PEBBLE PROJECT

DRAFT ENVIRONMENTAL BASELINE STUDIES PROPOSED 2008 STUDY PLANS

CHAPTER 1. INTRODUCTION

DRAFT

Prepared For:

State of Alaska Large Mine Permitting Team
Department of Natural Resources

Prepared By:

THE pebble PARTNERSHIP

3201 C Street, Suite 604
Anchorage, AK 99503
(907) 339-2600

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1. INTRODUCTION

1.1 Purpose

This document provides a description of the 2008 Study Plan for the Pebble Partnership baseline environmental program for the Pebble Project. This Study Plan builds on the baseline work started in 2004 and is presented for agency and stakeholder review and comment, to ensure that the planned program provides a comprehensive and thorough basis for baseline environmental characterization of the Pebble Project.

This plan, in conjunction with the 2005, 2006, and 2007 Study Plans prepared by Northern Dynasty Mines, provides a complete description of the planned environmental and socioeconomic baseline study program for the Pebble Project.

1.2 Background

The Pebble Project is a potential mine based on a copper, gold, molybdenum, and silver deposit located in southwestern Alaska north of Iliamna Lake (Figure 1-1). Starting in 2001, Northern Dynasty Mines began an extensive program to collect geological information. In 2004, environmental, socioeconomic, and engineering studies were initiated. In July 2007, Northern Dynasty formed a 50/50 partnership with Anglo American plc called the Pebble Partnership. In 2008, the Partnership initiated a Prefeasibility Study. The baseline data continue to be collected. The data are used to support project design and applications for state and federal permits.

The design of this project requires planning and coordination of all aspects of the project from its initial stages through to the final design. In this context, responsibility for environmental stewardship over the life of the project is a fundamental ingredient to the engineering design and feasibility of the project.

The Pebble Partnership recognizes that a feasible project is one that is technically and economically viable, and environmentally and socially responsible. Therefore, the Pebble Partnership has identified three cornerstones to pursuing the development of the Pebble Project:

- Geology and exploration—definition of a mineral deposit that supports an economic mine.
- Engineering—sound and practical engineering that incorporates appropriate environmental and economic standards to give a robust and feasible project design.
- Environmental and socioeconomic studies—diligent characterization of the existing environmental and social conditions of the project area and their incorporation into the project design and operation.

1.3 Goals and Objectives

The primary goal of this Study Plan is to provide a description of the 2008 Pebble Partnership baseline environmental programs for the purpose of agency and stakeholder review. Agency and stakeholder

feedback is solicited on this Study Plan to ensure an adequate baseline characterization of the Pebble Project.

The specific objectives of this document are to:

- Describe the Study Plan for characterization of the baseline conditions.
- Provide a sound technical basis for project design and permitting and for ongoing evaluation of environmental effects during mine operation and closure.
- Define the methods and approach for data gathering and analysis for review by others.
- Define the objectives of the environmental baseline studies.

1.4 Project Description

The Pebble Project consists of one deposit with two separate zones—the near-surface Pebble West zone and the deeper, richer Pebble East zone. At the time of publication, the prefeasibility study for the project is currently being undertaken.

To date, the geologic and metallurgical data indicate that a crush/grind/flotation processing method can be used to recover the primary ore minerals of copper, gold, and molybdenum. The key mine design considerations include the following:

- The deposit is a copper/gold porphyry with the primary mineralization occurring as copper/iron sulfides with associated gold values.
- At present, the proposed process for recovering the ore would be to produce sulfide concentrate(s) from a crushing, grinding, and flotation process.
- The major components of the milling process that require storage would be flotation tailings and associated process water.
- Access for construction, operation, and concentrate shipping would be required. Transportation systems could include a ship docking facility for concentrate handling and shipping, and a road connecting the port to the mine site.
- Concentrate(s) produced from the mine must be conveyed to port/markets.
- Tailings-pond water will be recycled to the process plant.
- The estimated stripping ratio is relatively low, where waste rock will be used in dam construction.
- Final details of the mine design and project description await completion of geological, engineering, and environmental studies.

These considerations may change as the results of the prefeasibility work and future environmental and stakeholder consultations.

1.5 Approach

There are a wide variety of environmental aspects (including the physical, chemical, biological, and human environment) in the project area that requires the contributions of experts from a variety of disciplines. In addition, there has been a coordinated integration of the project's environmental and engineering teams to incorporate environmental information into the project design.

The baseline study program is designed to characterize the disciplines listed in Table 1.5-1.

TABLE 1.5-1
Pebble Project Environmental Baseline Studies Program

Discipline	Consulting Firm
Meteorology	Hoefler Consulting Group
Noise	Michael Minor & Associates
Surface Water Hydrology	Mine — HDR Alaska, Inc. / Knight Piésold Consulting / Inter-Fluve Inc. Transportation Corridor — Bristol Environmental and Engineering Services Corp.
Groundwater Hydrogeology	Mine — Water Management Consultants / SLR Alaska Transportation Corridor — Bristol Environmental and Engineering Services Corp.
Water Quality	Mine — HDR Alaska, Inc. Transportation Corridor — Bristol Environmental and Engineering Services Corp.
Trace Elements	Mine — SLR Alaska. Transportation Corridor — Bristol Environmental and Engineering Services Corp. / SLR Alaska
Geochemical Characterization and Metal Leaching/Acid Rock Drainage	SRK (Canada) Inc.
Terrestrial Wildlife and Habitats	ABR, Inc.
Wetlands	Mine — Three Parameters Plus Inc. Transportation Corridor — HDR Alaska, Inc.
Fish and Aquatic Habitat	Buell & Associates HDR Alaska, Inc. R2 Resource Consultants Bailey and Associates ABR, Inc.
Marine Habitat	ABR, Inc. Bristol Environmental and Engineering Services Corp. Pentec Environmental
Subsistence	Stephen R. Braund & Associates
Cultural Resources	Stephen R. Braund & Associates
Recreation	Kevin Waring & Associates
Land Use	Kevin Waring & Associates
Socioeconomics	Kevin Waring & Associates McDowell Group
Visual	Land Design North
Data Management and Geographic Information System (GIS)	Resource Data Inc.

1.6 Project Status

During drilling in late 2005, Northern Dynasty Mines Inc. discovered the Pebble East zone. As a result of this major discovery, the project definition is under review. Geologic and engineering work is underway to delineate Pebble East and to prepare an integrated development plan that could involve underground block cave mining and other changes/additions to the design concept. Similar to the 2007 Study Plan, this 2008 Study Plan focuses more effort on understanding the Upper Talarik Creek drainage. This is in response to potential development of Pebble East.

In addition to continuing the environmental baseline studies, The Pebble Partnership continues with the pre-feasibility process of evaluating a range of options for development of the various components of mine facilities and infrastructure.

156°0'0"W 155°0'0"W 154°0'0"W 153°0'0"W

60°0'0"N

59°30'0"N

Port Alsworth
Lake Clark National Park
Lake Clark National Preserve
Mt. Iliamna
Chulitna R.
Lake Clark
Kokhanok River
N. Fork Kokhuli R.
Nondalton
S. Fork Kokhuli R.
Upper Talarik Cr.
Newhalen River
Iliamna
Pedro Bay
Pile Bay
Newhalen
Williamsport
Port Site
Lower Talarik Cr.
Cook Inlet
Iliamna Lake
Kokhanok
Igiugig
Kvichak River
Augustine Island
Kukaklek Lake
Kamishak Bay
Katmai National Preserve
Katmai National Park
Katmai National Park

THE pebble PARTNERSHIP

Figure 1-1
Study Area
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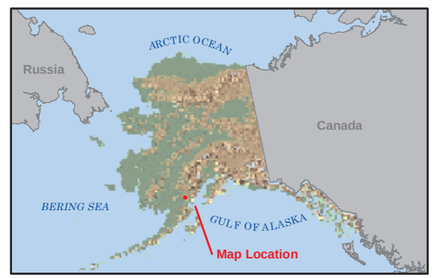
Legend

- General Deposit Location
- Study Area
- Mine Studies
- Transportation Corridor Studies
- National Park and Preserve
- Borough Boundary
- Port Site
- Possible Road (10/2005)
- Existing Roads



0 7 14 21 28 Miles

0 7 14 21 28 35 Kilometers

N

Scale 1:600,000

Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: ND_ProjectArea_11X17L_1of1_D09.mxd	Date: May 22, 2008
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