

TO J CARRINGTON  
FROM G BLACKWELL

OCT 13TH 77

NOTES ON MAC GIBBS LETTER OF OCT 6TH

CYPRUS ANVIL (C/A) RUNS 4  
SHOVELS /SHIFT.

$$2 \times 15 \text{ YD} = (9000 \times 2.2) = 19800 \text{ ton/shift}$$

$$\text{or } 4,950 \text{ ton/shift/shovel}$$

$$2 \times 6 \text{ YD} = (2850 \times 3.5) = 9,975 \text{ ton/shift}$$

$$\text{or } 2,494 \text{ ton/shift/shovel}$$

### Brenda

M 182 (11 yd) about 10,000 ton/shift/shovel

BE (6 yd) about 6,000 ton/shift/shovel

∴ C/A NUMBERS AGREE, JIM  
MURDOCK MEANT ALL SHOVELS, NOT JUST ONE.

I DON'T SEE THE REASON FOR  
PART (2), JUST SCALE BRENDA ETC  
AND ADD 10% FOR COLD & NORTH.

ITEM (3) MAKES SENSE i.e.  
FIND LEAST ESCAVATING COST FOR  
PRE-PRODUCTION STRIPPING AND PLAN  
ACCORDINGLY.

GB

OCT 11 1977

1255 Moon Ave.  
Williams Lake, B.C.  
October 6, 1977

MEMO TO: J. Carrington  
FROM: J.M. Gibbs  
RE: GRUM PROJECT

I.D.B.
A.H.C.
P.S.C.
W.J.
D.A.L.
S.P.
J.L.S.
FILE

return → JC

Thank you for forwarding the reports by Kilborn and yourself on our recent orientation visit to the site. We have the following comments on the reports.

- 1.) Anvil, reported their shovel production as 9,000 cubic yards per shift in waste rock for the 15 cubic yard shovels and 2,850 cubic yards per shift for the 5 cubic yard shovels. This is too high. A rule of thumb is that in a good operation, with good fragmentation, shovel production will be 1,000 tons per shift for each cubic yard of dipper capacity. Anvil does not approach either condition and the reported figures may refer to tons per shift. In our initial capital cost estimate we used three seven cubic yards shovels, with an estimated production of 5,000 tons of ore per day and 32,500 tons per day of waste, operating six shovel shifts per day. This is an average shift production of 6500 tons in waste and 6,000 tons in ore. The ore was reduced due to the probable delays in the crushing circuit.
- 2.) Their availability figures are also open to question. This is a widely used, but seldom defined, term. We have always used, and recommend, that Grum use:
  - ✓ Operating time: the time the piece of equipment is actually used.
  - ✓ Delay time: the delays incurred by the operating department from moving, blasting crusher and other normal operating delays.
  - ✓ Down time: the time that the equipment is mechanically or electrically not available to the operating department.
  - Total time: The total hours in the period.
  - ✓ Standby time: The equipment is available but is not operated.

the availability of equipment is defined as:

$$\checkmark \text{ Availability} = \frac{\text{Op. time} + \text{Delay time} + \text{standby time}}{\text{Total time}}$$

$$\checkmark \text{ Utilization} = \frac{\text{Op. time} + \text{delay time} + \text{Standby time}}{\text{Op. time} + \text{Delay time} + \text{Standby time}}$$

In our example on shovels, the estimated availability would be 66.7%; that is two shovels operating out of a fleet of three. This is a realistic availability for ~~for~~ shovels, trucks and tractors, based on the above definition. Tractors may be even somewhat lower after 5,000 hours of operation.

We have used the utilization approach in order to evaluate how well the operating department uses the equipment made available to them by the maintenance department and would recommend it for your use. It is a nice figure to have when you are trying to mediate the war between the two departments.. These wars will occur in the happiest of operations. The utilization figure rarely exceeds 90 percent. This should be taken into account when selecting the number of pieces of a particular piece of equipment to be purchased.

3.) Kilborn included a copy of equipment rental rates for the Whitehorse area in their report. This is frightening as rates at Grum will probably be 5- 10% higher.

at least

You are scheduling a meeting at Brenda later this month and we are making the following recommendation for a part of that meeting. We should sit down and bid the overburden stripping with these rental rates plus an increment for overhead to see what the overburden is going to cost. By that time we will have an indication of the yardage involved and the location of overburden dumps. In the meantime I propose to talk to some contractors to see if we can get an idea

of what the incremental costs would be for a job in that area. In this area of B.C. we can usually get a contractor to work for rental rates plus 10 percent which covers the cost of supervision, service vehicles and other fixed costs.

It has been a concern of everyone that the Grum Project may require a lot of front end money for pre-production stripping. With the rental rates we should be able to approximate a unit cost for this material. If it is too expensive we must then look at the possibility of moving it with Grum trucks and shovels or even the purchase of a tractor-scraper fleet if there is enough yardage to warrant the expense. This unit cost will also be required if the computer group are going to design a truly optimum pit.

We are also wondering if you have had an opportunity to talk with Andre Fortier or Bob Baber on the union certification problems, or at least potential problems at Grum. The possibility of a first agreement similar to the present Anvil agreement will certainly effect the productivity of all phases of the Grum operation.

Please let me know as soon as possible the date for the meeting at Brenda and whether or not you agree with my recommendation on the stripping so that I can start collecting any available data.

You may have realized that this is a two-fingered typing job but it should <sup>be</sup> the purpose. Give my regards to Bud and his TR & . Regards.

A handwritten signature in dark ink, appearing to be 'Mac', with a flourish underneath.