

Red Mtn
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MEMO

AUG 27 1993

WRS → Tom Sch
FYI.

To: N. Ringstad, Manager, MDAB
From: D. Alldrick, Geologist

Geological Survey Branch
MEMOR

Date: August 24, 1993.

Re: Comments on Red Mountain Prospectus

After a quick review of the prospectus, here are my 'reflex' reactions.

1. This is a fairly comprehensive first pass. I'm sure it represents the best efforts of LAC's planning team at this time. However, because it has been submitted well before exploration and development work have been completed, parts of the report are understandably estimates, guesstimates, or lists of alternative methods that might be utilized once the deposit is better defined.

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Submission of a prospectus to our Ministry's Mine Development Assessment Branch is premature but reflects the company's expectations of a successful 1993 exploration season and an attempt to prepare the MDAB for the Stage I feasibility study in hopes of facilitating and streamlining the upcoming permitting process. Heads up!

2. The stated "geological reserves" are currently (May 1993) 2.5 million tonnes, but the mining plan calls for at least 4.0 million tonnes of "proven reserves" (8 year production life @ 500 000 t/yr).

Also note that the cut-off grade of 3.0 gm/t is very low at current gold prices for an underground mine, and yields an unrealistically inflated ore reserve. For local comparisons, Cominco's Snip mine uses a cut-off grade of 12 gm/t for ore reserve calculations; the Johnny Mountain mine used a cut-off grade of 0.3 opt (11.4 gm/t). Red Mountain's larger daily mining rate (1500 tpd) allows some economies of scale which permits a somewhat lower cut-off grade, but I feel the present cut-off grade is impractically low. ✓

The stated geological reserve does not include any allowance for dilution - which is not normally calculated for geological reserves. However, their proposed mining method necessitates a fairly high dilution factor, in the order of 25% or better, which will significantly lower their current stated reserve grade.

The stated geological reserve does not incorporate "cut" assays for exceptionally high grade intersections, which consequently yields an optimistically high grade for the deposit.

Given the above factors, I estimate that the deposits, as outlined to date, represent about one-third of the total resource needed to reach the 'economic threshold' of 4.0 million tonnes of ore grade material. In conclusion, LAC has a long way to go before sufficient economically mineable reserves - both grades and tonnages - are proved up by ongoing surface and underground exploration. (You can stand at ease.)

3. The proposed mining rate of 1500 tpd will be difficult to achieve and difficult to maintain in an underground mining scenario on a long, relatively narrow orebody. The sections of Figures 2-2 and 2-4 do not reveal that the Marc Zone is 'dumbbell' shaped with bulbous ends (including section 1275N), but with a narrow 'waist'. Therefore the stope dimensions indicated near the bottom of page 3-3 will only be achievable in part of the deposit. Smaller stopes require significantly more active headings to maintain daily production rates. Expect to see future mining-rate estimates evolve downward toward 1000 tpd.
4. The road and tramway construction and operation will be both expensive and technically challenging.
5. Acknowledging that all operating mines have some production-limiting step (process or component), winter operations will probably show that the tramway and roadway are the steps that prove to be the bottlenecks for this project.

SUMMARY:

- This report is a useful preview of the company's expectations for the Red Mountain deposit.
- A considerable increase in both grade and tonnage must still be achieved before the deposit could be economically viable.
- I foresee some high (financial) risk aspects for the company.
- There are no elements that represent higher than normal work hazards for the mine labourforce. I confess that the proposal for a 60-70 man tramcar to transport workers up the mountainside conjures up images of a loaded car tramping upward through a black northern night - wind howling, car swaying like a pendulum, heavy wet swirling snow obscuring all landmarks as it accumulates at rates up to 5 feet per day - an appropriate setting for an Alistair Maclean novel. But this technology has worked successfully and safely elsewhere under arctic conditions (Black Angel).
- I see no particularly sensitive environmental issues except for the potential for high ARD levels if broken, sulphide-rich(?) waste rock is 'temporarily' stored outdoors under a very thick blanket of snow for eight to nine months. Oxidizing sulphides are going to generate enough heat to keep that snow melting continuously. The scenario is closer to that of a self-watering heap leach operation.
- No significant fauna should be expected in Bitter Creek. The stream was named at the turn of the century by seasoned prospectors. Even their toughened palates found the water undrinkable as a consequence of its increasingly bitter taste through the summer months.

I hope this is helpful.

cc. WRS