

# STATE OF ALASKA

## DEPARTMENT OF NATURAL RESOURCES

### OFFICE OF HABITAT MANAGEMENT & PERMITTING

**SARAH PALIN, Governor**

550 W. 7<sup>th</sup> AVENUE, SUITE 1420  
ANCHORAGE, ALASKA 99501-3566

PHONE: (907) 269-8690

FAX: (907) 269-5673

## FIELD REPORT --PEBBLE COPPER/GOLD PROJECT--

**Date:** 22 August 2007

**Prepared by:** Jeff Estensen, ADNR OHMP

**Weather:** Cloudy, ~60<sup>o</sup>F, slight wind.

**Operator Contact:** Michael C.T. Smith, Lena Brommeland, Northern Dynasty; Jim Buell, contractor to Northern Dynasty.

**Agency Personnel:** Jeff Estensen, ADNR OHMP; Lee McKinley, ADNR OHMP; Tim Baker, ADF&G; Fred West, ADF&G; Mark Fink, ADF&G.

**Objectives:** Site visit to Pebble Project, inspect temporary water use for exploratory drilling.

### Site Visit:

Agency personnel flew from Anchorage to Iliamna via a charter on Iliamna Air Taxi, provided by Northern Dynasty Minerals, Ltd. After a safety briefing we were given an overview of the project at the office in Iliamna.

The site visit to the proposed mine area was carried out by helicopter. The first landing site was a drilling rig located due east of Koktuli Ridge on a saddle north of Frying Pan Lake (Figure 1). The drill site was clean and orderly (Figure 2). To minimize impacts to the tundra, drilling structures were placed on mobile wooden platforms constructed of timbers and decking. We observed an area where a drilling platform had been previously, and the impact appeared minimal (Figure 3). One objective of this trip was to inspect water withdrawal approved under Fish Habitat permits 07-II-010, 07-II-011, 07-II-0012, 07-II-013, and 07-II-014. These permits authorize water to be withdrawn from Upper Talarik Creek and designated tributaries for use in drilling operations. Upon arriving in Iliamna, Northern Dynasty staff informed OHMP staff that water was not being withdrawn from the permitted creeks, rather it was being withdrawn from non-fish bearing kettle lakes in the area. Also, water was recycled between drilling rigs to minimize water withdrawal. At each drilling rig, settling sumps (Figure 4) are dug to allow rock flour to settle from the drilling water. There was a centralized settling pond (Figure 5) that received and provided water to several other drilling rigs in the area via a network of pumps and hoses. The kettle pond that served as the primary water source for the visited drilling rig and others in the area exhibited considerable drawdown (Figure 6). To the best of OHMPs knowledge no fish

sampling has been conducted in the local kettle lakes and it is assumed they are non-fish bearing. A water intake structure design to prevent fish entrapment and impingement during withdrawal was not visible at this site because the intake hose was submerged. However, we were informed that a structure was in place. I observed another kettle lake that water had previously been withdrawn from, and an intake structure was present. Also noted was extensive helicopter activity (e.g. 3-4 helicopters airborne simultaneously) in the area during the visit. Most of their activity was associated with sling loading equipment.

The second landing site was on the eastern side of Koktuli Peak (Figure 1). From this location drill rigs were visible working within the project area and the location provided a good overview of the current exploratory drilling area (Figure 7). The flight back to Iliamna proceeded over the north and south forks of Koktuli River, Big Wiggly Lake, Upper Talarik Creek, and the tentative road access route. I observed several kettle lakes unaffected by drilling operations with low water level were observed throughout the area (Figure 8). A brief tour of the core shack concluded the site visit.

**Action Items from This Site Visit:**

None.

**Action Items from Previous Site Visits:**

None.

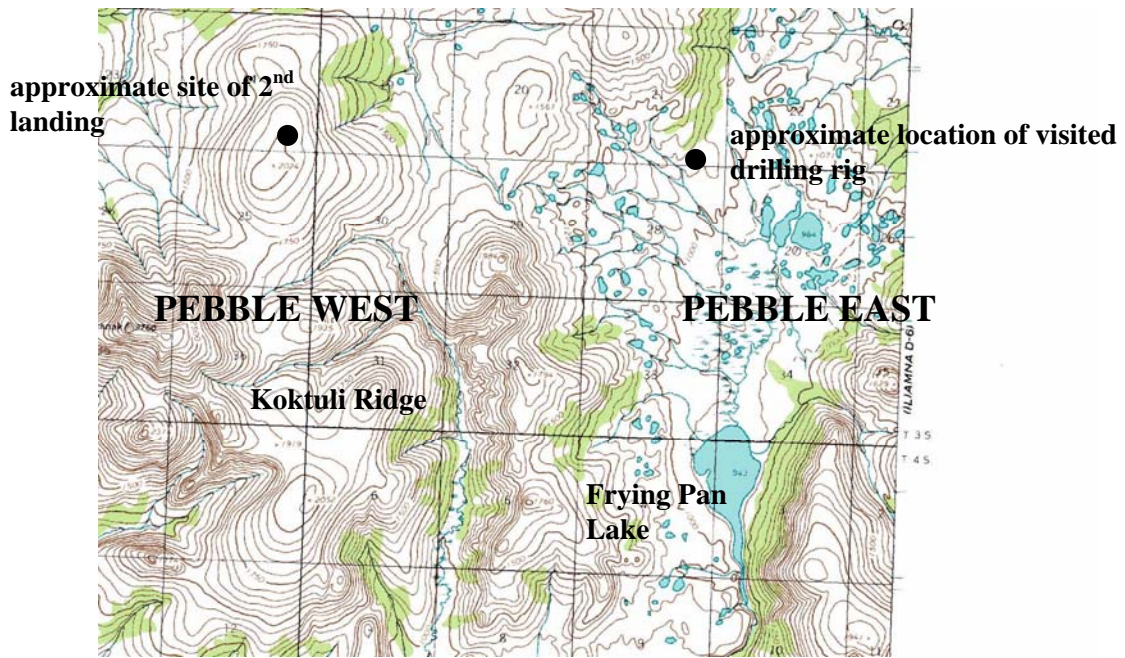


Figure 1. Landing areas during site visit.



Figure 2. Visited drilling rig and pad.





**Figure 3. Location of previous drilling site.**



**Figure 4. Settling pond at drill site.**



**Figure 5. Centralized settling pond.**



**Figure 6. Primary water source and observed drawdown.**





**Figure 7. View of drilling area, looking east from Koktuli Ridge.**



**Figure 8. Typical observed kettle lake unaffected by exploratory drilling showing low water level.**