Terminal Pile Bay Ferry Terminal Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0160			<b>Port Access Road</b> Natural Gas Pipeline	<b>North Access Road</b> Diamond Point Port <b>Natural Gas Pipeline</b>
IICR-0161			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0162			<b>Natural Gas Pipeline</b>	North Access Road Natural Gas Pipeline
IICR-0163			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0164			<b>Natural Gas Pipeline</b>	<b>North Access Road Natural Gas Pipeline</b>
IICR-0165		Mine Access Road Natural Gas Pipeline		
IICR-0166	<b>Mine Access Road Natural Gas Pipeline</b>		<b>Mine Access Road</b>	North Access Road Natural Gas Pipeline
IICR-0167			<b>Natural Gas Pipeline</b>	<b>North Access Road Natural Gas Pipeline</b>
IICR-0168			<b>Natural Gas Pipeline</b>	<b>North Access Road Natural Gas Pipeline</b>

**Table K3.7-6: Interview-Identified Cultural Resources in the EIS Alternatives**

IICR No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
IICR-0169			Port Access Road	North Access Road Natural Gas Pipeline
IICR-0170	<b>Mine Site Mine Access Road Natural Gas Pipeline</b>	<b>Mine Site Mine Access Road North Ferry Terminal Natural Gas Pipeline</b>	<b>Mine Site Mine Access Road Port Access Road Natural Gas Pipeline</b>	<b>Mine Site North Access Road Diamond Point Port Natural Gas Pipeline</b>
IICR-0171	<b>Mine Access Road Natural Gas Pipeline</b>	Mine Access Road Natural Gas Pipeline	<b>Mine Access Road</b>	<b>North Access Road Natural Gas Pipeline</b>
IICR-0172	Mine Site Mine Access Road	Mine Site	Mine Site Mine Access Road	Mine Site North Access Road Natural Gas Pipeline
IICR-0173	<b>Mine Site</b>	<b>Mine Site</b>	<b>Mine Site</b>	<b>Mine Site</b>
IICR-0174	Mine Site <b>Mine Access Road</b>	Mine Site <b>Mine Access Road Natural Gas Pipeline</b>	Mine Site <b>Mine Access Road</b>	<b>North Access Road Natural Gas Pipeline</b>
IICR-0175	Mine Access Road Natural Gas Pipeline		Mine Access Road	North Access Road Natural Gas Pipeline
IICR-0176		Mine Access Road Natural Gas Pipeline		
IICR-0177	Mine Site	Mine Site	Mine Site	Mine Site
IICR-0178	Mine Site	Mine Site	Mine Site	Mine Site
IICR-0179	<b>Mine Access Road Natural Gas Pipeline</b>		<b>Mine Access Road</b>	<b>North Access Road Natural Gas Pipeline</b>
IICR-0180	Mine Site	Mine Site	Mine Site	Mine Site
IICR-0181			Diamond Point Port <b>Natural Gas Pipeline</b>	<b>Natural Gas Pipeline</b>
IICR-0182	Mine Site	Mine Site	Mine Site	Mine Site
IICR-0183	<b>Mine Site Mine Access Road Natural Gas Pipeline</b>	<b>Mine Site Mine Access Road Natural Gas Pipeline</b>	<b>Mine Site Mine Access Road Natural Gas Pipeline</b>	<b>Mine Site North Access Road Natural Gas Pipeline</b>
IICR-0184	Mine Access Road		Mine Access Road	North Access Road Natural Gas Pipeline
IICR-0185		Mine Access Road North Ferry Terminal Natural Gas Pipeline		
IICR-0186			<b>Natural Gas Pipeline</b>	North Access Road Natural Gas Pipeline
IICR-0187			Port Access Road	North Access Road Diamond Point Port Natural Gas Pipeline
IICR-0188			<b>Natural Gas Pipeline</b>	<b>North Access Road Natural Gas Pipeline</b>
IICR-0189			Natural Gas Pipeline	North Access Road Natural Gas Pipeline

**Table K3.7-6: Interview-Identified Cultural Resources in the EIS Alternatives**

IICR No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
IICR-0190			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0191			<b>Natural Gas Pipeline</b>	<b>North Access Road Natural Gas Pipeline</b>
IICR-0192			Port Access Road Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0193			<b>Natural Gas Pipeline</b>	<b>North Access Road Natural Gas Pipeline</b>
IICR-0194			<b>Port Access Road</b>	<b>North Access Road Natural Gas Pipeline</b>
IICR-0195			<b>Natural Gas Pipeline</b>	<b>North Access Road Natural Gas Pipeline</b>
IICR-0196			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0197			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0198			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0199			Natural Gas Pipeline	<b>North Access Road Natural Gas Pipeline</b>
IICR-0200			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0201			Port Access Road Pile Bay Ferry Terminal Natural Gas Pipeline	
IICR-0202			Port Access Road	
IICR-0203			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0204			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0205			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0206			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0207			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0208			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0209			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0210			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0211			Natural Gas Pipeline	North Access Road Natural Gas Pipeline

**Table K3.7-6: Interview-Identified Cultural Resources in the EIS Alternatives**

IICR No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
IICR-0212			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0213			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0214			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0215			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0216			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0217			Natural Gas Pipeline	North Access Road Natural Gas Pipeline
IICR-0218			<b>Natural Gas Pipeline</b>	<b>North Access Road Natural Gas Pipeline</b>
IICR-0219	<b>Mine Access Road Natural Gas Pipeline</b>	Mine Access Road Natural Gas Pipeline	<b>Mine Access Road</b>	<b>North Access Road Natural Gas Pipeline</b>
IICR-0220	<b>Mine Access Road Natural Gas Pipeline</b>	<b>Mine Access Road Natural Gas Pipeline</b>	<b>Mine Access Road</b>	<b>North Access Road Natural Gas Pipeline</b>
IICR-0221			<b>Natural Gas Pipeline</b>	<b>North Access Road Natural Gas Pipeline</b>
IICR-0222	Natural Gas Pipeline			
IICR-0223	Natural Gas Pipeline			
IICR-0224	Mine Access Road Natural Gas Pipeline		Mine Access Road	
IICR-0225	Natural Gas Pipeline			
IICR-0226	Natural Gas Pipeline			
IICR-0227	Natural Gas Pipeline			
IICR-0228	Natural Gas Pipeline			
IICR-0229	Natural Gas Pipeline			
IICR-0230	<b>Natural Gas Pipeline</b>			
IICR-0231	Natural Gas Pipeline			
IICR-0232	Natural Gas Pipeline			
IICR-0233	Natural Gas Pipeline			
IICR-0234	Natural Gas Pipeline			
IICR-0235	Natural Gas Pipeline			
IICR-0236	Natural Gas Pipeline			
IICR-0237	Natural Gas Pipeline			
IICR-0238	Natural Gas Pipeline			
IICR-0239	Natural Gas Pipeline			
IICR-0240	Natural Gas Pipeline			North Access Road Natural Gas Pipeline
IICR-0241	Natural Gas Pipeline			

**Table K3.7-6: Interview-Identified Cultural Resources in the EIS Alternatives**

IICR No.	Alternative 1a	Alternative 1	Alternative 2	Alternative 3
IICR-0242	Natural Gas Pipeline			North Access Road Natural Gas Pipeline
IICR-0243	Natural Gas Pipeline			
IICR-0244				North Access Road Natural Gas Pipeline
IICR-0245	Natural Gas Pipeline			
IICR-0246	Natural Gas Pipeline			
IICR-0247				North Access Road Diamond Point Port Natural Gas Pipeline
IICR-0248				North Access Road Natural Gas Pipeline
IICR-0249				North Access Road Natural Gas Pipeline

Source: PLP 2019-RFI 113a, PLP 2020-RFI 113b