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003152

Mr. R. E. Thurmond
Vice President and General Manager
Anvil Mining Corporation Limited
P.O. Box 2470
Whitehorse, Yukon Territory
CANADA

Dear Bob:

Enclosed are two copies of my ore reserve report.
I am also sending an additional copy to your Los
Angeles office.

My drilling recommendations will be mailed in a
few days.

With best regards,

Yours sincerely

E. N. Pennebaker
E. N. Pennebaker

ENP:mc
encls.

cc - Mr. Thurmond, Los Angeles

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ORE RESERVE ESTIMATE
OF THE
FARO MINERALIZED ZONE

THE ORE BODIES

As now known, the Faro mineralized zone consists of three units. Actually the No. 1 and the No. 3 units are parts of the same ore body offset by faulting. On the other hand, the No. 2 ore body, on the southeast, appears to be detached from the others and to form a separate unit, although future drilling might change this conclusion.

In the writer's estimate dated March 2, 1967, the No. 1 ore body was carried southeasterly beyond the Faro fault (to include ore on Section No. 2). At that time No. 3 appeared to be a detached ore body. Later drilling has joined together ore bodies No. 1 and No. 3, with the Faro fault serving as a break in continuity.

It is now proposed to call the ore northwest of the fault (beginning at Section No. 4) the "No. 1" ore body and the ore southeast of the fault the "No. 3" ore body, but keeping in mind that they are actually parts of one ore deposit.

The writer's estimate of March 2, 1967, was concerned with the amount of ore falling within an open pit designed by the Ralph M. Parsons Company and known as the "Tentative Ultimate Pit".

All of this ore was then known as the No. 1 ore body. Under the present proposal, this same pit would extract most of its ore from the No. 1 ore body, as now defined, plus a substantial amount from the No. 3 ore body. Future designs may extend the open pit mine to extract most of the No. 3 ore body.

The No. 1 ore body, as now defined, is about 2,400 feet long and 1,100 feet wide. The No. 3 ore body is about 2,300 feet long and 1,000 feet wide, although it is still open along its southwest flank and future drilling may prove it to be wider. These two bodies vary from 50 to 150 feet in thickness and are gently dipping and gently plunging.

The ore bodies are covered and masked by glacial sands and gravels with an average thickness of about 55 feet, under which the ore crops out on the buried bedrock surface. From this so-called sub-outcrop the Faro No. 1 part of the ore zone plunges down to the southeast under bedrock and attains a rock cover of some 300 feet where it meets the Faro fault. On the southeast this fault drops it down an additional 160 feet (on longitudinal section B). Farther to the southeast, what we are now calling the No. 3 ore body rises toward the surface and almost reaches it on the far southeast. Thus in longitudinal section this bi-partite ore body has the form of a basin.

No. 2 ore body is found about 500 feet south of the southeast end of No. 3. It is about 1,200 feet long and 1,000 feet wide, as now known, but is open on the southeast end. No. 2 ore body is thin and under a relatively shallow cover of overburden.

The relations of these ore deposits are shown on longitudinal section B, accompanying this report. In looking at this section it should be remembered that No. 2 ore body does not occur in the plane of this section; on the contrary it has been projected about 500 feet northerly to meet the section.

METHOD USED

The reserve estimate is based on vertical diamond drill holes. Most of these are located at the corners of grids that are 283 feet square, although a few are located at half intervals.

A cut-off grade of 5% combined lead and zinc was used, along with a tonnage factor of 8.5 cubic feet in place equals one short ton.

The drill holes were plotted on vertical cross sections, the ore intervals were set down, and the ore blocks and their grades were determined. The ore blocks and internal waste derived on the cross-sections were measured by planimeter, and the measurements were reduced by the above tonnage factor to give their sizes. The metal content of the various blocks was then used to obtain a weighted average grade for lead, zinc and silver.

In his estimate of March 2, 1967, the writer found 38.87 million tons of ore to fall within Parson's "Tentative Ultimate Pit". The following estimate does not give the amount of ore falling within any particular open pit design. It does provide an estimate of all the ore discovered to date.

All of the ore presently in the No. 1 ore body is judged to be "assured ore" whose existence and grade can be looked upon with confidence. At the margins of the bodies this ore has been projected out no more than one-half the grid interval (141 feet) and in some places much less. Where ore has been projected farther than this amount (in ore bodies Nos. 2 and 3) it is called "possible" ore, whose existence and grade must be confirmed by additional drilling.

ORE RESERVES

As above mentioned, the Faro No. 1 ore body goes southeasterly to the Faro fault. The No. 3 ore body, as here defined, continues on southeasterly beyond the fault.

TONNAGES OF ASSURED ORE, NOT DILUTED

Ore Body	Tons	% Pb	% ZN	Combined Pb & Zn	Oz. Ag.
1	33,685,529	3.881	6.361	10.242	1.230
3	23,301,661	2.922	5.236	8.158	1.131
2	5,159,335	3.144	4.844	7.988	1.462
TOTAL	62,146,525	3.460	5.814	9.274	1.212

1 + 3 Ore Bodies	56,987,190	3.489	5.800	9.289	1.189

TONNAGES OF POSSIBLE ORE

Ore Body	Tons	% Pb	% Zn	Combined Pb & Zn	Oz. Ag.
3	2,553,914	2.812	5.093	7.905	0.893
2	635,558	2.776	5.794	8.570	1.120
TOTAL	3,169,472	2.805	5.233	8.038	0.939

TONNAGES OF INTERNAL WASTE

Ore Body	Tons	% Pb	% Zn	Oz. Ag.
1	1,738,219	0.690	1.248	0.348
3	2,683,167	0.927	1.476	0.522
2	None			

TONNAGES OF ASSURED ORE DILUTED BY
30% OF INTERNAL WASTE

Ore Body	Tons	% Pb	% Zn	Combined Pb & Zn	Oz. Ag.
1	34,206,995	3.833	6.284	10.117	1.217
3	24,106,611	2.856	5.115	7.971	1.110
* 2	5,159,335	3.144	4.844	7.988	1.462
TOTAL	63,472,941	3.405	5.721	9.126	1.196

1 + 3 Ore Bodies	58,313,606	3.429	5.799	9.228	1.173

* There is no internal waste in No. 2 ore body.

DISCUSSION

DILUTION

During the mining of these ore bodies, dilution will come from two main sources: (1) "internal waste" occurring within the ore bodies and (2) top and bottom waste above and below the ore bodies. Internal waste occurs as layers that average 30 or 40 feet in thickness. It is roughly estimated that about 30% of this will contaminate the ore as it is mined. This relatively high figure is used because of the thinness of the waste layers.

The amount of dilution caused by top and bottom waste has not been estimated for this report.

CHANGES IN TENOR

The grade of Nos. 2 and 3 ore bodies is fairly constant at about 8% combined lead and zinc. On the other hand, No. 1 ore body,


on the northwest, averages about 10%. Going northwesterly through No. 1 ore body there is also a general increase from Section No. 4 (at 9.148% combined lead and zinc) to Section No. 10½ (12.933%). Although Sections Nos. 11 and 11½ show a drop in grade, this may be due to oxidation and leaching near the sub-apex of the ore body.

FUTURE EXPANSION OF RESERVES

The writer expects that the "possible ore" category will be converted to assured ore by continued exploration.

Further drilling along the southwest flank of No. 3 ore body and beyond the southeast end of No. 2 is most promising. Attractive exploration possibilities also exist westerly from the northwest end of No. 1 ore body. Definite drill sites in these areas will be recommended in a forthcoming report.

Additional exploration in the Faro mineralized zone is very attractive.


E. N. Pennebaker

Scottsdale, Arizona
October 3, 1967