

SUBMISSION TO RESOURCE MANAGEMENT BRANCH (INSPECTIONS & ENGINEERING)  
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23 November 1991

MINISTRY OF ENERGY, MINES  
AND PETROLEUM RESOURCES  
KAMLOOPS, B.C.  
Rec'd. NOV 25 1991

Ministry of Energy, Mines and Petroleum Resources  
100, 2383 Airport Drive  
Kamloops, B.C.  
V2B 7W8

N. RINGSTAR

Attention: E. Sadler, P.Eng.,  
District Inspector & Resident Engineer

Re: Lot 1798 Tailings Pile, Hedley, B.C.  
Lot 3186 Tailings Pile, Hedley, B.C.

**Introduction**

Candorado has investigated the two subject tailings piles located north of Hedley as sources of feed for our gold recovery plant.

The removal and subsequent reseeded will eliminate the prevalent dust problem to the town of Hedley when the wind blows down Hedley Creek valley and provide Candorado with sufficient reserves to operate for additional two years. The company employs 28-30 people at full production, the majority of which live in Hedley.

These tailings are of current interest to Candorado because they are of slightly higher grade than our other reserves in the area and grade is critical at current gold prices.

**History**

The subject tailings were provided from the Hedley Mascot mine which operated from 1936 to 1949. Milling at Mascot is reported to initially be flotation, but in 1941 a cyanide circuit was added to cyanide the middlings. The tons mined is reported to be 685,000 tons (622,000 tonnes).

**Lot 1798**

Location & Access: With reference to figure 1 the tailings are located north of the town of Hedley and on the opposite side of Hedley creek. The reserves is accessible by a gravel road which runs along the east side of Hedley Creek.

TO

VICTORIA RM P.05

1991 14:17 FROM MEMPR KAMLOOPS

TO

VICTORIA RM P.03

**Reserves:** The tailings were drill tested in 1990 and contain a gross mineral inventory of 186,000 tonnes grading 1.35 g/T gold. At present gold prices the entire inventory is considered ore and it would be our intention to excavate the entire inventory back to the initial grade. We assume 80% mining recovery which equates to approximately 150,000 tonnes of material to be removed.

**Mining Method:** Excavation and truck haulage.

**Reclamation:** At the present time these tailings are not supporting any vegetation. There is one washout at the berm perimeter caused by hillside runoff. We propose reclaiming this area by seeding as described in our reclamation plan. We would also wish to test hydro-seeding as a potentially suitable alternative

**Lot 3186**

**Location & Access:** With reference to figure 1 the tailings are located on the northern boundary of the town of Hedley and on the same side of Hedley creek. The reserves is accessible by a paved roads which run through the town of Hedley.

**Reserves:** The tailings were drill tested in September 1991 and contains a gross mineral inventory of 335,000 tonnes of which 175,000 tonnes grading 1.20 g/T gold is considered ore. It would be our intention to selectively mine the perimeter of the pile as shown in Figure 3 where the grade has been concentrated to economic levels. We assume 80% mining recovery which equates to approximately 140,000 tonnes of material to be removed.

**Mining Method:** Survey controlled excavation and truck haulage.

**Reclamation:** At the present time these tailings are supporting limited vegetation in some areas. A significant amount of metallic refuse including automobiles, appliances and scrap metal has been placed on the tailings. We propose reclaiming this area by recontouring, burying the refuse and seeding as described in our reclamation plan. We would also wish to test hydro-seeding as a potentially suitable alternative

#### **Air Quality**

The principal impact of the proposed excavation plan is the short and long term impact on air quality. At the present time fugitive dust from the subject tailings routinely are deposited in the town of Hedley. This happens on occasions when the prevailing wind is from the north through the Hedley Creek valley. In addition to the dust problem is the elevated arsenic level in the Hedley area tailings. The reserves which we presently have permitted run approximately 1% As and we are presently having a composite of the Lot 3186 tailings assayed for Arsenic.

We consider the reclamation of these tailings to eliminate dust from the town of Hedley to be the principal environmental impact of this proposal.

During the period of tailings excavation and haulage dust emissions may increase in the absence of control measures. Extensive amounts of dust are not expected due the high moisture content of the tailings. Our drilling results to date have demonstrated that the moisture content on average is in excess of 20%. Notwithstanding this the proposed dust control measures to be used on an as required basis as follows:

1. Each truck shall be sprayed after loading to remove dust that could potentially blow off during transit.
2. When tailings are of a low moisture content that might cause dusting during transit, a tarp shall be used to cover the load.
3. A water truck will be used to maintain dust levels where applicable.

**Water Quality**

Our files make reference to a letter to the company dated December 22, 1987, from Raymond Cook, Ministry of the Environment, in which he states that the subject tailings are leaching into the water table. I have not seen this letter and so am unable to comment on the specifics of what is leaching. However all of our drill core samples associated with the subject tailings were in the pH range of 7.4 to 8.0. We would expect that this pH range would immobilize most metallic contaminants.

Based upon historical data generated by our water quality sampling both upstream and downstream of our recovery plant and rock salt assay data we have concluded that short term elevations in cyanide levels in both the Similkameen River and Hedley Creek are most probably associated with post road salting runoff.

During excavating operations we will not have a requirement to cause the suspended solids levels to rise in Hedley creek because of the distance we would be working from this water course. We have demonstrated our ability to do this successfully when we excavated 457,000 tonnes proximal to the Similkameen River (New Tailings).

After the material has been removed we do not expect any deterioration in water quality.

**Transportation**

Due to the short term nature of the excavation work we would contract the tailings removal to a trucking contractor. We have been advised informally by the Department of Highways that the access bridge to the Lot 1796 tailings has no abnormal load limit restrictions.

Our 1992 mine plan dictates the following excavation timetable.

Phase	Tonnage	Lot	Start Date
I	60000	1796	February 1992

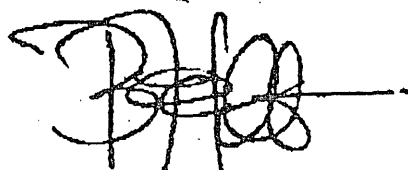
II                    90000 1796                    April 1992  
                         50000 3987

**Permitting**

We do not foresee any modifications to our permits associated with the recovery site because the allocation of approved space for leaching is 1.6 million tonnes of which 475,000 tonnes have been processed. Current reserves from all available sources are currently 510,000 tonnes.

I would appreciate it if you review this summary at your earliest convenience and provide me with the particulars of any concerns or deficiencies.

Yours truly,



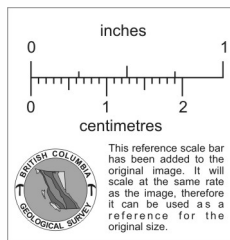
Byard H. MacLean, M.A.Sc., P.Eng.,  
President

FIGURE 1

LOT 1796

LOT 3185

HEDLEY



HIGHWAY 97  
 To Mission

HEDLEY CREEK  
 HEDLEY TAILINGS PILE  
 S. MILKMEEN RIVER

LOT 1900




LEACH AREA

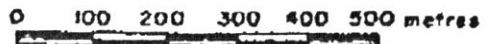
NEW TAILINGS PILE

CEMETARY

To Kelowna

**LEGEND**

-  mountains
-  upper bench
-  lower bench

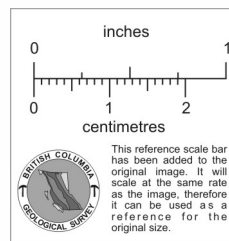


**CANDORADO MINES LTD.**  
**HEDLEY TAILINGS PROJECT**  
**MAIN TOPOGRAPHICAL**  
**FEATURES**

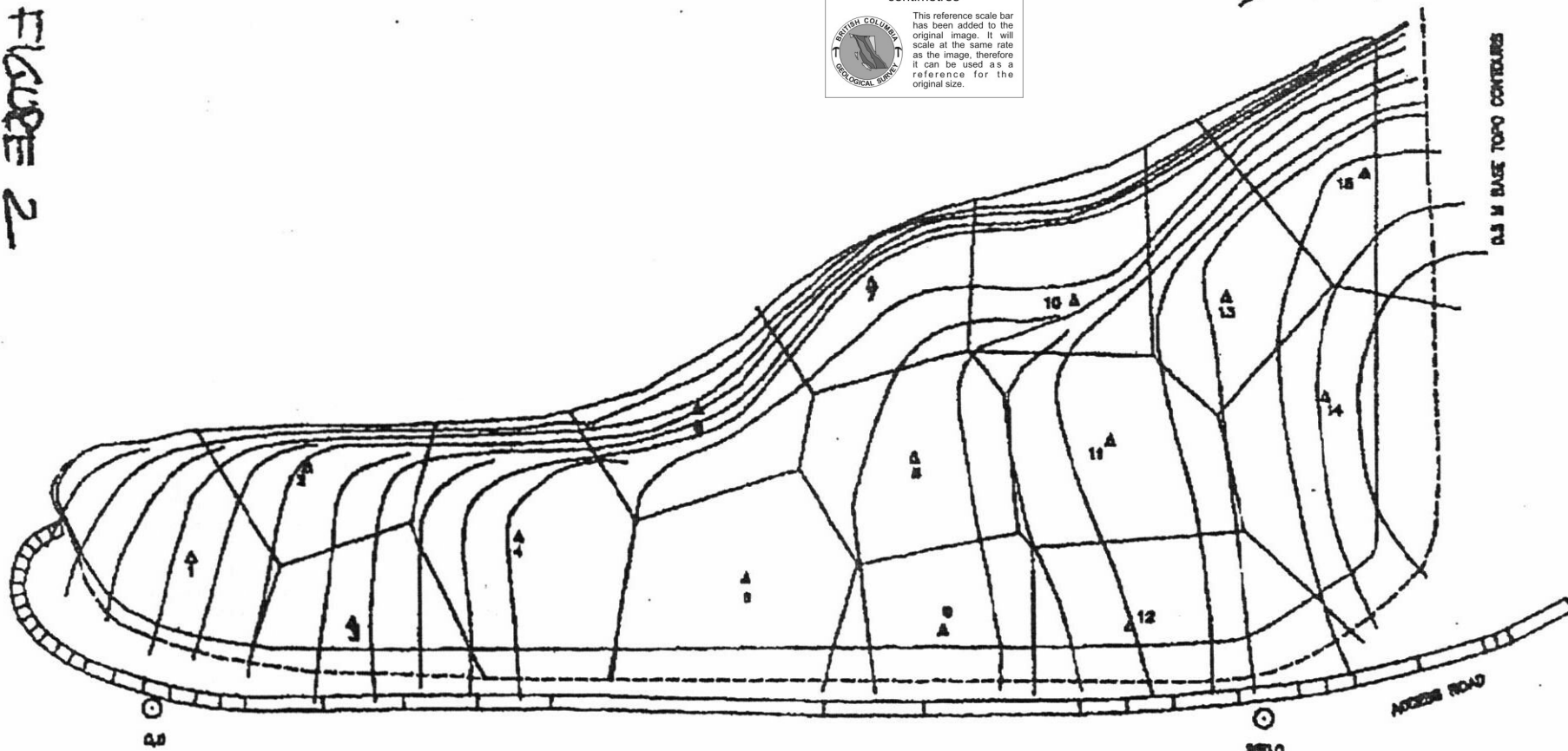
SCALE: 1:10,000      DATE: AUG. 1987      FIG. 3.1

ASH & ASSOCIATES - (604) 682-5211  
 #811-543 Granville St., V8C 1X8

FIGURE 2



0.5 M BASE TOPO CONTOURS



186,000 Tonnes @ 1.35 g/T Au (.04 oz/ton)

150 M



Candorado Mines Ltd.

PLAN VIEW  
LOT 1796

FIGURE 3

