

WESTERN MINES LIMITED
Inspection Tour
April 18 & 19, 1973

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By: H.T. Blake, Mine Superintendent
Normetal Mines Limited

The visit consisted of a tour of the plant, the mill and the underground.

LYNX OPERATION

Mr. Tschch, the mine's chief geologist, explained the geology of the Lynx property and the supposed Myra geology.

ORE RESERVES

The Lynx operation has approximately 1.6 million tons of ore with the grade assumed to be that of the mill heads.

The Myra operation according to the mine superintendent has 700,000 tons blocked out and is opened to the east. It is interesting to note at the Myra they run into high grade pods which they mill separately in a 90 tpd mill. This ore has a head of Au 0.249, Ag 23.4, Cu 0.9, Pb 3.2, Zn 11.7 and to date they have blocked out 40,000 tons of this type of ore.

EXPLORATION

The ore consists of massive sulphides in pod like deposits. These ore pods lie along the limbs of a fold of which the crest has been eroded.

The geologist tells me last year 1972 is the first year they have dropped in ore reserves (120,000) tons. He seemed to be of the opinion that additional ore could be added in 1973.

Underground exploration is carried out by the mine with approximately 7,000 feet drilled per month. This intensive drilling is required to block out these small ore zones.

Surface exploration is done on contract by Inspiration Ltd. They currently drill approximately 30,000 feet per year.

The surface drills are currently drilling two deep 2,000 foot probes which they hope will intersect the downward extension of the south limb of the shear zone.

At the Myra ore, they are developing, driving a development heading east through the mountain which will eventually join with the westward Price heading.

The Price development heading has progressed some 200 feet. There remains approximately 7,000 feet between the two advancing faces.

As far as I could gather there is no ore reserves at the Price zone. Although some mineralization has been indicated.

By observing the regional map, the three zones lie nearly in line and are within a shear zone.

FUTURE EXPLORATION

The company met with government opposition when they tried to stake a section of land which was on their concession. Their check and application was held up and finally returned. Mr. Tschch thought since they owned an old lease and since the ground was on this lease, if they had contested the refusal they

probably would have won. The company however thought it not an advisable course of action.

MINING METHODS

Except for one isolated long hole stope, the mine uses the cut and fill method of mining. The wall rocks are chloritized and soft and in addition the ore rolls leaving dangerous overhangs. Because of this rolling, filling is done close to the back. A 6 inch cement floor is poured on top of the fill. Productivity per direct labour shift is approximately 15.0 tons per man shift, and I suspect this is averaged with the Myra's production.

At the Myra, the ground is better and this is evident as they use load Haul equipment for the movement of ore. They use cut and fill mining for the stopes with the fill being pumped to the location..

Electric slushers and 42 inches scrapers are used in the stopes.

The rock of the whole area is very soft and water weeps into the ore passes which in driven in the footwall. With such rock types, I would question if mining could be carried on below 2,500 feet below ground level.

MILLING

The mill was constructed of wood. That was cut and sawn on the property. The superstructure and the mill itself was designed and built by "Wright Eng." and someone mentioned that Harold Writht has some 180,000 shares of Western mines.

The ore is crushed wet and the clay is removed, dried and later introduced into the mill feed. Grinding is done to 55% - 200 mesh Vs (Normetals 65% - 300 mesh). In 1972, the mill operated 98 + % of the time and 380,000 tons of ore was milled. (These statistics can be obtained in their annual report just published.)

MYRA FEED

This feed is just the high grade portion which is milled with a separate bin, grinding, and milling circuit. The tails from this mill is fed as heads into the Lynx. They have approx 40,000 tons of this ore outlined. The following figures were taken from month to date for April 1973. I could not obtain an old mill record sheet.

MYRA 90 T.D.P.

| | <u>HEADS</u> | <u>CONS</u> | <u>RECOVERY %</u> |
|----|--------------|-------------|-------------------|
| Au | 0.249 oz | 3.0 oz | 70.0 |
| As | 23.4 oz | 251.0 oz | 85.0 |
| Cu | 0.9 % | 6.0 % | 45.0 Lynx |
| Pb | 3.2 % | 46.1 % | 93.0 |
| Zn | 11.7 % | 15.2 % | 8.5 Lynx |

The tails from this circuit is reconditioned and added to the heads of the Lynx circuit.

The mill circuit produces a concentrate carrying a gross value of \$1,000/ton according to A. Murphy, mill supt. This concentrate is sent to Cominco's Trail Smelter, Philips Bros. of Montreal is their metals broker.

LYNX 1,000 T.D.P.

| | <u>HEADS</u> | <u>RECOVERY</u> | <u>CONCENTRATES</u> | | |
|----|--------------|-----------------|---------------------|-----------|-----------|
| | | | <u>Cu</u> | <u>Pb</u> | <u>Zn</u> |
| Cu | 1.70 | 79% | 29.3 | 5.0 | 1.3 |
| Pb | 1.00 | 68% | 2.7 | 55.0 | 0.84 |
| Zn | 9.18 | 87% | 8.2 | 12.0 | 53.2 |

Copper cons are shipped to Japan and I was told they are currently getting 65¢/lb for it.

Lead cons go to Trail and the staff did express displeasure with this contract.

Zinc cons are loaded on a barge and peddled down the West U.S. smelters. They said they were currently getting 11.2¢/lb for zinc in concentrates.

MILL CONTD.

Feed analysis control struck me as being poor. The slop assays are 24 hrs behind the mill. The mill superintendent, Mr. A. Murphy, made a remark that they were milling blind. He also tells me that they hoped to be trying out some sort of an (ion) analyzer. This unit if it works will reduce the delay to 45 min. and costs approx. \$11,000.

MILL TAILS RE: POLLUTION

The tails is piped through a 10 in plastic pipe and drop boxes and is discharged via a 36 in culvert at the lake bottom. The settling culvert is located 150 feet out from the shore line and is currently 100 feet deep. When operations started, the bottom of the culvert was 200 feet below lake level. A flocculant is added to the tails at the culverts receiving box. I am told the tails builds up and then under its own weight it flattens out. Also, the

culvert could be located farther out indicating no problems for tailings disposal.

Water testing is done on a regular monthly basis and the company retains an independant sampling firm to take these samples.

In the mill circuit, the use of cyanide is kept to a minimum because of the polution threat. (0.3 lb/ton of ore is used).

The tails has a Ph of 6.5 to 8.5 as their tolerance limits.

Water testing is also done down the lake and for the inflowing streams. It is interesting to note some of the inflowing streams carry higher values than samples taken from the tailings area.

The government has three group standards for polution (A, B & C), and the company operates under C group. Their performance however is well under "B" group and "A" group is nearly distilled water.

Recent tests indicated the following water samples to be:

Cu < .005 %

Cr < .005 %

Pb < .005 %

Zn < .005 %

Some stream samples have run as high as .114% Zn.

GENERAL INSTALLATIONS

The company completed a paved road to the property at a cost of \$2,500,000 this expenditure is unretainable and must be made available to the public.

A small hydro electric installation was constructed by the company. This does not supply enough electricity and diesel units are required to suplliment the hydro supply.

The buildings and facilities have to be kept attractive. Lawns are grown.

Camp facilities are near motel standards and the food is excellent.

The cost of keeping the camp appears to be high as few personnel travel the 55 mile road daily and complete facilities must be supplied for everyone. They are currently constructing a heated swimming pool.

TECHNICAL HELP

The mine seems to have an adequate supply of technical trained personnel.

In the mine, they have three (3) geologists and three (3) mining engineers.

The mill has two (2) metallurgical and two (2) chemical engineers. The company also subsidizes staff housing at Campbell River.

LABOUR

Surface labourer receive 4.05/hr and underground miners receive 4.79/hr. Underground bonus averages *12.00/sh and can run as high as \$35.00/shift.

The company has a steady crew of miners but a high turnover exists with present new requirements. Currently raising is held up

because of the lack of qualified personnel.

Until recently, there was few union grievances but lately three (3) grievances have been placed before arbitration. Management sees an increased union intolerance with the new "N.D.P." government coming to power.

The two years contract was usually settled yearly, but last year, the union rejected the company's offer. This present contract expires some time this fall.

One member of management tells me the main issue was dental care which I understand is costly. Also companys out here deviated little from policies set down by their mining association. The association has a published contracts summary which is generally accepted as an operators manual..

Judging from the opinion of the operators', they are not too optimistic about the upcoming negotiations.

OTHER ACTIVITIES

I am told the company has exploration crews working in Mexico and Central America. It may be advisable to check this out.

SUMMARY

The mine is currently making good money. I was told the 1st quarter had an operating profit of \$1,200,000.

They claim labour could be a problem in the upcoming negotiations.

The company has spent a lot of money on their installation much of which is lost as fixed assets.

There is an adequate ore supply for approximately six (6) years. The prospect of additional ore reserves is good.

Improvement in recovery may be obtained with better mill controls.

It appears, with Noranda Sales Services at the company's disposal better metal contract could be attained.

H.T. Blake,
Mine Superintendent.

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