

November 19, 1980

DAILY ORE AND GRADE CONTROL PROPOSAL1. INTRODUCTION:

Since ore grade and quality is highly variable in Zone 2, a daily ore and grade estimation would certainly be very helpful for the mill operation.

With a minimum of work, organization and cooperation, the Engineering and Mine Geology group can provide an accurate forecast by using the actual available data.

2. PURPOSE OF THIS MEMO:

The following points are a proposal to establish a simple method for better ore and grade control on a short range basis. Every step has to be followed for the success of the operation.

3. ESTABLISHMENT OF A SHORT RANGE FORECAST:

Following are the different steps and information required for an accurate forecast:

3.1 Frequency of the Forecast:

The forecast will be based on surveyed ore face in the mine. As the face is picked up only every second day, as a first trial, a forecast can be made every second day for the next 48 hours. (Daily forecast with ore face surveyed every day would be better.)

3.2 Data Provided by Mine Geology and Engineering:

Based on the latest face picked up, a sketch is done on tracing paper by using the base map (1" = 50') and an estimated volume is outlined for the following days (see Figure 1)

This sketch will also provide the grade, the iron and rock type distribution.

A copy of this forecast will be distributed to persons concerned and mining should follow the sequence unless major problems develop. To prevent such cases, a "spare" forecast will be attached.

3.3 Conditions Required for the Success of this System:

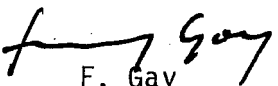
- 3.3.1 Mining should follow the forecast on which they have previously agreed. If any major problem is encountered, the "spare" solution should be used and the mill must be informed.
- 3.3.2 Stockpiling on the crusher feed stockpile should be limited and the stockpile should be built in such a way that no ore would stay more than three months in this pile. This will limit the oxidation of the ore and allow better grade control.
- 3.3.3 From now on, the assay laboratory will provide the iron for the blast hole assays.

4. RECOMMENDATIONS:

In order to keep good control of the ore quality and grade hauled to the crusher, good cooperation between Mining and Engineering is required. The forecast must be followed as far as it is possible.

The Mill Department the Metallurgical technicians should also cooperate in order to improve the method by giving reports on predicted and actual ore and grades.

Also, one should not forget that there will be a delay in ore movement from the primary to the secondary crusher because of the storage in the bins.


F. Gay
Mine Geologist

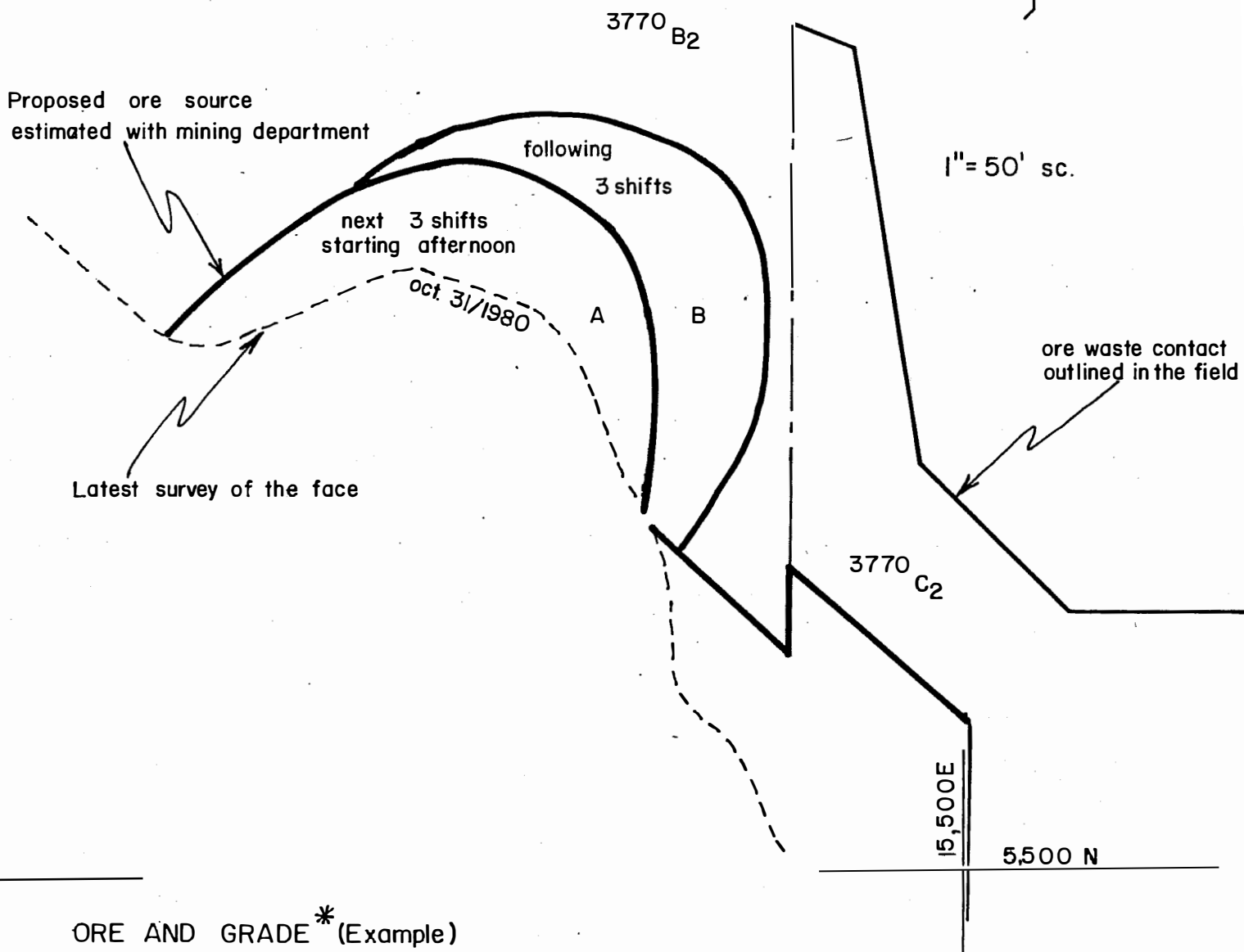
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SHORT RANGE FORECAST FOR :

NOV. 25th AFTERNOON AND GRAVEYARD
 NOV. 27th DAY AFTERNOON GRAVEYARD
 NOV. 28th DAY

EXAMPLE



ORE AND GRADE* (Example)

	M.T	Pb	Zn	Ag g/mt	Fe	Rock Types
Block A	9,000 mt	24	3.8	39.6	16%	2A + 2E minor 2F
Block B	9,000 mt	3.3	4.9	39.7	25%	2E minor 2A and 2F
SPARE FORECAST		C F S P		2.9	4.9	

* Grades are based on blast holes assays within the outlined blocks

NOV. 25th 1980
 Mine Geologist