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REPORT

ALAMO SILVER LEAD MINING CO. LIMITED

by

D. F. KIDD

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REPORT ON THE PROPERTY OF ALAMO SILVER LEAD MINING COMPANY LTD.

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MAPS

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Introduction

The property of Alamo Silver Lead Mining Co. Limited comprises the Queen Bess, Idaho and Alamo mines in the Slocan Mining Division, British Columbia. I examined the property August 10th to 16th, 1948.

W. S. Ellis helped in the work and volunteered several sound ideas from his experience with Slocan properties. Most of the topographical and many of the geological data have been taken from maps made available by geologists of the British Columbia Department of Mines. These men were actively mapping the surface and accessible underground workings on scales of 50 to 200 feet to the inch.

In the absence of specific instructions the scope of the examination was construed as answering the question of what to do next with the property.

Only the Queen Bess and Idaho mines were seen. All workings of the Alamo mine have caved.

GENERAL DEVELOPMENT, CONSIDERATIONS, and RECOMMENDATIONS

The main points apparent after a general survey of the available data are:

1. The Queen Bess and Idaho lodes are strong structures that may be expected to extend considerable distances, both laterally and to depth. They belong to a type of lode that has furnished a majority of the larger

mineral deposits of the camp.

2. The Cumberland "C" vein and American Girl lodes are minor structures.
3. Most of the Queen Bess east ore body lay within a length of 250' and depth of 200'.
4. At today's metal prices this ore body would have yielded net smelter returns of about \$2,500,000 omitting freight.
5. It is my opinion that the occurrence in a lode of a lead ore body which reputedly changed downward to zinc ore does not preclude the occurrence of other lead ore bodies at lower elevations in the same lode given favourable structural conditions. This is based on:
 - (a) the supposed change at depth to zinc ore may well be rather a change to zinc ore at the periphery of ore bodies. In any event, most of the Slocan lead ores are really lead-zinc ores.
 - (b) Lead ore bodies occur in close proximity at greatly different elevations, and this is too common to be readily explicable in a hypothesis of vertical zoning.
6. The position in the lodes of the ore bodies found is definitely closely controlled by the structures developed in the lode, and these, in turn, by the pre-formed structures in the rocks cut by the lode.
7. General experience in Slocan mining is, that it is usually inefficient to develop a lode in its entirety as

a means of finding ore. This is because (a) the lodes are so large compared to the relatively plum-like ore bodies, and (b) the bigger lodes are so complex that all branches and pairings are not investigated thoroughly.

I therefore recommend:

1. That no haphazard development be undertaken. Unless very lucky it will not pay off.
2. That in view of the fact that one profitable ore body has been found in the Queen Bess lode, and that production won from the Idaho lode would today have been profitable, detailed geological mapping on a scale of 1"=20' is fully warranted. It should cover the underground workings of the Queen Bess lode, surface of any east extension of the lode on the Palmita claim, and the underground workings and surface of the Idaho lode. Its objective should be the determining what are favourable structural conditions and whether they can be predicted in any east extension of the Queen Bess lode, in the west part of the lode above 10 level, and in the Idaho lode west of the west end of the lower workings.

If favourable structural conditions are found and work is recommended it should be done by bulldozer on the surface and by driving underground. The rocks and ores in general are unsuitable for diamond drilling and its use is likely to give unsatisfactory results.

Location and Access

All three mines are in the upper basin of Howson Creek, in the west central part of the camp. An old road just re-conditioned extends from the New Denver-Kaslo road to the Queen Bess mine at 5100' elevation. Branches, not cleaned out, extend to the Idaho mine at 5700' elevation, and the Alamo mine at 6000'. An aerial tram with branches connects the Idaho and Queen Bess mines with an old mill at elevation 2400 feet close to the New Denver-Kaslo branch of the Canadian Pacific Railway.

The Idaho and Alamo roads are at places in their upper parts subject to small slides.

Title

No check on title or claim boundaries was made. A list got from W. S. Ellis of 35 claims and fractions was accepted as correct.

History of Property

The following data are largely from C. E. Cairnes two Memoirs on the Slocan G. S. C. Mem. Nos. 173 and 184.

Queen Bess, Idaho and Alamo lodes were all first developed in 1892.

From the Idaho and Alamo mines major production started shortly. In 1895 Alamo produced 7300 tons of 100 oz. silver ore. To 1926 combined production from these properties was 25,789 tons, valued \$825,000.

At the Queen Bess the upper and western ore bodies were mined before 1902. Production was nearly 6300 tons of 70 oz.

silver ore. In 1917 in the east part of the mine, between 4 and 6 levels, the largest ore shoot was found. From the records I figure it yielded 12,000 tons of 50% lead ore with 80 oz. silver per ton.

Following company mining leases have been active in all three mines. All three have been idle for many years.

Mine Workings and Ore Bodies (See Maps 1,2,3)

The Queen Bess mine was opened on levels 1,2,3,4,5,6,7,9 and 10 between elevations 5600' and 5100'. Levels 6, 7 and 9 are blind. Much of the mine has caved. It can be entered by 10 level. This level, 9, and parts of 7, 6 and 5 levels only can be seen. One group of ore bodies was mined in the west part of the lode above 5 level and a second larger ore body mined in the east part of the mine between 4 and 6 levels.

The "Cvein" 500 feet in the footwall of the Queen Bess lode has been opened by three adits. Only the lowest is inspectable.

The Idaho mine was opened on 6 levels between 5500' and 6200'. It can be entered on 5 level and only this level and a blind level between this and 6 level are inspectable. The Idaho lode was mined mostly above 3 level though minor stoping was done down to 6 level.

The Cumberland lode of the Idaho mine is in the footwall of the Idaho lode. It is accessible only on Idaho 5 level (Cumberland 2 level). Little is known of its stoping pattern.

The St. John lode of the Idaho mine is also in the footwall of the Idaho lode and parallels it. All workings in it

except a stope to the surface are caved.

On the American Girl claim a minor lode has been developed through workings on the adjoining Black Colt Claim on the opposite or south side of Queen Bess ridge. One level at 4600' elevation has been driven 140' on it.

On the Palmita claim two levels have been driven from the Black Colt workings and some stoping has been done. These workings are caved.

Geology of the Claims.

The claims are underlain by rocks of the Slocan series cut by acidic dikes and plugs. In this area the Slocan series consists of argillite, interbedded argillite and siltstone (fine grained argillaceous quartzite), and siltstone. The relative competency of the rocks is in the same order; the siltstones are usually strong enough to carry a regular fracture, the argillites so weak as to preclude the continuance of any single fracture plane for any great distance (though zones of fractures do), and the interbedded rocks of intermediate competency.

The Queen Bess mine is in the interbedded argillites and siltstones; the Idaho mine is, in its lower part, in siltstone but in its upper part in softer rocks.

Structure

The Slocan rocks are complexly folded and faulted. In general they trend northwest. Evidence being accumulated by geologists of the British Columbia Department of Mines is starting to show that much of the folding in the Slocan rocks is isoclinal recumbent. Many dips are low, but many beds are

upside down showing that they are on lower limbs of recumbent folds. The nose of one of these folds occurs in the lower West part of the Queen Bess mine (see Map No. 4). Here the beds which through the rest of the mine have a prevailing dip southwest of 10° - 50° steepen to vertical or are slightly overturned.

Strike slip faulting is from the crush zones in the weaker beds, obviously common. Minor post-ore faulting is common.

Lodes

The term lode is used as defined by Cairnes ⁽¹⁾ "any single body of fractured ground in which an ore bearing vein or veins occur or may be expected to occur."

Productive lodes in this part of the Slocan mining camp commonly strike in the northeast quadrant. Two types are:

1. Steep (plus 70°) fissures. These are joints of a regional pattern. Movement on them is minor. Production-wise they are secondary to the next type to follow. The Cumberland, "C Vein" and American Girl lodes belong to this type.
2. Shear zones. These zones usually dip south at 40° - 60° and may be complex structures, with branching and braiding slip planes. They are the loci of the majority of the major ore deposits of the camp. The Queen Bess and Idaho lodes are of this type.

(1) Cairnes, C.E. "Slocan Mining Camp," British Columbia.

Description of Lodes

Queen Bess Lode. (See Map No. 2). This lode has been opened over a length of 900 feet and vertical depth of 500 feet. In general it strikes 50° and dips 35° southeast and cuts the beds at a large angle. In this area it cuts interbedded siltstones and argillites. Siltstones is the dominant rock across thicknesses of up to 150 feet. Three dominately siltstone beds are indicated (Map No.2). These beds dip southwesterly at a usual dip of less than 50° except in the lower west part of the mine where they steepen to vertical as the nose of an isoclinal recumbent fold is reached. The beds quite generally strike northwest except in the accessible parts of 7 and 5 levels where westerly strikes are common.

The Queen Bess lode where it cuts argillites has widths up to 25' of crushed rock with usually several gouge seams in it. This ground is commonly closely lagged and hard to see. Much of the work in it is caved. In the stronger siltstone beds the lode may be a single shear plane with much gouge. At places (e.g. 7 level 150' and 350' west of the main incline) branch shears extend into the hanging wall and swing into the bedding and die out.

The mine plans and inspectable workings indicate that both western and eastern ore bodies in the lode raked east. Also apparent is that the lode swung considerably more easterly, from 50° to 80° - 90° , in the part where the ore made. In the eastern ore body this trend is towards that of the bedding and at places coincides with it. The stoped areas here dip more steeply than the average for the lode. These features unique

to the ore bearing parts of the lode are a large part of, if not all, the ore control. The eastward rake of the eastern ore is the rake of the intersection of a more steeply dipping hanging wall branch with the less steeply dipping normal shear of the lode.

In the east part of the levels 7 and 9 exploration was constantly towards the following of shears that swung from the lode into the hanging wall and along the bedding. In each level the main drive gets almost clear of the lode out in the hanging wall at at least one place.

The change in strike of the workings in the ore bearing piece of the accessible east section of the lode, while in part representing a following of branch shears into the hanging wall, also probably indicates a local change in strike of the lode to some extent. This point was not fully determinable. This change in strike is where the lode crosses comparatively competent siltstone bands and is a feature structurally expectable under these conditions.

The possibility of an eastward extension of the Queen Bess lode beyond its known underground limits remains. The easternmost workings of the mine are caved. Old maps show a major fault. The trend shown is parallel in strike and dip to the beds which are here argillite. The magnitude of the fault may be more apparent than real. I have been told that surface mapping on 1"=200' by the Mines Department geologists will require in the vicinity of the expected eastern extension of the Queen Bess lode the postulation of

such a transeurrent fault to account for the observed facts. Further they say there is little evidence of a large strike slip fault dislocating the Queen Bess lode. Caved adits at 5200' elevation and shearing and zinc mineralization found on the road just above them support this hypothesis. The road pit workings are unimportant in themselves.

C Lode

This lode is 500 feet in the footwall of the Queen Bess lode, trends N. 60° E and dips 70°-80° south. It has been traced east for 250 feet from near the surface to a cross-cutting acidic dike. Beyond this point 300 feet of drifting has failed to find any correlatable fracture or ore.

This lode cuts bands of both siltstone and argillites. It is a single fissure with only minor shearing along it, and compared to the Queen Bess lode is a minor structure.

Idaho and Cumberland Lodes

The Cumberland lode is a minor break near and in the footwall of the Idaho lode and will be described with it.

The Idaho lode, in the limited section of the mine in which it can be examined, trends 45° and dips 45°-60° southeast. It has a strong faultplane hanging wall fluting on which indicates the movement has been nearly up and down. Below the hanging wall is up to several feet of sheared rock often with carbonaceous material on the slips. Lenses of calcite occur in the crushed footwall rock. They are abundant and reach a maximum width of 10 ft.

In the parts of the lode that can be seen the rocks cut are quite uniform siltstones except towards the inner end of the lowest level (Intermediate to 5 and 6 levels) where minor amounts of argillite are interbanded. The attitude of these rocks varies greatly and structures are probably complex.

The only part of the workings where ore had been mined that could be seen was the inner (west) part of 5 level. The only factor noted possibly influencing ore deposition was that the rocks near the lode on the surface where the main ore was stoped were distinctly softer and more argillaceous than those in the lower workings. They may have failed to carry the lode fracture as well as the lower stronger rocks and so furnished a structural trap. This is only a guess. With the complex structures apparent, large scale mapping would be necessary to reach a definite conclusion.

The Cumberland lode can be seen on but one level, the No. 5 Idaho level (No. 2 Cumberland) level. It is a regularly trending, fissure with little apparent movement along it. It is arc shape in plan changing in strike from 110° at its west end to 55° in the easternmost accessible workings. Mine plans show it probably swings parallel to the Idaho lode at a distance of 150 feet rather than joints it. It dips vertical to 70° S. where seen.

Little stoping has been done at 5 level. The length of the drive (750') suggests ore was mined above.

American Girl.

This lode is a nearly vertical fissure cutting gently

dipping interbanded argillite and siltstone. The lode is a joint type fissure with little wall movement. It is filled with up to 15 inches of siderite with considerable sphalerite and occasional sparse galena.

Palmita Lode

Nothing can be seen of this lode. From the map it probably had a strike of 20° and dip east.

Alamo Lode

The workings here are all caved. Nothing is known of the lode except that its strike is northeast and dip south and that in a very general way it lines up with the Queen Bess lode.

Ore and Sampling

No ore was seen. Nothing worth sampling was seen. At several places in both the Idaho and Queen Bess Mines there are lenses of galena, a few feet long and up to 2 inches wide. These are in either sills or small pillars. As Leasers have been active in both properties it is unreasonable to expect to find any lead-silver ore remaining.

The American Girl lode has shown zinc values over a maximum of 15 inches. Sampling done some time ago in this lode was plainly selective. The average tenor of the lode by inspection is plainly a small part of the values reported. The lode is of little interest.

Submitted,

Aug. 21st/48.

"David F. Kidd"