The House Committee on
Transportation & Infrastructure

"NO CURRENT PLANS..."

Pebble LP, Sham Permitting, and False Testimony Threatening the World's Largest Salmon Habitat

OCTOBER 2022

Prepared for
Chair of the House Committee on Transportation and Infrastructure
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Chair of the Subcommittee on Water Resources and Environment
GRACE F. NAPOLITANO

By Majority Staff of the
HOUSE COMMITTEE ON
TRANSPORTATION AND INFRASTRUCTURE

APPENDIX II

“NO CURRENT PLANS…”

Pebble LP, Sham Permitting, and False Testimony Threatening the World’s Largest Salmon Habitat

House Committee on Transportation and Infrastructure

APPENDIX 2:

Pebble Mine Clean Water Act Application for Permit, POA-2017-271, December 2017

Pebble Project
Department of the Army
Application for Permit

POA-2017-271

December 2017

3201 C Street, Suite 505
Anchorage, AK 99503

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Initial Distribution
Pebble Mine Project
Application for Department of the Army Permit (POA-2017-271)

Agency/Organization	Directed to:	No. Copies

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U.S. ARMY CORPS OF ENGINEERS

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

Form Approved - OMB No. 0710-0003 Expires: 30-SEPTEMBER-2015

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First – **James** Middle - Last – **Fueg** Company - Pebble Limited Partnership E-mail Address – jamesfueg@pebblepartnership.com	First - Middle - Last - Company – E-mail Address -
6. APPLICANT'S ADDRESS: Address- **3201 C Street, Suite 505** City - **Anchorage** State - **AK** Zip - **99503** Country - **USA**	9. AGENT'S ADDRESS Address- City - State - Zip - Country -
7. APPLICANT'S PHONE NOs. w/AREA CODE a. Residence b. Business c. Fax b. **907-339-2600** c. **907-339-2601** b. **877-450-2600**	10. AGENTS PHONE NOs. w/AREA CODE a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, ----------**Not Applicable**---------- to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

Not Applicable	**Not Applicable**
SIGNATURE OF APPLICANT	DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)

The Pebble Project

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable)
See Tab 13 for a list of waterbodies.	Address - **Not Applicable** City - State- Zip- Country-

15. LOCATION OF PROJECT - Mine Site

Latitude: **59° 53'51" N** Longitude: **155° 18'03"** W

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) State Tax Parcel ID – **See Tab 16 for other location information.**

Municipality Section - Township – Range -

17. DIRECTIONS TO THE SITE

See Tab 17 for directions to the site

18. Nature of Activity (Description of project, include all features)

See Tab 18 for Nature of Activity.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

See Tab 19 for the Project Purpose.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

See Tab 20 for Reasons for Discharge.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards

See Tab 21 for Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards.

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)
Acres
or
Linear Feet
See Tab 22 for Surface Area in Acres of Wetlands or Other Waters Filled.

23. Description of Avoidance, Minimization, and Compensation (see instructions)
See Tab 23 for a description of avoidance, minimization, and compensation.

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).
See Tab 25 for a table listing adjoining property owners and mailing information.

a. Address-

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
See Tab 26 for a list of permits and approvals required.					

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT	DATE	SIGNATURE OF AGENT	DATE
	December 22, 2017		

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

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CONTENTS

Section Page

TABLES

ATTACHMENTS

Attachment A includes the following figures:

No.	Figure Index Table		
	Category	Type	Number Series
1	Index Figures	Plan View	I-001 and I-002
2	Natural Gas Pipeline	Plan View	G-001 to G-012
3	Port and Ferry Landings	Plan View	P-001 to P-004
4	Road Transportation Corridor	Plan View	T-001 to T-046
5	Mine	Plan View	M-001 to M-020
6	Port and Ferry Landings	Cross Sections	PX-001 to PX-005
7	Transportation	Cross Sections	TX-001
8	Culverts	Cross Sections	CX-001 to CX-007
9	Bridges	Cross Sections	BX-001 to BX-009
10	Mine	Cross Sections	MX-001 to MX-016
11	Natural Gas Pipeline	Cross Sections	GX-001 to GX-003

ACRONYMS AND ABBREVIATIONS

ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
ADOT&PF	Alaska Department of Transportation and Public Facilities
APDES	Alaska Pollutant Discharge Elimination System
BLM	Bureau of Land Management
CWA	Clean Water Act
CY	Cubic Yards
EPA	U.S. Environmental Protection Agency
HDPE	High-Density Polyethylene
KP	Knight Piésold
LGO	Low-Grade Ore
MS	Material Site
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPAG	Non-Potentially Acid Generating
OHW	Ordinary High Water
PAG	Potentially Acid Generating
PLP	Pebble Limited Partnership
RHA	Rivers and Harbors Act
TSF	Tailings Storage Facility
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WOUS	Waters of the U.S.
WTP	Water Treatment Plant

Tab 13. Names of Waterbodies

The waterbodies directly impacted by the Pebble Project (Project) include the following:

- Cook Inlet
- Amakdedori Creek
- Gibraltar Lake
- Iliamna Lake
- Upper Talarik Creek
- Newhalen River
- Koktuli River
- Stariski Creek

Tab 16. Other Location Descriptions

Note that all major facility locations are within the Seward Meridian.

Table 16-1. Pebble Mine Project Major Facility Locations

Range	Township	Section
14 West	3 South	7, 8, 18, 19, 30
15 West	3 South	25, 36
	4 South	1, 11, 12, 14, 15, 21, 22, 28, 29, 31, 32
16 West	5 South	1, 2, 10, 11, 15, 16, 17, 19, 20, 30
24 West	10 South	22, 23, 24, 27, 28, 29, 30
25 West	10 South	25, 32, 33, 34, 35, 36
26 West	10 South	31, 32, 33
28 West	10 South	19, 20, 26, 27, 28, 29, 31, 35, 36
29 West	10 South	6, 7, 8, 9, 10, 14, 15, 16, 17, 22, 23, 24, 26, 34, 35, 36
	11 South	2
30 West	9 South	31, 32, 33, 34
	10 South	1, 2, 3, 5, 6
31 West	9 South	31, 32
	10 South	1, 3, 4, 5, 10, 11, 12
32 West	9 South	15, 16, 17, 18, 22, 26, 27, 35, 36
33 West	4 South	19, 27, 28, 29, 30, 34, 35
	8 South	18, 19, 20, 29, 32, 33
	9 South	2, 3, 6, 7, 8, 9, 10, 11, 13, 14
34 West	3 South	19, 29, 30, 32
	4 South	4, 5, 9, 10, 14, 15, 23, 24, 26, 32, 33, 34, 35
	6 South	30, 31
	7 South	5, 6, 8, 9, 16, 21, 22, 26, 27, 35
	8 South	1, 2, 12, 13
35 West	3 South	15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 29, 30, 33, 34
	5 South	1, 12, 13, 14, 22, 23, 26, 27, 34, 35
	6 South	2, 3, 10, 11, 14, 23, 24, 25
36 West	3 South	11, 12, 13, 14, 15, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 33, 34

Tab 17. Directions to the Site

The Pebble Deposit is located on State of Alaska lands leased by Pebble Limited Partnership (PLP) for mineral development. The deposit/mine site is not currently served by roads or railroads, nor is there a connection to existing utility infrastructure. The only access to the mine site is by helicopter or by snow machine during winter conditions. The Pebble Deposit is centered at latitude 59° 53' 51" N, longitude 155° 18' 03" W, approximately 200 miles southwest of Anchorage, Alaska, and 17 miles from the communities of Iliamna, Newhalen, and Nondalton (Figure I-001).

Tab 18. Nature of Activity

Additional information can be found in Attachment D–Project Description.

18.1 Project Overview[1]

PLP is proposing to develop the Pebble copper-gold-molybdenum porphyry deposit as a surface mine in southwest Alaska. The Pebble Project (Project) is located in a sparsely populated region of southwest Alaska near Iliamna Lake, primarily within the Lake and Peninsula Borough with a portion of the supporting infrastructure in the Kenai Peninsula Borough (figures I-001 and I-002). The Project consists of four primary project elements: the mine site, the Amakdedori Port, the transportation corridor, and the natural gas pipeline. Additional information for each of the primary project elements is provided below. Detailed project information is provided in the attached Project Description.

18.2 Primary Project Elements

18.2.1 Mine Site

The deposit is located under rolling, permafrost-free terrain in the Iliamna region of southwest Alaska, approximately 200 miles southwest of Anchorage and 60 miles west of Cook Inlet. The closest communities are the villages of Iliamna, Newhalen, and Nondalton (Figure I-001), each approximately 17 miles from the deposit. The mine site is not currently served by roads or railroads, nor is there a connection to existing utility infrastructure. The only access is by helicopter or by snow machine during winter conditions.

The Project is proposed to be a conventional drill, blast, truck, and shovel operation with a mining rate of up to 90 million tons per year. Approximately 1,100 million tons of mineralized rock and 100 million tons of waste rock will be mined over the life of the Project. The mineralized material will be crushed and sent to a coarse ore stockpile to feed the process plant. The process plant will include grinding and flotation steps, with a processing rate of up to 58 million tons per year, to produce 600,000 tons of copper-gold concentrate and 15,000 tons of molybdenum concentrate annually.

The mine site is shown in figures M-001 through M-020. The fully developed mine site will include an open pit, tailings storage facility (TSF), power plant, water treatment plants, and milling/processing facilities as well as supporting infrastructure. All non-potentially acid generating (NPAG) waste rock will be used in the construction of infrastructure needed to support the mine. In addition to waste rock, a total of three quarries (material sites) will

[1] Design criteria as presented are approximate and have been averaged and rounded as appropriate for ease of reference.

also be needed. Figure M-001 provides an overview of the mine site. Figures M-003 through M-020 show the footprint associated with each mine site component.

Potentially acid generating (PAG) waste rock will be stored in the low grade ore (LGO) stockpile, which is a lined facility, until closure, when it will be back-hauled into the open pit. Bulk tailings will be placed in the bulk tailings cell in the TSF, while pyritic tailings will be placed in the lined pyritic tailings storage cell in the TSF. Soils will be stored in overburden stockpile areas located southwest of the open pit and north of the main TSF embankment. Stockpiled soils and overburden will be used for reclamation during mine closure. The TSF is shown in figures M-010, M-011, and M-014 through M-017.

18.2.2 Amakdedori Port

The port site is on the shore of Kamishak Bay near Amakdedori Creek. It will support the movement of equipment and modules for project construction, as well as serve as the long-term logistics hub for the Project. The Amakdedori Port is shown in figures P-001 through P-004.

The Amakdedori Port will include shore-based facilities to receive and store shipping containers and fuel, as well as power generation equipment, a natural gas compressor station for the natural gas pipeline, maintenance facilities, employee accommodations, and offices. A temporary airstrip (figures P-001 and P-002) will be constructed adjacent to the port site for crew transportation during construction.

The waterside improvements consist of an earthen access causeway extending out to a marine dock located in 15 feet of natural water depth. On one side will be a roll-on/roll-off barge access berth, with a separate berth on the opposite side for Handysize bulk carriers with a 50-foot-deep dredged channel and 1,200-foot-daimeter turning basin at the berth. The dredged channel will follow a navigation route approximately 4.2 miles to reach naturally deep water. During operations, up to 25 Handysize ships will be required annually for the transport of concentrate and up to 30 marine line-haul barge loads of supplies will be required annually.

All dredge material will be disposed of on uplands behind the marine terminal. The estimated initial dredge volume is 10,000,000 cubic yards. Maintenance dredging of the channel will also be required. Capacity for an additional 10,000,000 cubic yards of material from the maintenance dredging is included in the disposal area.

18.2.3 Transportation Corridor

Access Roads

The access road (figures T-001 through T-046) will have a 30-foot-wide top width (Figure TX-001), which will enable two-way traffic and support development and operational activities. The natural gas pipeline will be buried adjacent to the road bed shoulder. The access road consists of four segments:

- Amakdedori Port to South Ferry Terminal. This segment begins at the Amakdedori Port north of where Amakdedori Creek meets Cook Inlet and extends northwest to the South Ferry Terminal at Iliamna Lake west of Kokhanok; see figures T-001 through T-024.
- Kokhanok Airport Spur Road. This segment connects Kokhanok Airport with the port access road; see figures T-021 and T-022.
- North Ferry Terminal to mine site. This segment begins at the North Ferry Terminal at Iliamna Lake and extends north to the mine site; see figures T-025 through T-034 and T-039 through T-045.
- Iliamna Airport Spur Road. This segment extends northwest from Iliamna and connects with the mine access road, providing access to the Iliamna Airport; see figures T-035 through T-038.

Material sites are designated by the abbreviation "MS" and are shown on the figures for each of the four road segments.

Drainage and Water Crossing Structures

Stream crossings have been categorized based on stream width and fish presence to simplify stream crossing selection around a series of standardized conceptual culvert design categories. Larger streams and rivers fall under a bridge category for which site-specific designs have been developed. Stream categorization and crossing designs may change based on future field studies, particularly fish presence verification surveys.

Bridges

Bridges will be constructed to cross waterways with a width at OHW of 16 feet or greater. Bridge locations are shown in figures T-001 through T-046; conceptual level design drawings for each bridge are shown in figures BX-001 through BX-010.

Ferry Terminals

The Project incorporates an all-season ice-breaking ferry to operate across Iliamna Lake and connect the mine site and Amakdedori Port road segments. The ferry will typically complete one round trip across the lake per day.

Ferry terminals will be located on the north and south shores of Iliamna Lake. The North Ferry Terminal will be located west of Newhalen; the South Ferry Terminal will be located west of Kokhanok (figures I-001, P-003, P-004). Each ferry terminal site requires facilities for handling containers, a maintenance shop, storm water treatment area, generators for providing local power, an administration office, and a ferry landing area. The North Ferry Terminal will also contain a ferry construction and laydown area (Figure P-003) that will be used to support the construction and assembly of the ice breaking ferry.

18.2.4 Natural Gas Pipeline

Natural gas will be the primary energy source for the project. The natural gas pipeline will be designed to provide a gross flow rate of 50 million standard cubic feet per day. The steel pipeline will be designed to meet all required codes. It will be 10 inches in diameter except where it crosses the bed of Cook Inlet and the bed of Iliamna Lake, when the diameter will be increased to 12 inches. A fiber optic cable will be ploughed in, or buried in a shallow trench, adjacent to the pipeline. The natural gas pipeline route is shown in figures G-001 to G-012.

A gas pipeline metering station will be constructed at the connection to existing natural gas pipeline infrastructure near Happy Valley on the Kenai Peninsula. The pipeline will then head south, paralleling the Sterling Highway for 10 miles to a compressor station located on State of Alaska lands. Horizontal directional drilling will be used to install pipe segments from the compressor station out into Cook Inlet waters that are deep enough to avoid navigation hazards. The pipeline then heads southwest across Cook Inlet for 60 miles, before turning west for 34 miles to landfall at the Amakdedori Port. A second compressor station and offtake point is located at the port site. The pipeline then follows the transportation corridor from the port to the mine site, including crossing Iliamna Lake on the lake bed. The pipeline will be routed under stream crossings or attached to bridge crossings as appropriate along the road alignment.

Tab 19. Project Purpose

19.1 Project Purpose

The Project's purpose is to produce commodities, including copper, gold, and molybdenum, from the Pebble Deposit in a manner that is commercially viable using proven technologies that are suitable for the remote project location. Because the lease area is not served by existing infrastructure, achieving the project purpose requires the construction of facilities for the mining and processing of the mineral-bearing rock and the construction of support and access infrastructure. The purpose of the natural gas pipeline from the Kenai Peninsula is to provide a long-term stable supply of natural gas to meet the energy needs of the Project by connecting to the existing regional gas supply network.

The need for the proposed Project is to meet increasing global demand for commodities such as copper, gold, and molybdenum.

19.2 Project Schedule

The Pebble Project will take approximately four years to construct, following receipt of all necessary permits and authorizations. Construction will include temporary elements to support construction of permanent facilities. Detail regarding the methodology and sequencing of Project construction is provided in the Project Description.

Tab 20. Reasons for Discharge

Wetlands subject to U.S. Army Corps of Engineers (USACE) jurisdiction are present throughout the Pebble Project area, including the mine site, the Amakdedori Port, the transportation corridor, and the natural gas pipeline corridor, and are regulated as waters of the U.S. (WOUS) under Section 404 of the Clean Water Act (CWA). The marine components of the Project associated with Cook Inlet, Iliamna Lake, and other navigable waters are also regulated under Section 10 of the Rivers and Harbors Act (RHA).

The reason for the discharges into these regulated wetlands and waters is that the location of the Pebble Project and its associated facilities is determined directly by the location of the Deposit. To construct the mine and associated infrastructure, the deposition of fill into WOUS is unavoidable.

Tab 21. Type(s) of Material(s) Discharged

Tables 21-1 through 21-4: Estimated Port, Ferry Terminal, Access Road, Natural Gas Pipeline, and Mine Site Cut and Fill Volumes

Table 21-1. Estimated Port and Ferry Landings Cut and Fill Volumes

Description		Cut / Dredge* (CY)	Fill: Unconsolidated Gravel (CY)	Fill: Rip Rap (CY)
North Ferry Terminal	Wetlands (Section 404)	0	1,658	0
	Waters (Sections 404 and 10)	0	868	2,000
	Total Wetlands and Waters	**0**	**2,526**	**2,000**
	Total Uplands	0	35,882	0
South Ferry Terminal	Wetlands (Section 404)	0	4,891	0
	Waters (Sections 404 and 10)	0	1,691	2,000
	Total Wetlands and Waters	**0**	**6,582**	**0**
	Total Uplands	474,467	112,165	0
Amakdedori Port Site	Wetlands (Section 404)**	0	4,000	0
	Waters (Sections 404 and 10)	10,210,000	476,000	38,000
	Total Wetlands and Waters	**10,210,000**	**480,000**	**38,000**
	Total Uplands	0	85,000	0
Total Wetlands and Waters		**10,210,000**	**489,108**	**40,000**
Total Uplands		474,467	233,047	0

*Dredging for marine waters only
** Includes fill associated with air strip

Table 21-2. Estimated Access Roads Cut and Fill Volumes

Description		Cut / Dredge (CY)	Fill: Unconsolidated Gravel (CY)	Fill: Rip Rap (CY)
South Access Road	Wetlands (Section 404)	46,400	524,700	2,500
	Waters (Sections 404 and 10)	0	0	500
	Total Wetlands and Waters	**46,400**	**524,700**	**3,000**
	Total Uplands	1,983,600	2,725,300	4,000
Mine Access Road	Wetlands (Section 404)	70,800	616,000	1,000
	Waters (Sections 404 and 10)	0	0	900
	Total Wetlands and Waters	**70,800**	**616,000**	**1,900**
	Total Uplands	1,267,200	1,709,000	400
Kokhanok Airport Spur Road	Wetlands (Section 404)	3	1,200	0
	Waters (Section 10)	0	0	0
	Total Wetlands and Waters	**3**	**1,200**	**0**
	Total Uplands	61,850	26,550	0
Iliamna Airport Spur Road	Wetlands (Section 404)	3,100	25,800	800
	Waters (Sections 404 and 10)	0	0	0
	Total Wetlands and Waters	**3,100**	**25,800**	**800**
	Total Uplands	641,900	771,200	0
Explosive Storage Spur Road	Wetlands (Section 404)	50	2,800	100
	Waters (Sections 404 and 10)	0	0	0
	Total Wetlands and Waters	**50**	**2,800**	**100**
	Total Uplands	15,190	9,420	0
Total Wetlands and Waters		**120,353**	**1,170,500**	**5,800**
Total Uplands		3,969,740	5,241,470	4,400

Table 21-3. Estimated Natural Gas Pipeline Cut and Fill Volumes

Description	Temporary Excavation (CY)	Pipe and Bedding Fill Material (CY)	Fill: Rip Rap (CY)
Wetlands (Section 404)	4,110	1,910	0
Waters (Sections 404 and 10)	0	0	0
Total Wetlands and Waters	**4,110**	**1,910**	**0**
Total Uplands	62,800	29,360	0

Table 21-4. Estimated Mine Site Cut and Fill Volumes

Item Description	Cut Volume (CY)	Fill Type and Volume						Fill Volume Summary		
		Rock		Soils		Other				
		Wetlands (CY)	Uplands (CY)	Wetlands (CY)	Uplands (CY)	Wetlands (CY)	Uplands (CY)	Wetlands (CY)	Uplands (CY)	Total (CY)
Mill Site Container Yard	16,000	3,000	16,000	0	0	0	0	3,000	16,000	19,000
Crusher and Overland Conveyor	58,000	0	0	0	0	0	0	0	0	0
Truck Shop Pad	459,000	1,000	4,000	0	0	0	0	1,000	4,000	5,000
Mill Site Power Plant	179,000	126,000	840,000	0	0	0	0	126,000	840,000	966,000
Mill Site Process Plant	2,268,000	9,000	28,000	0	0	0	0	9,000	28,000	37,000
Mill Site Crushers Pad		112,000	745,000	0	0	0	0	112,000	745,000	857,000
Emergency Dump Pond	10,000	0	34,000	0	0	0	0	0	34,000	34,000
Growth Medium Stockpile - East Embankment	0	0	0	0	145,000	0	0	0	145,000	145,000
Growth Medium Stockpile - LGO	0	0	0	624,000	2,749,000	0	0	624,000	2,749,000	3,373,000
Growth Medium Stockpile - Main Embankment	0	0	0	1,004,000	964,000	0	0	1,004,000	964,000	1,968,000
Growth Medium Stockpile - Open Pit	0	0	0	0	2,891,000	0	0	0	2,891,000	2,891,000
Growth Medium Stockpile - Pyritic TSF	0	0	0	1,122,000	2,522,000	0	0	1,122,000	2,522,000	3,644,000
Growth Medium Stockpile - Quarry A	0	0	0	1,138,000	496,000	0	0	1,138,000	496,000	1,634,000
Growth Medium Stockpile - Quarry B	0	0	0	385,000	2,186,000	0	0	385,000	2,186,000	2,571,000

Item Description	Cut Volume (CY)	Fill Type and Volume						Fill Volume Summary		
		Rock		Soils		Other				
		Wetlands (CY)	Uplands (CY)	Wetlands (CY)	Uplands (CY)	Wetlands (CY)	Uplands (CY)	Wetlands (CY)	Uplands (CY)	Total (CY)
Growth Medium Stockpile - Quarry C	0	0	0	113,000	1,130,000	0	0	113,000	1,130,000	1,243,000
LGO Stockpile 0.5 ft Liner Bedding Material	3,372,000	0	0	0	0	330,000	182,000	330,000	182,000	512,000
LGO and Main Water Management Pond	22,444,000	0	1,767,000	0	0	0	0	0	1,767,000	1,767,000
LGO and Main Water Management Pond Sediment Pond Embankment	3,000	1,000	2,000	0	0	0	0	1,000	2,000	3,000
LGO Seepage Channel	16,000	21,000	0	0	0	0	0	21,000	0	21,000
Mill Site Laydown Area	626,000	546,000	65,000	0	0	0	0	546,000	65,000	611,000
Open Pit Water Management Pond	2,073,000	571,000	69,000	0	0	0	0	571,000	69,000	640,000
Open Pit Water Management Pond - Sediment Pond Embankment	8,000	7,000	0	0	0	0	0	7,000	0	7,000
Open Pit Overburden Stockpile	0	0	0	11,844,000	16,748,000	0	0	11,844,000	16,748,000	28,592,000
Open Pit Overburden Sediment Pond	691,000	0	0	0	0	0	0	0	0	0
Quarry A	58,683,000	0	0	0	0	0	0	0	0	0
Quarry B	109,717,000	0	0	0	0	0	0	0	0	0
Quarry C	49,210,000	0	0	0	0	0	0	0	0	0

Item Description	Cut Volume (CY)	Fill Type and Volume						Fill Volume Summary		
		Rock		Soils		Other				
		Wetlands (CY)	Uplands (CY)	Wetlands (CY)	Uplands (CY)	Wetlands (CY)	Uplands (CY)	Wetlands (CY)	Uplands (CY)	Total (CY)
Pyritic Tailings Facility 0.5-foot Liner Bedding Material	0	0	0	0	0	127,000	6,000	127,000	60,000	187,000
Roads - Haul	7,229,000	2,198,000	5,985,000	0	0	0	0	3,322,000	5,985,000	8,307,000
Roads - Access	899,000	153,000	356,000	0	0	0	0	153,000	356,000	509,000
Roads - Service	229,000	932,000	363,000	0	0	0	0	932,000	363,000	1,295,000
TSF East Embankment	145,000	0	2,130,000	0	0	0	0	0	2,130,000	2,130,000
TSF East Embankment Seepage Recycle Pond	15,000	0	57,000	0	0	0	0	0	57,000	57,000
TSF Internal Embankment	0	52,842,000	32,771,000	0	0	0	0	52,842,000	32,771,000	85,613,000
TSF Laydown	626,000	531,000	81,000	0	0	0	0	531,000	81,000	612,000
TSF Main Embankment	1,967,000	63,697,000	39,503,000	0	0	0	0	63,697,000	39,503,000	103,200,000
TSF Main Embankment Seepage Collection Pond Embankment	171,000	379,000	1,666,000	0	0	0	0	379,000	1,666,000	2,045,000
TSF Main Embankment Seepage Collection Pond - Sediment Pond Embankment	9,000	17,000	21,000	0	0	0	0	17,000	21,000	38,000
TSF Overburden Stockpile	0	0	0	5,456,000	1,454,000	0	0	5,456,000	1,454,000	6,910,000
TSF Pyritic Cell Preparation (With Internal and South Embankment)	3,644,000	0	0	0	0	0	0	0	0	0
TSF South Embankment Fill	0	22,980,000	14,252,000	0	0	0	0	22,980,000	14,252,000	37,232,000

Item Description	Cut Volume (CY)	Fill Type and Volume						Fill Volume Summary		
		Rock		Soils		Other				
		Wetlands (CY)	Uplands (CY)	Wetlands (CY)	Uplands (CY)	Wetlands (CY)	Uplands (CY)	Wetlands (CY)	Uplands (CY)	Total (CY)
TSF South Embankment Seepage Recycle Pond	18,000	83,000	74,000	0	0	0	0	83,000	74,000	157,000
TSF South Embankment Sediment Pond	6,000	7,000	1,000	0	0	0	0	7,000	1,000	8,000
Water Treatment Plant 1	0	29,000	0	0	0	0	0	29,000	0	29,000
Water Treatment Plant 2	1,097,000	0	0	0	0	0	0	0	0	0
WTP Discharge Locations North and South	55,000	91,000	0	0	0	0	0	91,000	0	91,000
Open Pit Materials (NPAG WR)	12,426,000	0	0	0	0	0	0	0	0	0
Landfill and Incinerator	77,000	44,000	31,000	0	0	0	0	44,000	31,000	75,000
Construction Camp	0	435,000	52,000	0	0	0	0	435,000	52,000	487,000
Potable Water WTP	1,000	0	58,000	0	0	0	0	0	58,000	58,000
Sewage Storage and WTP	31,000	0	4,000	0	0	0	0	0	4,000	4,000
Explosive Storage	1,000	1,000	4,000	0	0	0	0	1,000	4,000	5,000
Emulsion Plant	1,000	4,000	3,000	0	0	0	0	4,000	3,000	7,000
Total	278,480,000	145,820,000	100,982,000	21,686,000	31,285,000	457,000	188,000	169,087,000	132,509,000	300,596,000

Tab 22. Surface Area of Wetlands and Other Waters Filled

Tables 22-1 through 22-3: Mine Site - Surface Area in Acres of Wetlands or Other Waters to be Filled

Table 22-1. Mine Site - Surface Area in Acres of Wetlands or Other Waters to be Filled

	Feature																					
ENWI	Access Road	Bulk Tailings Storage Cell	Construction Camp	Emergency Dump Pond	Emergency Dump Pond Embankment	Emulsion Plant Site	Explosive Storage Site	Growth Medium Stockpile – East Embankment	Growth Medium Stockpile - LGO	Growth Medium Stockpile - Main Embankment	Growth Medium Stockpile - Open Pit	Growth Medium Stockpile - Pyritic TSF	Growth Medium Stockpile - Quarry A	Growth Medium Stockpile - Quarry B	Growth Medium Stockpile - Quarry C	Haul Road	Haul Road	Landfill and Incinerator	LGO and Main Water Management Pond Excavation	LGO and Main Water Management Pond Sediment Pond Embankment	LGO and Main Water Management Sediment Pond	LGO Seepage Channel
L2USC																						
PAB3H																			1.44			
PEM1/ML1B	1.36	0.11											0.31			0.35	0.49					
PEM1/ML1B:U																						
PEM1/ML1C	0.07																					
PEM1/ML1Cb	0.25																					
PEM1/SS1A																	0.14					
PEM1/SS1A:U		2.00																				
PEM1/SS1B	0.00	31.34							0.17	0.40					0.22	0.08	2.51		1.35			
PEM1/SS1B:U	0.39	16.93								0.55		1.13				0.04	3.94		0.19			
PEM1/SS1C	0.18	3.49								0.01		0.08					1.27		0.09			
PEM1/SS1C:U	0.22	1.66																	0.13			
PEM1/SS1Cb																						
PEM1/SS1Cb:U	0.01																					
PEM1A		0.81																				
PEM1A:U									0.51								0.29					
PEM1B	1.47	103.87								1.03		0.29	1.97		0.26		8.23		3.12			
PEM1B:U	0.30	7.98							0.08							0.10	1.00		0.44			
PEM1C	1.13	19.69										0.48	0.20			0.05	2.86		4.05		0.33	0.38
PEM1C:U	0.06	1.59															0.14		0.83			
PEM1Cb																0.35						
PEM1Cb:U																						
PEM1F	0.10	10.72															0.13				0.02	
PEM1Fb	0.01	0.34																	0.43			
PEM2F																						

	Feature																					
ENWI	Access Road	Bulk Tailings Storage Cell	Construction Camp	Emergency Dump Pond	Emergency Dump Pond Embankment	Emulsion Plant Site	Explosive Storage Site	Growth Medium Stockpile – East Embankment	Growth Medium Stockpile - LGO	Growth Medium Stockpile - Main Embankment	Growth Medium Stockpile - Open Pit	Growth Medium Stockpile - Pyritic TSF	Growth Medium Stockpile - Quarry A	Growth Medium Stockpile - Quarry B	Growth Medium Stockpile - Quarry C	Haul Road	Haul Road	Landfill and Incinerator	LGO and Main Water Management Pond Excavation	LGO and Main Water Management Pond Sediment Pond Embankment	LGO and Main Water Management Sediment Pond	LGO Seepage Channel
PEM2Fb	0.05																					
PSS1/EM1A		1.92																				
PSS1/EM1A:U		1.56																				
PSS1/EM1B	3.05	127.23							1.83	0.15			8.12		0.22	1.47	11.37		2.06			
PSS1/EM1B:U	5.21	89.11	2.19							0.01		8.47	2.10		0.06	1.08	14.50		4.64			
PSS1/EM1C	0.95	18.53														0.08	8.57		0.52	0.04	0.41	0.78
PSS1/EM1C:U		1.85	0.05														1.94		0.84			
PSS1/EM1Cb																			0.92			
PSS1/EM1Cb:U	0.11																					
PSS1/ML1B		4.23																				
PSS1/ML1B:U																0.03						
PSS1A		2.05																	0.33			0.17
PSS1A:U	0.25	10.68															0.27		0.62			0.02
PSS1B	0.96	200.28							0.60	0.16		0.01	3.40			0.12	9.62		1.85			
PSS1B:U	5.47	128.98								1.33			0.37	2.50	0.29	0.51	17.49		12.87			
PSS1C	0.29	7.56															0.41		1.92			0.02
PSS1C:U		5.76								0.21						0.01	0.30	1.31	0.84			0.07
PUBF																			0.26			
PUBH	0.43	1.34														0.63	0.08		2.40			
PUBHb	0.42															0.08			0.81			0.01
PUS/EM1C																			0.10			
PUSA																						
PUSC																0.16	0.84		1.33			
R3UBF																						
R3UBH	0.25	10.23	0.01						0.08			0.06				0.10	0.51		1.01	0.01	0.07	0.21
R3USC		0.33																	0.05			0.01
R4SBC	0.05	1.00	0.10						0.01							0.03	0.05		0.00			0.00
U:PEM1/ML1B																	1.93					
U:PEM1/SS1A		1.44															0.31					
U:PEM1/SS1B	0.04	10.51	0.01			0.04	0.00					0.29				0.41	3.21					
U:PEM1A		3.40																	0.09			

	Feature																					
ENWI	Access Road	Bulk Tailings Storage Cell	Construction Camp	Emergency Dump Pond	Emergency Dump Pond Embankment	Emulsion Plant Site	Explosive Storage Site	Growth Medium Stockpile – East Embankment	Growth Medium Stockpile - LGO	Growth Medium Stockpile - Main Embankment	Growth Medium Stockpile - Open Pit	Growth Medium Stockpile - Pyritic TSF	Growth Medium Stockpile - Quarry A	Growth Medium Stockpile - Quarry B	Growth Medium Stockpile - Quarry C	Haul Road	Haul Road	Landfill and Incinerator	LGO and Main Water Management Pond Excavation	LGO and Main Water Management Pond Sediment Pond Embankment	LGO and Main Water Management Sediment Pond	LGO Seepage Channel
U:PEM1B	0.84	6.40														0.05	0.30		1.57			
U:PEM1C		2.60																	0.26			
U:PSS1/EM1A		3.37															0.38		0.24			
U:PSS1/EM1B	0.87	39.33							1.52			2.04	1.75	3.07		0.09	23.54	4.59	10.13			
U:PSS1/EM1C																					0.02	
U:PSS1A	1.16	17.48														0.05	0.97		2.84			0.07
U:PSS1Ab																			0.78			
U:PSS1B	6.34	185.42	3.51			0.23			1.83	13.65		1.59	0.66	0.02	0.93	2.95	35.04		10.33			0.15
U:PSS1C																	0.24		0.41			
Total Wetlands	32.29	1083.12	5.87	0.00	0.00	0.27	0.00	0.00	6.63	17.48	0.00	14.44	18.88	5.59	1.97	8.85	152.87	5.90	72.09	0.05	0.86	1.89
Total Uplands	42.76	770.44	1.89	1.22	1.84	0.19	0.44	3.75	25.23	16.90	32.09	32.49	6.29	31.94	17.99	43.46	334.48	4.11	96.57	0.47	1.05	0.65

Table 22-2. Mine Site - Surface Area in Acres of Wetlands or Other Waters to be Filled

	Feature																							
ENWI	LGO Stockpile	Mill Camp and Administration Buildings	Mill Site Container Yard	Mill Site Crusher and Conveyor	Mill Site Laydown Area	Mill Site Power Plant	Mill Site Process Plant	Open Pit	Open Pit Overburden Stockpile	Open Pit Overburden Stockpile Sediment Pond	Open Pit Sediment Pond	Open Pit Sediment Pond Embankment	Open Pit Water Management Pond	Potable Water WTP	Pyritic Tailings Storage Cell	Quarry A	Quarry B	Quarry C	Rom Pad	Service Road	Sewage Storage Tank and WTP	Truck Shop Pad	TSF East Embankment	TSF East Embankment Seepage Recycle Pond
L2USC																								
PAB3H																								
PEM1/ML1B	2.24			0.05				7.01	3.70	0.35			19.01							7.60				
PEM1/ML1B:U									0.04															
PEM1/ML1C	0.60							2.52	0.43											2.55		0.07		
PEM1/ML1Cb									0.11	0.35														
PEM1/SS1A	0.28																							
PEM1/SS1A:U															0.42									
PEM1/SS1B	18.92							4.85	1.03				0.07		4.83				0.32	0.72		0.41		
PEM1/SS1B:U								3.75	0.98	0.48								0.93		0.39				
PEM1/SS1C	7.75							0.67			0.74	0.38	1.57				0.60			0.54		0.59		
PEM1/SS1C:U																				0.42				
PEM1/SS1Cb																				0.11				
PEM1/SS1Cb:U																				0.03				
PEM1A															0.03									
PEM1A:U	1.82												0.72		0.87									
PEM1B	38.22			0.11	11.80			6.43	2.59	0.54	0.02		7.10		6.74	3.59			0.04	1.86		1.44		
PEM1B:U	1.73							1.83	0.85		0.02				0.93					0.36				
PEM1C	25.29				4.81			14.38	1.58		0.02	0.13			2.18	0.01	2.39			1.04				
PEM1C:U	0.00												0.03							0.03				
PEM1Cb	0.15									0.21									0.10	0.01				
PEM1Cb:U																				0.06				
PEM1F	1.19			0.01				0.09	0.02		0.23	0.19					0.20			1.20				
PEM1Fb																								
PEM2F	0.05							0.90																
PEM2Fb											0.00	0.04												
PSS1/EM1A															0.29									
PSS1/EM1A:U											0.55	0.13	0.43		0.27									
PSS1/EM1B	82.59				0.79			13.83	1.67	1.50		0.01	4.50		13.16	2.66			0.35	10.85		1.35		
PSS1/EM1B:U	35.70			0.42	4.75			22.93	8.32	0.55			4.89		8.24	2.07			0.44	4.90		0.01		
PSS1/EM1C	5.10				8.34			4.02	0.12		0.01		0.22				5.60			0.13				
PSS1/EM1C:U	3.32										0.04													
PSS1/EM1Cb										0.33	0.17	0.10								0.14				
PSS1/EM1Cb:U											0.03	0.07												

	Feature																						
ENWI	LGO Stockpile	Mill Camp and Administration Buildings	Mill Site Container Yard	Mill Site Crusher and Conveyor	Mill Site Laydown Area	Mill Site Power Plant	Mill Site Process Plant	Open Pit	Open Pit Overburden Stockpile	Open Pit Overburden Stockpile Sediment Pond	Open Pit Sediment Pond	Open Pit Sediment Pond Embankment	Open Pit Water Management Pond	Potable Water WTP	Pyritic Tailings Storage Cell	Quarry A	Quarry B	Quarry C	Rom Pad	Service Road	Sewage Storage Tank and WTP	Truck Shop Pad	TSF East Embankment	TSF East Embankment Seepage Recycle Pond
PSS1/ML1B								3.85	0.39											0.13				
PSS1/ML1B:U					0.39			0.07					1.04							0.51		0.19		
PSS1A	2.64														0.16									
PSS1A:U	2.07														5.73									
PSS1B	22.04			0.42	0.63			1.71	1.04		0.14	0.29	0.77		27.67		1.22	0.28		0.69		0.00		
PSS1B:U	39.51			0.01	4.59	0.55		21.41	8.09	0.87			4.72		24.22	0.53	2.96			1.73		0.39		
PSS1C	1.55							0.21	0.46						0.07		4.17	0.87						
PSS1C:U	4.74							0.42									2.10			0.23				
PUBF								0.66												0.50				
PUBH	0.92							5.06	3.96	0.39	0.03	0.02	0.12		0.04				0.66	1.96		2.06		
PUBHb								1.22	1.73	0.14	0.07	0.10								0.03				
PUS/EM1C	0.06							0.08	0.04															
PUSA																				0.13				
PUSC	0.38							0.38												0.26				
R3UBF															0.00									
R3UBH	3.37			0.05				1.43	0.58	0.05	0.03		0.18		1.49		0.05		0.06	0.30		0.03		
R3USC	0.14							0.15																
R4SBC	0.18		0.00	0.00				0.09	0.06						0.35	0.02				0.03				
U:PEM1/ML1B																								
U:PEM1/SS1A															0.67									
U:PEM1/SS1B						2.16		3.73	2.37									7.52	0.17	0.19				
U:PEM1A								0.03																
U:PEM1B	0.36			0.02		0.21		2.89	0.71						0.25			0.04		0.09				
U:PEM1C																								
U:PSS1/EM1A																								
U:PSS1/EM1B	16.24			0.09		0.57		6.28	3.22	0.31					6.56	1.72	1.34	3.96		1.77		0.13		
U:PSS1/EM1C																								
U:PSS1A	1.08							2.04	3.52	0.30			0.82		4.13					1.21				
U:PSS1Ab																								
U:PSS1B	85.30		0.19	0.11	11.41	0.69	0.18	42.77	31.24	1.60			11.75		47.77	2.22	4.83	5.84	0.55	12.77		1.62		
U:PSS1C	1.00																15.27							
Total Wetlands	406.53	0.00	0.19	1.29	47.51	4.18	0.18	177.69	78.85	7.97	2.1	1.46	57.94	0.00	157.07	12.82	40.73	19.44	2.69	55.47	0.00	8.29	0.00	0.00
Total Uplands	225.22	7.82	4.68	20.30	4.46	18.08	35.56	367.35	115.73	5.60	0.00	0.00	8.34	2.12	73.60	6.17	530.75	282.10	5.54	91.29	7.67	13.02	4.51	2.91

Table 22-3. Mine Site - Surface Area in Acres of Wetlands or Other Waters to be Filled

	Feature																				
ENWI	TSF East Embankment Seepage Recycle Pond Embankment	TSF Internal Embankment	TSF Laydown	TSF Main Embankment	TSF Main Embankment Seepage Collection Pond*	TSF Main Embankment Seepage Collection Pond - Sediment Pond	TSF Main Embankment Seepage Collection Pond - Sediment Pond Embankment	TSF Main Embankment Seepage Collection Pond Embankment	TSF Overburden Stockpile	TSF South Embankment	TSF South Embankment Sediment Pond	TSF South Embankment Sediment Pond Embankment	TSF South Embankment Seepage Recycle Pond*	TSF South Embankment Seepage Recycle Pond Embankment	Water Treatment Plant 1	Water Treatment Plant 2	Water Treatment Plant Discharge Fields - East	Water Treatment Plant Discharge Fields - North	Water Treatment Plant Discharge Fields - South	Potable Water Well Field Road	Grand Total
L2USC																			0.06		0.06
PAB3H																					1.44
PEM1/ML1B																			0.10		42.68
PEM1/ML1B:U																					0.04
PEM1/ML1C																			1.67		7.92
PEM1/ML1Cb																			-		0.72
PEM1/SS1A																					0.42
PEM1/SS1A:U		1.57																			3.99
PEM1/SS1B		0.45	0.07	4.62					1.96	1.36	0.23	0.07					1.26				77.26
PEM1/SS1B:U		0.81		0.52					0.07	5.45											36.54
PEM1/SS1C			0.25						0.70												18.90
PEM1/SS1C:U				0.01	0.08										0.06						2.59
PEM1/SS1Cb																					0.11
PEM1/SS1Cb:U																					0.04
PEM1A		0.23																			1.07
PEM1A:U		1.15																			5.36
PEM1B		11.89	0.28	15.07	0.58				7.59	18.43			0.07	0.15	0.14	0.22	0.05		0.76		255.94
PEM1B:U		0.19		0.63						0.69	0.01		0.10	0.41							17.65
PEM1C		8.52	0.17	6.43	0.11				0.51	4.31			0.35			0.03			0.33	0.03	101.78
PEM1C:U		0.24		0.02																	2.94
PEM1Cb																					0.82
PEM1Cb:U																					0.06
PEM1F		0.32		0.04						0.02											14.48
PEM1Fb																					0.78
PEM2F																					0.95
PEM2Fb																					0.09
PSS1/EM1A		0.21								0.01											2.43
PSS1/EM1A:U		0.98		0.23																	4.15
PSS1/EM1B		12.78	0.72	26.80					7.20	17.97		0.10	2.08	0.40	2.27	0.00	0.45		0.10		359.62
PSS1/EM1B:U		9.34		37.61					0.43	0.32	0.17	0.54	0.01				0.69				269.71
PSS1/EM1C		0.00		2.65					0.04	0.15										0.30	56.56

	Feature																				
ENWI	TSF East Embankment Seepage Recycle Pond Embankment	TSF Internal Embankment	TSF Laydown	TSF Main Embankment	TSF Main Embankment Seepage Collection Pond*	TSF Main Embankment Seepage Collection Pond - Sediment Pond	TSF Main Embankment Seepage Collection Pond - Sediment Pond Embankment	TSF Main Embankment Seepage Collection Pond Embankment	TSF Overburden Stockpile	TSF South Embankment	TSF South Embankment Sediment Pond	TSF South Embankment Sediment Pond Embankment	TSF South Embankment Seepage Recycle Pond*	TSF South Embankment Seepage Recycle Pond Embankment	Water Treatment Plant 1	Water Treatment Plant 2	Water Treatment Plant Discharge Fields - East	Water Treatment Plant Discharge Fields - North	Water Treatment Plant Discharge Fields - South	Potable Water Well Field Road	Grand Total
PSS1/EM1C:U				1.89	0.34				0.93												11.20
PSS1/EM1Cb																					1.66
PSS1/EM1Cb:U																					0.21
PSS1/ML1B																					8.59
PSS1/ML1B:U																					2.22
PSS1A		0.42								0.10											5.86
PSS1A:U		1.97		0.05	0.80					1.62											24.09
PSS1B		26.27	0.31	12.98	0.43				6.29	15.87							0.65				336.72
PSS1B:U		40.22	6.87	34.46	1.38				7.92	26.95						1.44	0.03				398.66
PSS1C				0.10	0.03				3.05	1.30			0.86							0.10	22.98
PSS1C:U				0.36	2.81				0.02									0.10			19.28
PUBF																					1.42
PUBH		0.20		0.04	0.36			0.46	0.03												21.18
PUBHb																					4.63
PUS/EM1C																					0.28
PUSA																					0.13
PUSC			0.04						0.17												3.55
R3UBF		0.02								0.01			0.02	0.03							0.08
R3UBH		2.63	0.06	1.31	1.52	0.17	0.08	0.21	0.26	1.27	0.04	0.03	0.04	0.03		0.00	0.06	0.19	0.38		28.43
R3USC		0.09		0.05	0.09			0.01										0.00			0.93
R4SBC		0.68		0.21					0.03	0.19			0.01								3.10
U:PEM1/ML1B																					1.93
U:PEM1/SS1A		0.34																			2.75
U:PEM1/SS1B		0.34		2.93						0.74											34.66
U:PEM1A		0.37			0.15			0.12									0.03				4.20
U:PEM1B		3.74		0.66					0.10	0.75	0.15			0.50							19.63
U:PEM1C																					2.85
U:PSS1/EM1A		0.74		0.27																	5.00
U:PSS1/EM1B		5.61	1.65	7.69						5.45	0.25	0.30		0.23		0.49					150.80
U:PSS1/EM1C																					0.02

	Feature																				
ENWI	TSF East Embankment Seepage Recycle Pond Embankment	TSF Internal Embankment	TSF Laydown	TSF Main Embankment	TSF Main Embankment Seepage Collection Pond*	TSF Main Embankment Seepage Collection Pond - Sediment Pond	TSF Main Embankment Seepage Collection Pond - Sediment Pond Embankment	TSF Main Embankment Seepage Collection Pond Embankment	TSF Overburden Stockpile	TSF South Embankment	TSF South Embankment Sediment Pond	TSF South Embankment Sediment Pond Embankment	TSF South Embankment Seepage Recycle Pond*	TSF South Embankment Seepage Recycle Pond Embankment	Water Treatment Plant 1	Water Treatment Plant 2	Water Treatment Plant Discharge Fields - East	Water Treatment Plant Discharge Fields - North	Water Treatment Plant Discharge Fields - South	Potable Water Well Field Road	Grand Total
U:PSS1A		8.94	0.25	14.05	13.59	1.80	0.60	2.37	0.06								0.15	2.52			79.98
U:PSS1Ab																					0.78
U:PSS1B		59.26	4.31	53.07	3.51	0.33		0.80	22.59	19.17			0.01			1.37					687.89
U:PSS1C					0.84																17.76
Total Wetlands	0.00	200.52	14.98	224.75	26.62	2.30	0.68	3.97	59.95	122.13	0.85	1.04	3.55	1.75	2.47	3.55	3.37	2.81	3.40	0.43	3190.55
Total Uplands	2.64	87.53	17.45	124.87	50.67	3.05	0.87	17.47	16.49	43.56	1.36	0.09	1.66	1.55	0.00	11.38	0.00	0.57	0.00	2.37	3,682.8

* No fill placement in wetlands or waters; area to be inundated, resulting in functional change.

Table 22-4. Mine Site - Surface Area in Acres of Wetlands or Other Waters to be Filled - Totals

Sum of Acres	
ENWI	Acres
L2USC	0.06
PAB3H	1.44
PEM1/ML1B	42.68
PEM1/ML1B:U	0.04
PEM1/ML1C	7.92
PEM1/ML1Cb	0.72
PEM1/SS1A	0.42
PEM1/SS1A:U	3.99
PEM1/SS1B	77.26
PEM1/SS1B:U	36.54
PEM1/SS1C	18.90
PEM1/SS1C:U	2.59
PEM1/SS1Cb	0.11
PEM1/SS1Cb:U	0.04
PEM1A	1.07
PEM1A:U	5.36
PEM1B	255.94
PEM1B:U	17.65
PEM1C	101.78
PEM1C:U	2.94
PEM1Cb	0.82
PEM1Cb:U	0.06
PEM1F	14.48
PEM1Fb	0.78
PEM2F	0.95
PEM2Fb	0.09
PSS1/EM1A	2.43
PSS1/EM1A:U	4.15
PSS1/EM1B	359.62
PSS1/EM1B:U	269.71
PSS1/EM1C	56.56
PSS1/EM1C:U	11.20
PSS1/EM1Cb	1.66
PSS1/EM1Cb:U	0.21
PSS1/ML1B	8.59

Sum of Acres	
ENWI	Acres
PSS1/ML1B:U	2.22
PSS1A	5.86
PSS1A:U	24.09
PSS1B	336.72
PSS1B:U	398.66
PSS1C	22.98
PSS1C:U	19.28
PUBF	1.42
PUBH	21.18
PUBHb	4.63
PUS/EM1C	0.28
PUSA	0.13
PUSC	3.55
R3UBF	0.08
R3UBH	28.43
R3USC	0.93
R4SBC	3.10
U:PEM1/ML1B	1.93
U:PEM1/SS1A	2.75
U:PEM1/SS1B	34.66
U:PEM1A	4.20
U:PEM1B	19.63
U:PEM1C	2.85
U:PSS1/EM1A	5.00
U:PSS1/EM1B	150.80
U:PSS1/EM1C	0.02
U:PSS1A	79.98
U:PSS1Ab	0.78
U:PSS1B	687.89
U:PSS1C	17.76
Total Wetlands/Waters	**3,190.55**

Table 22-5. Access Road - Surface Area in Acres of Wetlands or Other Waters to be Filled

	Roads				Material Sites																	Bridges							
ENWI	South Access Road	Kokhanok Airport Spur Road	Mine Access Road	Iliamna Airport Spur Road	MS-A01	MS-A02	MS-A03	MS-A04	MS-A05	MS-A06	MS-A07	MS-A08	MS-N01	MS-N02	MS-N03	MS-T01	MS-T02	MS-T03	MS-T04	MS-T05	MS-T06	MS-T07	South Creek 1 Bridge	South Creek 2 Bridge	South Creek 3 Bridge	Bridge Lake Bridge	Newhalen River Bridge	Gibraltar River Bridge	Upper Talarik Creek Bridge	Total
L1UBH	0.01																													0.01
L2USC	0.06																													0.06
PABH	0.14																													0.14
PEM1/ML1B	0.32																													0.32
PEM1/SS1B	0.47																													0.47
PEM1/SS1B:U	0.99																													0.99
PEM1/SS1C	5.52		0.45							0.26																				6.23
PEM1/SS1F	1.77																													1.77
PEM1/SS3C	0.03																													0.03
PEM1/USC	0.08																													0.08
PEM1B	0.82		0.47			0.73																								2.02
PEM1B:U	0.48																													0.48
PEM1C	2.34		0.87	0.12								0.23																		3.56
PEM1Cb	0.1		0.08																											0.18
PEM1F	3.2			0.01																										3.21
PEM1Fb																														0.00
PEM1H																														0.00
PSS1/3B	0.55																													0.55
PSS1/3C	2.23																													2.23
PSS1/3F	0.02																													0.02
PSS1/EM1B	5.24		0.2																											5.44
PSS1/EM1B:U	0.86															0.85														1.71
PSS1/EM1C	9.95		0.88	0.77							0.03	0.05																		11.68
PSS1/EM1Cb	0.04		0.26	0.04																										0.34
PSS1/EM1Cb:U				0.05																										0.05
PSS1/EM1F	0.74																													0.74
PSS1/EM1H																														0.00
PSS1/F01A:U			0.38																										0.05	0.43
PSS1/ML1B	0.31		0.01																											0.32
PSS1A:U	0.38		0.4																											0.78
PSS1B	2.08		2.91	0.29								0.1																		5.38
PSS1B:U	7.66		1																											8.66
PSS1C	3.84		0.22					0.02																						4.08

	Roads				Material Sites																	Bridges							
ENWI	South Access Road	Kokhanok Airport Spur Road	Mine Access Road	Iliamna Airport Spur Road	MS-A01	MS-A02	MS-A03	MS-A04	MS-A05	MS-A06	MS-A07	MS-A08	MS-N01	MS-N02	MS-N03	MS-T01	MS-T02	MS-T03	MS-T04	MS-T05	MS-T06	MS-T07	South Creek 1 Bridge	South Creek 2 Bridge	South Creek 3 Bridge	Bridge Lake Bridge	Newhalen River Bridge	Gibraltar River Bridge	Upper Talarik Creek Bridge	Total
PSS1C:U			0.17																										0.17
PSS1Cb	0.11																												0.11
PSS1Cb:U	0.16																												0.16
PSS1F	0.15																												0.15
PSS3/1B	1.06																												1.06
PSS3/1C	0.49																												0.49
PSS3/EM1B	0.18	0.03		0.07																									0.28
PSS3/EM1C	0.7	0.17																											0.87
PSS3/EM1F	0.1																												0.10
PUBF	2.76		0.03																										2.79
PUBH	2.63											0.01																	2.64
PUBHb	0.11																												0.11
PUSC			0.01																										0.01
PUSF	0.08											0.08																	0.16
R3UBH	1.17		0.19	0.08																								0.01	1.45
R3USC			0.03																									0.01	0.04
R4SBC	0.23		0.02	0.03				0.01				0.02																	0.31
U:PEM1/SS1Ab																													0.00
U:PEM1/SS1B	0.37																												0.37
U:PEM1B	0.38		0.02																										0.40
U:PSS1/EM1B	1.77		0.07													0.10														1.94
U:PSS1/EM1C	0.14																												0.14
U:PSS1/FO1A	0.03																											0.02	0.05
U:PSS1A	2.69		0.12																										2.81
U:PSS1Ab	0.01																												0.01
U:PSS1B	15.78		1.18	1.13												0.05												0.02	18.16
Total Wetlands	81.33	0.20	9.97	2.59	0.00	0.73	0.00	0.03	0.00	0.26	0.03	0.49	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	96.74
Total Uplands	421.41	14.93	222.67	90.35	9.27	8.55	19.91	22.27	18.83	18.85	19.57	21.15	8.95	9.3	8.99	9.43	12.5	14.54	9.65	9.17	9.31	14.34	0.10	0.07	0.09	0.08	0.01	0.01	0.10	994.4

Tables 22-6 through 22-8: Port and Ferry Landings - Surface Area in Acres of Wetlands or Other Waters to be Filled

Table 22-6. Port Site Marine Terminal Project Components (in acres)

Wetland Type	Port Site Airstrip	Port Site Dredge Channel	Onshore Dredge Stockpile Access Road	Onshore Dredge Stockpile Containment Berm	Port Site Terminal	Navigation Light	Range Marker	Grand Total
M1UBL		367.45			9.12	3.25	0.34	**380.16**
M2US1N					0.41			**0.41**
M2US1P					0.32			**0.32**
PEM1B	0.37							**0.37**
PEM1C							0.02	**0.02**
Total Wetlands and Waters	**0.37**	**367.45**	**0.00**	**0.00**	**9.85**	**3.25**	**0.36**	**381.28**
Total Uplands	1.30	0.00	0.21	178.49	13.55	0.00	0.32	193.87

Table 22-7. South Ferry Terminal Landing Project Components (in acres)

Wetland Type	Ferry Mooring Point	Mooring Buoy with Navigation Lights	South Ferry Terminal Construction and Laydown Area	South Ferry Terminal	Grand Total
L1UBH		0.01		0.26	**0.27**
L2USC			0.62	0.10	**0.72**
PEM1C			0.11		**0.11**
Total Wetlands and Waters	**0.00**	**0.01**	**0.73**	**0.36**	**1.10**
Total Uplands	0.01	0.00	16.50	5.20	21.71

Table 22-8. North Ferry Terminal Landing Project Components (in acres)

Wetland Type	Ferry Mooring Point	Mooring Buoy with Navigation Lights	North Ferry Terminal	Grand Total
L1UBH		0.01	0.10	**0.11**
L2USC			0.07	**0.07**
PEM1C			0.05	**0.05**
PSS1B			0.17	**0.17**
Total Wetlands and Waters	**0.00**	**0.01**	**0.39**	**0.40**
Total Uplands	0.01	0.00	3.80	3.81

Table 22-9. Natural Gas Pipeline – Surface Area in Acres of Wetlands or Other Waters to Be Filled

Wetland Type	Buried Pipeline Work Area - Amakdedori	Buried Pipeline Work Area - Kenai Peninsula	Buried Pipeline Work Area - North Ferry Terminal	Buried Pipeline Work Area - South Ferry Terminal	Trenched Pipeline in Cook Inlet Disturbance Limit	Trenched Pipeline in Iliamna Lake Disturbance Limit	Metering Station Pad	Compressor Station and Laydown Area	Compressor Station Access Road	Buried Pipeline Work Area - Kenai Peninsula	HDD Pullback Work Area	Grand Total
L1UBH						65.55						65.55
L2USC						0.05						0.05
M1UBL					340.66							340.66
M2US1N					0.08							0.08
M2US1P					0.07							0.07
Drainageway		0.49										0.49
Kettle		1.11										1.11
Tidal		0.06										0.06
Riparian		0.38										0.38
Total Wetlands	**0.00**	**2.04**	**0.00**	**0.00**	**340.81**	**65.60**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**408.45**
Total Uplands	0.28	0.00	0.06	0.27	0.00	0.00	0.00	4.10	0.66	31.57	0.39	32.32

Tab 23. Description of Avoidance, Minimization, and Compensation

The Project design presented by PLP in this application includes numerous measures to avoid and minimize impacts to wetlands and other WOUS, air quality, wildlife and aquatic habitat, areas of cultural significance, and areas of known subsistence use. Notable measures that have significantly reduced these impacts include the following:

- The Project plan has been limited to mining the near-surface portion of the Pebble Deposit. This has significantly reduced the footprint of the open pit, TSF, and mine facilities, as well as eliminated the need for a permanent waste rock storage facility.
- The layout was designed to consolidate the majority of the site infrastructure in a single drainage, the North Fork Koktuli, and avoid the placement of waste rock or tailings in the Upper Talarik Creek drainage.
- The transportation corridor incorporates a ferry crossing of Iliamna Lake to connect the mine site to a marine port on Cook Inlet, significantly reducing the total access road length and associated impacts relative to a longer access road around Iliamna Lake. The road alignment was further refined to avoid areas of known subsistence and recreational use and to minimize wetland impacts.
- A natural gas pipeline and gas-fired electrical generation to power the Project reduce air emissions and the need to transport and store diesel fuel for power generation.
- The segregated bulk and pyritic tailings storage cells, including a fully lined facility for the pyritic tailings, minimize water quality impacts and facilitate closure.
- The lined LGO stockpile to store pyritic waste rock during operations (after which it will be backhauled to the pit for sub-aqueous storage in the pit lake) avoids the need for post-closure management of a PAG waste rock storage facility.
- The use of an advanced surplus water release strategy to distribute water to down gradient streams and reduce the effect of flow changes on fish habitat.

The Project design will be evaluated in detail through the CWA 404 permitting and National Environmental Policy Act (NEPA) processes and the associated Environmental Impact Statement (EIS), which will further analyze potential measures and alternatives to avoid and minimize project impacts. PLP will work with USACE to identify further opportunities to avoid and minimize potential impacts identified during the permitting and associated public review process.

The 2008 *Compensatory Mitigation for Losses of Aquatic Resources: Final Rule* established mechanisms to provide compensatory mitigation for unavoidable impacts to WOUS, and

mitigation will be considered in detail throughout the permitting and NEPA processes. PLP will work with USACE throughout the process to identify and implement a compensatory mitigation plan that is appropriate for the final Project.

Tab 25. Adjoining Property Owners

Table 25-1. Adjoining Federal, State of Alaska, Local, and Native Corporation Landowners

Owner	Attention	Mailing Address	City, State, Zip Code	Additional Information
Federal Landowners				
Bureau of Land Management	Karen Mouritsen, Acting State Director	222 W 7th Ave #13	Anchorage, AK 99513	kmourits@blm.gov
	Ted Murphy, Associate State Director	223 W 7th Ave #13	Anchorage, AK 99514	t75murph@blm.gov
	Steve Cohn, Deputy State Director, Resources	224 W 7th Ave #13	Anchorage, AK 99515	scohn@blm.gov
State Landowners				
Alaska Department of Natural Resources	Commissioner Andrew T. Mack	550 W. 7th Ave, Ste 1400	Anchorage, AK 99501-3561	andy.mack@alaska.gov
	Deputy Commissioner Heidi Hansen	550 W. 7th Ave, Ste 1400	Anchorage, AK 99501-3579	heidi.hansen@alaska.gov
	Division Director Brent Goodrum,	550 W. 7th Ave, Ste 1070	Anchorage, AK 99501-3579	brent.goodrum@alaska.gov
ADF&G	Commissioner Sam Cotten	PO Box 115526	Juneau, AK 99811-5526	sam.cotten@alaska.gov
ADOT&PF	Commissioner Mark Luiken	PO Box 112500	Juneau, AK 99811	mark.luiken@alaska.gov
University of Alaska Anchorage		Statewide Office of Land Management 1815 Bragaw St, Ste 101	Anchorage, AK 99508	
Local and Native Corporation Landowners				

Owner	Attention	Mailing Address	City, State, Zip Code	Additional Information
Lake and Peninsula Borough	Nathan Hill, Manager	PO Box 495	King Salmon, AK 99613	Kate Conley, CMC, Borough Clerk manager@lakeandpen.com kateconley@lakeandpen.com
Kenai Peninsula Borough	Charlie Pierce	144 North Binkley Street	Soldotna, AK 99669	cpierce@kpb.us
Alaska Peninsula Corporation	Trefon Angansan, Jr., Chairman of the Board	2221 E. Northern Lights Blvd., Ste 119	Anchorage, AK 99508	Dave McAlister, Operations Manager Telephone: 907-274-2433 Fax: 907-274-8694 http://www.alaskapeninsulacorp.com
Bristol Bay Native Corporation	Jason Metrokin, President and CEO	111 West 16th Avenue, Ste 400	Anchorage, AK 99501	
Newhalen Village Council		P.O. Box 165	Iliamna, AK 99606	
Iliamna Natives Limited		PO Box 241588	Anchorage, AK 99503	steve.reimers@iliamacorp.com 907-677-9565 907-571-1256
Pedro Bay Corporation		Park View Building 4141 B Street, Ste 408	Anchorage, AK 99503	907.277.1500 info@pedrobaycorp.com
Kokhanok Native Corporation	Trefon Angansan, Jr., Chairman of the Board	2221 E. Northern Lights Blvd., Ste 119	Anchorage, AK 99508	
Igiugig Native Corporation		PO Box 4009	Igiugig, AK 99613-4009	
City of Newhalen	Cathleen D. Gust, City Clerk	PO Box 165	Newhalen, AK 99606	cityofnewhalen@yahoo.com
Native Village of Iliamna	Thomas Hedlund, Village Council President	PO Box 286	Iliamna, AK 99606	ivc@iliamnavc.org
Native Village of Pedro Bay	Keith Jensen, Village Council President	PO Box 47031	Pedro Bay, AK 99647-0020	villagecouncil@pedrobay.com

Owner	Attention	Mailing Address	City, State, Zip Code	Additional Information
Native Village of Kokhanok		2 Bay Shore Drive	Kokhanok, AK 99606	
	Peducia Andrew, President	PO Box 1007	Kokhanok, AK 99607-1007	kokhanok_vc@yahoo.com
Village of Igiugig	Alexana Salmon, Village Council President	PO Box 4008	Igiugig, AK 99613-4009	

Table 25-2. Adjoining Private Landowners

-Table withheld to protect the personal information of private landowners.

Table 25-3. Adjoining Native Allotment Landowners

The Bureau of Indian Affairs is responsible for designation of Native Allotment case serial numbers. For more information regarding the Native Allotment serial numbers listed here, contact:

Bureau of Indian Affairs, Alaska Regional Office
3601 C Street
Anchorage, AK 99503-5947

Bureau of Indian Affairs Case Serial No.
AKA 052505
AKAA 006262
AKAA 006262
AKAA 006216
AKAA 008161A
AKAA 008161A
AKAA 006301
AKAA 006301
AKAA 006301
AKAA 006301
AKAA 006301
AKAA 006301
AKAA 006301
AKAA 000975A
AKAA 000975A
AKAA 007898
AKAA 008065B
AKAA 007899
AKAA 007898
AKAA 006261
AKAA 006264
AKAA 006267
AKAA 006264
AKAA 006264
AKAA 006267

Bureau of Indian Affairs Case Serial No.
AKAA 006264
AKAA 006264
AKAA 006264
AKAA 006264
AKAA 006264
AKAA 006261
AKAA 006268
AKAA 008203
AKAA 007661B
AKAA 007661A
AKAA 006373B
AKAA 007559C
AKAA 006153B
AKAA 006134A
AKAA 006130
AKA 052447
AKAA 006291
AKAA 006290
AKAA 006292
AKAA 006507B
AKAA 006205
AKAA 006210
AKAA 006260
AKAA 053142
AKAA 007495
AKAA 006123

Bureau of Indian Affairs Case Serial No.
AKAA 006219
AKAA 006232
AKAA 007559A
AKAA 006468A
AKAA 006533A
AKAA 006217
AKAA 008160
AKAA 006222
AKAA 007125B
AKAA 006622A
AKAA 047358
AKA 059683
AKAA 006211D
AKAA 006213A
AKA 063810
AKAA 007544
AKAA 007058
AKAA 007058
AKAA 007058
AKAA 008063
AKAA 007345
AKA 052690B
AKA 052510
AKAA 006211B
AKAA 006737
AKA 052690B

Bureau of Indian Affairs Case Serial No.
AKA 052503
AKAA 008161A
AKAA 007347A
AKAA 006301
AKAA 006301
AKAA 006446
AKAA 000975A
AKAA 006538C
AKAA 007546
AKAA 008065C
AKAA 008065D
AKA 063274B
AKAA 002714
AKAA 007898
AKAA 007898
AKAA 006267
AKAA 006267
AKAA 006264
AKAA 006263
AKAA 008142
AKAA 006373A
AKAA 007347B
AKAA 007126
AKA 052452
AKAA 006265B
AKA 052690B

Tab 26. List of Other Certificates or Approvals/Denials

Following is an initial list of required permits and approvals, and the agencies responsible for their issuance.

Agency	Approval Type
Federal	
BATF	License to Transport Explosives
BATF	Permit and License for Use of Explosives
BSEE	Right-of-Way Authorization for Natural Gas Pipeline
DHS	Airport Security Operations Plan
DHS	Port Facility Security Coordinator Certification
DHS	Port Security Operations Plan
EPA	Clean Water Act Section 404 Discharge of Dredge or Fill Material into Waters of the U.S.
EPA	Facility Response Plan
EPA	RCRA Registration for Identification Number
EPA	Spill Prevention, Control, and Countermeasure (SPCC) Plan
FAA	Notice of Controlled Firing Area for Blasting
FCC	Radio License
MSHA	Mine Identification Number
MSHA	Notification of Legal Identity
NMFS	Magnuson-Stevens Fishery Conversation and Management Act Consultation documentation
USACE	Clean Water Act Section 404 permit for Discharge of Dredge or Fill Material into Waters of the U.S.
USACE	Rivers and Harbors Act Section 10 Construction of any structure in or over any Navigable Waters of the U.S.
USCG	Clean Water Act Section 10 Permit for construction of any structure in or over any Navigable Water of the U.S.
USCG	Facility Response Plan
USCG	Fuel Offloading Plan
USCG	Hazardous Cargo Offloading Plan; Port Operations Manual Approval
USCG	Navigation Lighting and Marking Aids Permit
USCG	Rivers and Harbors Act Section 9 Construction Permit for a Bridge or Causeway across Navigable Waters
USDOT	Registration for Identification Number to Transport Hazardous Wastes

Agency	Approval Type
USFWS	Bald and Golden Eagle Protection Act Programmatic Take Permit
USFWS	Migratory Bird Treaty Act Consultation documentation
USFWS/NMFS	Endangered Species Act Incidental Take Authorization
USFWS/NMFS	Marine Mammal Protection Act Incidental Take Authorization; Letter of Authorization
State	
ADEC	Alaska Solid Waste Program Integrated Waste Management Permit/Plan Approval
ADEC	Alaska Solid Waste Program Solid Waste Disposal Permit; Open Burn Permit
ADEC	Approval to Construct and Operate a Public Water Supply System
ADEC	Clean Air Act Air Quality Control Permit to Construct and Operate – Prevention of Significant Deterioration
ADEC	Clean Air Act Title V Operating Permit
ADEC	Clean Water Act Section 402 Alaska Pollutant Discharge Elimination System Water Discharge Permit
ADEC	Clean Water Act Section 402 Stormwater Construction and Operation Permit
ADEC	Food Sanitation Permit
ADEC	Oil Discharge Prevention and Contingency Plan (ODPCP or "C" Plan)
ADF&G	Fish collection permits for monitoring
ADF&G	Fish Habitat Permit
ADNR	Alaska Dam Safety Program Certificate of Approval to Construct a Dam
ADNR	Alaska Dam Safety Program Certificate of Approval to Operate a Dam
ADNR	Lease of other State Lands
ADNR	Material Sale on State Land
ADNR	Mill Site Permit
ADNR	Mining license
ADNR	Miscellaneous Land Use Permit
ADNR	National Historic Preservation Act Section 106 Review
ADNR	Pipeline Right-of-Way permit
ADNR	Powerline Right-of-Way permit
ADNR	Road Right-of-Way permit
ADNR	Temporary Water Use Permit; Permit to Appropriate Water
ADNR	Tidelands Lease
ADNR	Upland Mining Lease
ADOL	Certificate of Inspection for Fired and Unfired Pressure Vessels
ADOT&PF	Driveway Permit
ADOT&PF	Utility Permit on Right-of-Way

Agency	Approval Type
ADPS	Approval to Transport Hazardous Materials
ADPS	Life and Fire Safety Plan Check
ADPS	State Fire Marshall Plan Review Certificate of Approval
Local	
KPB	Conditional Use Permit
KPB	Floodplain Development Permit
KPB	Multi-Agency Permit Application
L&PB	Borough Development Permit

ADEC = Alaska Department of Environmental Conservation

ADF&G = Alaska Department of Fish and Game

ADNR = Alaska Department of Natural Resources

ADOT&PF = Alaska Department of Transportation and Public Facilities

ADPS = Alaska Department of Public Safety

BATF = U.S. Bureau of Alcohol, Tobacco, and Firearms

BSEE = Bureau of Safety and Environmental Enforcement

DHS = U.S. Department of Homeland Security

EPA = U.S. Environmental Protection Agency

FAA = Federal Aviation Administration

FCC = Federal Communications Commission

KPB = Kenai Peninsula Borough

L&PB = Lake and Peninsula Borough

MSHA = U.S. Mine Safety and Health Administration

NMFS = National Marine Fisheries Service

RCRA = Resource Conservation and Recovery Act

USACE = U.S. Army Corps of Engineers

USCG = U.S. Coast Guard

USDOT = U.S. Department of Transportation

USFWS = U.S. Fish and Wildlife Service

Attachment A
Figures

Attachment A figures are compiled in a separate pdf file.

Attachment B
Culvert Schedule

Culvert Schedule Summary

Culvert Category	Quantity	Culvert Description
2	130	4 feet diameter circular; non-fish passage; streams up to 2 feet wide
3	17	8 feet diameter circular; non-fish passage; streams >2 to 6 feet wide
4	65	8 feet diameter circular; fish passage; streams up to 4 feet wide
5	1	8 feet tall by 14 feet wide pipe arch; non-fish passage; streams >6 to 10 feet wide
6	5	8 feet tall by 14 feet wide pipe arch; fish passage; streams >6 to 10 feet wide
7	1	12 feet tall by 20 feet wide structural plate pipe arch; non-fish passage; streams >10 to 16 feet wide
8	3	12 feet tall by 20 feet wide structural plate pipe arch; fish passage; streams >10 to 16 feet wide
Total culverts	222	
Total fish passage culverts	73	
Total non-fish passage culverts	149	

Culvert Schedule

Crossing ID	Culvert Type	Stream Width (feet)	Culvert Category	Culvert Width (feet)	Culvert Length (feet)
101	Drainage	1	2	4	122
102	Drainage	1	2	4	96
103	Drainage	1	2	4	109
104	Drainage	2	2	4	94
105	Drainage	2	2	4	102
106	Drainage	1	2	4	92
107	Drainage	2	2	4	89
108	Drainage	1	2	4	94
109	Drainage	1	2	4	98
110	Fish	5	4	8	146
111	Drainage	2	2	4	89
112	Drainage	2	2	4	93
113	Drainage	2	2	4	88

Crossing ID	Culvert Type	Stream Width (feet)	Culvert Category	Culvert Width (feet)	Culvert Length (feet)
114	Drainage	2	2	4	96
115	Drainage	2	2	4	121
116	Drainage	2	2	4	120
117	Fish	1	4	8	100
118	Fish	4	4	8	94
120	Fish	2	4	8	85
121	Drainage	1	2	4	116
122	Fish	4	4	8	167
123	Fish	5	4	8	103
124	Fish	1	4	8	89
125	Fish	2	4	8	108
126	Fish	2	4	8	110
127	Drainage	2	2	4	108
128	Drainage	1	2	4	120
129	Drainage	1	2	4	91
130	Drainage	1	2	4	88
131	Drainage	1	2	4	83
132	Drainage	1	2	4	119
133	Drainage	1	2	4	107
134	Drainage	1	2	4	134
135	Drainage	1	2	4	147
136	Drainage	1	2	4	92
137	Drainage	1	2	4	98
138	Drainage	1	2	4	95
139	Drainage	1	2	4	90
140	Drainage	1	2	4	86
141	Drainage	1	2	4	95
142	Drainage	1	2	4	84
143	Fish	6	4	8	90
144	Fish	1	4	8	97
145	Fish	1	4	8	100
146	Fish	1	4	8	89
147	Fish	1	4	8	103
148	Fish	1	4	8	87

Crossing ID	Culvert Type	Stream Width (feet)	Culvert Category	Culvert Width (feet)	Culvert Length (feet)
149	Fish	1	4	8	90
150	Fish	1	4	8	117
151	Fish	1	4	8	110
152	Fish	3	4	8	95
153	Fish	3	4	8	94
154	Drainage	1	2	4	81
155	Drainage	1	2	4	89
156	Fish	2	4	8	85
157	Drainage	1	2	4	79
158	Fish	3	4	8	81
159	Fish	1	4	8	80
160	Fish	4	4	8	83
161	Drainage	1	2	4	77
162	Drainage	1	2	4	82
163	Fish	1	4	8	87
164	Drainage	1	2	4	80
165	Drainage	1	2	4	82
166	Fish	5	4	8	88
167	Drainage	1	2	4	83
168	Drainage	1	2	4	82
169	Drainage	1	2	4	83
170	Drainage	1	2	4	80
171	Fish	2	4	8	83
172	Fish	5	4	8	91
173	Fish	7	6	14	90
174	Fish	1	4	8	82
175	Fish	1	4	8	91
176	Fish	1	4	8	92
177	Fish	4	4	8	90
178	Drainage	1	2	4	88
179	Fish	1	4	8	100
180	Fish	10	6	14	106
181	Fish	1	4	8	87
182	Fish	1	4	8	78

Crossing ID	Culvert Type	Stream Width (feet)	Culvert Category	Culvert Width (feet)	Culvert Length (feet)
183	Fish	1	4	8	85
184	Fish	2	4	8	83
185	Fish	2	4	8	83
186	Fish	1	4	8	82
187	Fish	1	4	8	98
188	Fish	3	4	8	101
189	Fish	2	4	8	96
190	Fish	2	4	8	94
191	Fish	3	4	8	92
192	Fish	2	4	8	81
193	Fish	2	4	8	78
195	Drainage	2	2	4	92
196	Drainage	2	2	4	81
197	Drainage	7	5	14	112
198	Fish	8	6	14	154
199	Drainage	2	2	4	91
200	Drainage	2	2	4	94
201	Drainage	4	3	8	120
202	Drainage	2	2	4	100
203	Drainage	2	2	4	96
204	Drainage	2	2	4	126
205	Drainage	1	2	4	106
206	Drainage	2	2	4	84
207	Drainage	2	2	4	91
208	Drainage	2	2	4	100
209	Drainage	1	2	4	104
211	Drainage	2	2	4	93
212	Fish	2	4	8	86
213	Drainage	1	2	4	83
214	Drainage	2	2	4	85
215	Drainage	1	2	4	90
216	Drainage	3	3	8	143
217	Drainage	4	3	8	153
218	Drainage	1	2	4	82

Crossing ID	Culvert Type	Stream Width (feet)	Culvert Category	Culvert Width (feet)	Culvert Length (feet)
220	Drainage	2	2	4	89
221	Drainage	1	2	4	81
222	Fish	3	4	8	114
223	Fish	2	4	8	90
224	Drainage	2	2	4	89
225	Drainage	1	2	4	93
226	Drainage	6	3	8	186
227	Drainage	1	2	4	111
228	Fish	3	4	8	148
229	Drainage	1	2	4	113
230	Drainage	2	2	4	103
231	Drainage	3	3	8	114
232	Drainage	1	2	4	156
233	Drainage	2	2	4	122
234	Drainage	2	2	4	102
235	Drainage	2	2	4	93
236	Drainage	2	2	4	109
237	Drainage	1	2	4	96
238	Drainage	2	2	4	124
239	Fish	3	4	8	77
240	Drainage	2	2	4	82
241	Drainage	2	2	4	88
242	Drainage	1	2	4	112
243	Drainage	1	2	4	88
244	Drainage	1	2	4	113
245	Drainage	1	2	4	111
246	Drainage	4	3	8	132
247	Drainage	2	2	4	145
248	Drainage	2	2	4	213
249	Fish	2	4	8	172
250	Drainage	2	2	4	179
251	Drainage	1	2	4	146
252	Drainage	2	2	4	229
253	Drainage	2	2	4	135

Crossing ID	Culvert Type	Stream Width (feet)	Culvert Category	Culvert Width (feet)	Culvert Length (feet)
254	Drainage	1	2	4	148
255	Drainage	2	2	4	105
256	Drainage	2	2	4	109
257	Drainage	3	3	8	138
258	Fish	6	4	8	140
259	Drainage	2	2	4	111
260	Drainage	5	3	8	115
261	Drainage	12	7	20	114
262	Fish	11	8	20	131
263	Fish	2	4	8	97
264	Drainage	1	2	4	107
265	Fish	2	4	8	113
266	Fish	3	4	8	145
267	Fish	2	4	8	135
268	Fish	2	4	8	108
269	Fish	7	6	14	135
270	Fish	3	4	8	113
271	Fish	4	4	8	95
273	Fish	2	4	8	102
401	Drainage	2	2	4	81
402	Drainage	2	2	4	102
403	Drainage	2	2	4	99
404	Drainage	1	2	4	90
405	Drainage	2	2	4	99
406	Drainage	2	2	4	143
407	Drainage	1	2	4	81
409	Drainage	1	2	4	91
410	Drainage	2	2	4	88
411	Drainage	2	2	4	97
412	Fish	3	4	8	186
413	Fish	12	8	20	177
414	Fish	11	8	20	188
414a	Drainage	3	3	8	108
414b	Drainage	1	2	4	110

Crossing ID	Culvert Type	Stream Width (feet)	Culvert Category	Culvert Width (feet)	Culvert Length (feet)
414c	Drainage	1	2	4	92
414d	Drainage	1	2	4	104
414e	Drainage	1	2	4	134
415	Fish	6	4	8	169
416	Drainage	1	2	4	144
418	Fish	6	4	8	104
419	Drainage	2	2	4	96
420	Drainage	1	2	4	84
421	Drainage	2	2	4	90
422	Drainage	1	2	4	94
423	Drainage	4	3	8	91
424	Drainage	4	3	8	101
425	Drainage	2	2	4	84
426	Drainage	3	3	8	167
427	Drainage	3	3	8	118
428	Drainage	3	3	8	112
429	Drainage	2	2	4	116
430	Drainage	3	3	8	256
431	Drainage	2	2	4	97
432	Drainage	1	2	4	105
433	Drainage	1	2	4	173
434	Drainage	1	2	4	126
435	Drainage	4	3	8	133
436	Drainage	1	2	4	87
501	Drainage	2	2	4	153
502	Drainage	3	3	8	91
503	Drainage	2	2	4	84
504	Drainage	1	2	4	104
505	Drainage	2	2	4	109
506	Drainage	2	2	4	125
507	Drainage	2	2	4	154
508	Drainage	2	2	4	85
509	Drainage	2	2	4	98
519	Drainage	1	2	4	127

Crossing ID	Culvert Type	Stream Width (feet)	Culvert Category	Culvert Width (feet)	Culvert Length (feet)
520	Fish	8	6	14	109
521	Fish	2	4	8	121
522	Drainage	1	2	4	121
523	Drainage	1	2	4	129
524	Drainage	1	2	4	204

Attachment C
Wetland Polygon Identification List

Attachment C is included as an Excel spreadsheet.

Attachment D
Project Description