US Army Corps
of Engineers

Pebble Project EIS

Draft Environmental Impact Statement

February 2019

www.PebbleProjectEIS.com

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

Regulatory Division
POA-2017-271

Re: Release of the Pebble Project Draft Environmental Impact Statement

Dear Reader:

Enclosed is the Pebble Project Draft Environmental Impact Statement (DEIS). The United States Army Corps of Engineers (USACE) received a permit application (POA-2017-271) from Pebble Limited Partnership (PLP), the Applicant, on December 22, 2017, for the placement of fill in waters of the US and work in navigable waters of the US for developing the Pebble deposit, pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act.

The Applicant proposes to develop the Pebble copper-gold-molybdenum porphyry deposit (Pebble deposit) as a surface mine in Southwest Alaska near Iliamna Lake, approximately 200 miles southwest of Anchorage and 60 miles west of Cook Inlet. The closest communities are the villages of Iliamna, Newhalen, and Nondalton, each approximately 17 miles from the Pebble deposit. The project would include development of the open pit mine, with associated infrastructure to include a 270-megawatt power generating plant. A 188-mile natural gas pipeline from the Kenai Peninsula across Cook Inlet to the mine site is proposed as the energy source for the mine. The transportation corridor includes mine and port access roads, an 18-mile crossing of Iliamna Lake, and an Amakdedori port facility on the western shore of Cook Inlet.

The DEIS describes the proposed Pebble Project, as detailed in the permit application and subsequent Applicant-provided information. It also describes the regulatory processes that guide the Project review by USACE and cooperating agencies. The DEIS describes the project scoping process and the key issues that were raised by interested parties, as well as the project's purpose and need. A range of reasonable alternatives was developed based on the purpose and need and input from the scoping process; the alternatives development process is discussed in the DEIS. The document provides information on environmental resources in the EIS analysis area, and an evaluation of the potential environmental effects of all project alternatives. The DEIS also presents the applicant's proposed mitigative measures, which have been incorporated into the project design. After the Final EIS (FEIS) is completed, USACE will prepare a Record of Decision, which will include all mitigation measures required by the permit, if issued.

The DEIS comment period will be March 1 to May 31, 2019, during which time public hearings will be held (details are provided in the Notice Of Availability, and other details will be announced at https://pebbleprojecteis.com and in local media). Comments on the DEIS will be compiled and used to make revisions and draft the FEIS. After the release of the FEIS, USACE will make a decision to issue or deny a permit the applicant.

Written comments and statements must be postmarked no later than May 31, 2019.

Where and How to Access the Document

You may access the document on the internet at https://pebbleprojecteis.com. Requests for an electronic copy of the DEIS can be made to:

Shane McCoy, Program Manager
US Army Corps of Engineers, Alaska District
P.O. Box 6898
JBER, AK, 99506-0898
907-753-2715

An electronic version of the DEIS document may also be viewed at the following public libraries:

- ☐ Alaska Resources Library and Information Services, Anchorage
- ☐ Bristol Bay Borough Libraries (serving King Salmon, Naknek, and South Naknek)
- ☐ Dillingham Public Library, Dillingham
- ☐ Georgetown University, Washington, DC
- ☐ Homer Public Library, Homer
- ☐ Kenai Community Library, Kenai
- ☐ Soldotna Public Library, Soldotna
- ☐ University of Alaska/Alaska Pacific University Consortium Library, Anchorage
- ☐ Z.J. Loussac Public Library, Anchorage

How to Submit Comments

There are several ways to submit comments:

- ☐ At a public hearing
- ☐ At https://pebbleprojecteis.com
- ☐ Send as an email to drafteis@comments.pebbleprojecteis.com
- ☐ Via Fax to 907-753-5567
- ☐ Via US Postal Service Mail:

  645 G Street, Suite 100-921
  Anchorage, AK 99501

Please include your name, address, and affiliation (if any). Please be advised that your entire comment, including your personal identifying information, may be made publicly available. Although you may ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be available for public review in their entirety.

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LIST OF ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
µeq/l	micro-equivalent per liter
µg	microgram
µm	micrometer
µg/m^2	micrograms per square meter
µg/m^2/y	micrograms per square meter per year
µN/m^2	microNewtons per square meter
µPa	microPascals
µS	microSiemens
AAAQS	Alaska Ambient Air Quality Standards
AAC	Alaska Administrative Code
AAQS	Alaska Ambient Air Quality Standards
ABA	acid base accounting
ACCS	Alaska Center for Conservation Science
ACS	American Community Survey
ADCCED	Alaska Department of Commerce, Community and Economic Development
ADCP	acoustic Doppler current profiler
ADEC	Alaska Department of Environmental Conservation
ADEED	Alaska Department of Education
ADF&G	Alaska Department of Fish and Game
ADHSS	Alaska Department of Health and Social Services
ADNR	Alaska Department of Natural Resources
ADOL	Alaska Department of Labor and Workforce Development
ADOT&PF	Alaska Department of Transportation & Public Facilities
ADPS	Alaska Department of Public Safety
ADSP	Alaska Dam Safety Program
AEIC	Alaska Earthquake Information Center
AFBT	Alaska Fisheries Business Tax
AKEPIC	Alaska Exotic Plant Information Clearinghouse
AMHS	Alaska Marine Highway System
amsl	above mean sea level
ANCSA	Alaska Native Claims Settlement Act

ANFO	ammonium nitrate and fuel oil
ANILCA	Alaska National Interest Lands Conservation Act
ANTHC	Alaska Native Tribal Health Consortium
AP	acid-generating potential
APD&T	Alaska Petroleum Distributors and Transporters
APDES	Alaska Pollutant Discharge Elimination System
APE	area of potential effects
APF	Alaska Permanent Fund
AQRV	air quality related value
AQS	air quality system
AR	Administrative Record
ARD	acid rock drainage
ARMP	Aquatic Resources Monitoring Plan
AS	Alaska Statute
ASCE	American Society of Civil Engineers
ASCI	Alaska Stream Condition Index
ASHSC	Alaska Seismic Hazards Safety Commission
AST	aboveground storage tank
ATSDR	Agency for Toxic Substances and Disease Registry
ATV	all-terrain vehicle
AVCP	Association of Village Council Presidents
AVO	Alaska Volcano Observatory
AWAC	acoustic wave profiler
AWC	Anadromous Waters Catalog
BA	Biological Assessment
BACT	best available control technology
BAFs	bioaccumulation factors
BATF	Bureau of Alcohol, Tobacco, and Firearms
BBEDC	Bristol Bay Economic Development Corporation
BBS	breeding bird survey
bbl	barrel(s)
BBNC	Bristol Bay Native Corporation
BCR	bird conservation region
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management

BMI	benthic macroinvertebrate
BMP	best management practice
BSCF	billion standard cubic feet
BSEE	Bureau of Safety and Environmental Enforcement
ca.	circa
CAA	Clean Air Act
Caltrans	California Department of Transportation
CASA	Community and System Analysis
CASTNet	Clean Air Status and Trends Network
CBJ	City and Borough of Juneau
CEQ	Council on Environmental Quality
CFEC	Commercial Fisheries Entry Commission
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGP	construction general permit
CH_4	methane
CIBS	Cook Inlet Beluga Whale Stock
CIRI	Cook Inlet Region, Inc.
cm	centimeter
CMP	Compensatory Mitigation Plan
CO	carbon monoxide
CO_2	carbon dioxide
CO_2-e	equivalence to CO_2, CO_2 equivalent
COPCs	chemicals of potential concern
CRMP	Cultural Resources Management Plan
C_s	speed constants
CTI	Community Tolerance Index
CWA	Clean Water Act
CWD	contact water dam
CY	cubic yards
D	dominant
DA	Department of the Army
dB	decibels
dBA	A-weighted decibel
DD	doubling of distance

DEIS	Draft Environmental Impact Statement
DEM	digital elevation model
DO	dissolved oxygen
DPS	distinct population segment
DST	dry stack tailings
dv	deciviews
DWPA	Drinking Water Protection Area
EBD	Environmental Baseline Document
ECIBSA	Expanded Cook Inlet Baseline Study Area
EFH	essential fish habitat
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ERA	ecological risk assessment
ESA	Endangered Species Act
ESCP	erosion and sediment control plan
ESS	Exploratory Soil Survey of Alaska
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FDCP	Fugitive Dust Control Plan
FEIS	Final Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Policy and Management Act
FMEA	failure mode effects analysis
FMP	Fishery Management Plan
FoS	Factor of Safety
FPPA	Farmland Protection Policy Act
FR	Federal Register
FRP	Facility Response Plan
ft	foot/feet
ft^3	cubic feet
ft/yr	feet per year
FTA	Federal Transit Administration
FWD	fresh water dam
FWDD	fresh water diversion dam
g	gravity

gpd	gallons per day
G2G	government-to-government
GCMs	global circulation models
GHG	greenhouse gas
GIS	Geographical Information System
GMU	game management unit
gpd	gallons per day
gpm	gallons per minute
GPS	global positioning system
HAP	hazardous air pollutant
HDD	horizontal directional drilling
HDPE	high-density polyethylene
HEC	health effects category
HFCs	hydrofluorocarbons
Hg	mercury
Hg^0	elemental mercury vapor
Hg^{II}	gaseous divalent mercury
HGM	hydrogeomorphic
Hg_P	particulate-bound mercury
HgS	cinnabar
HIA	Health Impact Assessment
HIRL	high-intensity runway lighting
HQ_{LOAEL}	hazard quotients low adverse effect level
HQ_{NOAEL}	hazard quotient no observable adverse effect level
HQs	hazard quotients
HUC	hydrologic unit code
Hz	hertz
IBA	important bird area
IDF	inflow design flood
ILF	in-lieu fee
ILS	Iliamna Lake Study
IMPROVE	Interagency Monitoring of Protected Environment
IPCC	Intergovernmental Panel on Climate Change
ISO	International Standards Organization
IWMP	Integrated Waste Management Permit

JROD	Joint Record of Decision
K	hydraulic conductivity
KC	Kaskanak Creek
kg	kilogram
kg/ha	kilograms per hectare
kgN/ha/yr	kilograms of nitrogen per hectare per year
kHz	kilohertz
km	kilometer
km^2	kilometer
KOP	key observation point
kPa	kilopascal
KPB	Kenai Peninsula Borough
kV	kilovolt
lb	pound(s)
LCI	Lower Cook Inlet
L_{DN}	day-night sound level
LEDPA	least environmentally damaging practicable alternative
LEO Network	Local Environmental Observer Network
L_{EQ}	equivalent sound level
LiDAR	Light Detection and Ranging
LLC	limited liability corporation
L_{max}	maximum L_{EQ}
LMPT	large mine permitting team
LNG	liquefied natural gas
long ton	a unit of weight equal to 2,240 pounds
LPB	Lake and Peninsula Borough
Lv	vibration level
m/s	meters per second
M	magnitude
m	meter
m^2	square meter
m^3	cubic meter
MAAT	mean annual air temperature
MBTA	Migratory Bird Treaty Act
MCE	maximum credible earthquake

MCL	maximum containment levels
MCO	mineral closing orders
MDE	Maximum Design Earthquake
MDN	marine-derived nutrients
MeHg	methylmercury
mg/kg	milligrams per kilogram
mg/m^2	milligrams per square meter
Mgal	million gallons
MHHW	mean high higher water level
MHW	mean high water
mi	miles
mi^2	square mile
MIRL	medium-intensity runway lighting
ML	Metal Leaching
MLA	Mineral Leasing Act
MLLW	mean lower low water
MLV	mainline valves
mm	millimeter
MMBtu/hr	million British thermal units per hour
MMPA	Marine Mammals Protection Act
MMT	million metric tons (1,000,000 tonnes)
MOA	memorandum of agreement
MODIS	moderate resolution imaging spectroradiometer
MP	milepost
mph	miles per hour
MRSGS	McNeil River State Game Sanctuary
MS	Material Site
MSDS	Material Data Safety Sheet
MSFCM	Magnuson-Stevens Fishery Conservation and Management Act
MSHA	Mine Safety and Health Administration
MSL	mean sea level
MT	metric tonne (unit of weight equal to 1,000 kg (2,204.6 lb); see also tonne
MW	megawatt
MWh	megawatts per hour
N_2O	nitrous oxide

NA	not applicable
na	not available
NAAQS	National Ambient Air Quality Standards
NADP	National Atmospheric Deposition Program
NAG	non-acid generating
NASA	National Aeronautics and Space Administration
ND	not detected
NDM	Northern Dynasty Minerals
NEPA	National Environmental Policy Act
NERR	National Estuarine Research Reserve
NFK	North Fork Koktuli River
ng/g	nanograms per gram
ng/L	nanograms per liter
ng/m^3	nanograms per cubic meter
ng/scm	nanograms per standard cubic meter
NH_3	ammonia
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service (also referred to as NOAA-Fisheries)
NO	nitric oxide
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOC	naturally occurring constituents
NOI	Notice of Intent
NO_x	oxides of nitrogen
NP	neutralization potential
NPAG	non-potentially acid generating
NPDES	National Pollution Discharge Elimination System
NPP	National Park and Preserve
NPS	National Park Service
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NRMS	normalized root mean square
NS	non-salmonoid fish species
NSR	Noise-sensitive receptor
NTU	Nephelometric Turbidity Units

NURE	National Uranium Resource Evaluation
NVE	not visually evident
NWI	National Wetlands Inventory
NWIS	National Water Information System
NWR	National Wildlife Refuge
NWS	National Weather Service
NWUS	navigable waters of the US
O_3	ozone
OBE	Operating Basis Earthquake
ODPCP	Oil Discharge and Prevention Contingency Plan
OEG	optimal escapement goals
OHV	off-highway vehicle
OHW	ordinary high water
ORV	off-road vehicle
OSHA	Occupational Safety & Health Administration
PA	Programmatic Agreement
PAG	potentially acid generating
Pb	lead
PBF	physical or biological features
PCB	polychlorinated biphenyls
PCE	primary constituent elements
PCP	Project Communications Plan
PDO	Pacific Decadal Oscillation
PEL	probable effects level
pg/m^3	picograms per cubic meter
pga	peak ground acceleration
PILT	payment in lieu of taxes
PJD	Preliminary Jurisdictional Delineation
PLP	Pebble Limited Partnership
PLSS	Public Land Survey System
PM	particulate matter
PM_{-10}	PM with an aerodynamic diameter less than or equal to 10 µm
$PM_{-2.5}$	PM with an aerodynamic diameter less than or equal to 2.5 µm
PMF	probable maximum flood
PMP	probable maximum precipitation

POA	Port of Anchorage
POD	Plan of Development
POX	pressure oxidation
ppb	parts per billion
ppm	parts per million
PPV	peak particle velocity
PRM	permitee-responsible mitigation
PSD	Prevention of Significant Deterioration
psi	pounds per square inch
PSY	pipe and equipment storage yards
QA/QC	quality assurance/quality control
R.S.	Revised Statute
RCP	Reclamation and Closure Plan
RFFA	Reasonably Foreseeable Future Actions
RFI	Request for Information
RHA	Rivers and Harbors Act
RMR	rock mass rating
RMS	root mean square
ROD	Record of Decision
ROW(s)	right(s)-of-way
RS	resident salmonoids
RSL	regional screening levels
RSW	refrigerate seawater
SAG	semi-autogenous grinding
SCP	seepage collection pond
SDH	social determinants of health
SDI	Shannon's Diversity Index
SDWA	Safe Drinking Water Act
SEL	sound exposure level
sf	square feet
SF_6	sulfur hexafluoride
SFK	South Fork Koktuli River
short ton	unit of weight equal to 2,000 lb
SHPO	State Historical Preservation Office
SNAP	Scenarios Network for Alaska Planning

SO_2	sulfur dioxide
SPCC	spill prevention control and countermeasure
SPCS	State Pipeline Coordinator Services
SPL	sound pressure level
sq. km	square kilometer(s)
sq. m	square meter(s)
sq. mi	square mile(s)
SQGs	sediment quality guidelines
SQRU	scenic quality rating unit
SRB&A	Stephen R. Braund and Associates
SRRP	stabilization, rehabilitation, and reclamation plan
SRS	seepage recovery system
STATSGO	State Soil Geographic Database
SWAN	simulating waves nearshore
SWAP	source water assessment and protection
SWHS	Statewide Harvest Survey
SWIP	shallow water ice profile
SWPPP	stormwater pollution prevention plan
t	ton; also called short ton (both mean 2,000 lb)
TCP	Traditional Cultural Property
TDML	total maximum daily load
TDS	total dissolved solids
TEK	traditional ecological knowledge
TEL	thresholds effects level
TES	Threatened and Endangered Species
TOC	total organic carbon
tonne	unit of weight equal to 1,000 kg (2,204.6 lb); see also metric tonne
tpd	tons per day
tpy	tons per year
TSF	Tailings Storage Facility
TSS	total suspended solids
TUP	Temporary Use Permit
TWUA	Temporary Water Use Authorization
UAA	University of Alaska Anchorage
UCI	Upper Cook Inlet

UCRC	Ursus Cove and Rocky Cove
USACE	US Army Corps of Engineers
USC	US Code
USCG	US Coast Guard
USDA	US Department of Agriculture
USDOI	US Department of Interior
USDOT	US Department of Transportation
USFWS	US Fish & Wildlife Service
USGS	US Geological Survey
USPS	US Postal Service
UTC	Upper Talarik Creek
UTM	Universal Transverse Mercator
VE	visually evident
VdB	vibration decibels
VOC	volatile organic compound
VPSO	Village Public Safety Officer
VS	visually subordinate
WBM	water balance model
WELTS	well log tracking system
WMP	water management pond
WMRP	water resource management plan
WQS	water quality standards
WRF	Waste Rock Facility
WTP	water treatment plant
yd^3	cubic yards

Some of the information and data presented in the Pebble Project Draft Environmental Impact Statement (DEIS) and its associated attachments are not fully compliant with the access and use requirements of Section 508 of the Rehabilitation Act of 1973. The DEIS contains several hundred tables, many of which have merged cells and other formatting that help accurately convey technical information to the general public; and several hundred figures and maps that use color to convey the geographical extent of resources and other information. However, full compliance with the requirements of Section 508 for these tables, figures, and maps is excused because doing so would impose an undue burden in the form of exorbitant expenditures of time and cost. Any individual with disabilities covered by Section 508 that experiences difficulty accessing the data or information presented in this DEIS may obtain alternative means of access that allows the individual to use the information and data by contacting Shane McCoy at 907-753-2715.