

MEMORANDUM

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Handwritten initials and date: S/H/73

FROM THE

**DEPARTMENT OF MINES
AND PETROLEUM RESOURCES**

VICTORIA, B.C., December 4th, 19 73

TO Mr. J. E. McMynn,
DEPUTY MINISTER

WHEN REPLYING PLEASE REFER
TO FILE NO.....

Re: ANNEX MINE OF REEVES MacDONALD MINE LTD.

The following notes are based on my visit to Remac on
November 28th and 29th:

BACKGROUND:

Late in July, Reeves MacDonald negotiated an exploration agreement with Hecla, the owner of the Crown Granted claims west of the Annex Mine and with Diem Mines, who hold a group of claims to the south of the mine. As I understand it, Reeves MacDonald is to drive 1,100 feet of drift on the 800 level and to undertake exploratory drilling to be paid for at a contract price by Hecla in return for production considerations, including a royalty. The decision to go into production on any new ore and the management of production is the responsibility of Reeves MacDonald.

During exploration, production has been continued and the pollution control permit permitting tailings to be discharged directly into the Pend d'Oreille River, was extended another six months to the end of February 1974.

The 800 west exploration drift through Diem ground into the Hecla claims is shown on Figure 1. The drive encountered fractured ground and heavy flows of water which required grouting and caused delays. Renegotiation of the agreement with Hecla also caused delays and as a result the drift has been stopped short of the projected point of completion and drilling is going ahead on a pattern modified from the original plan. Through most of the drift, thin wisps of sulphides are un-oxidized but 400 feet west of the Hecla boundary fractures are coated with rust, the dolomite has a buff to brown stain and there is one prominent rusty gouge zone. A hole (73-H5) drilled to intersect the projected position of the extension of the Annex orebody encountered 70 feet of rusty carbonates and broken and vuggy ground. Assays in this section show significant amounts of zinc, cadmium and silver. This oxidized material was entirely unexpected and is most discouraging to the search for a new orebody.

GENERAL GEOLOGY:

The orebodies at the Reeves MacDonald and the Annex Mine are in an isoclinal syncline of limestone plunging steeply to the southwest with axial plane trending S 70° W and dipping 60° to the south. They are

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within lenses of dolomite in the limestone, known as the Reeves limestone, which is underlain by calcareous schist of the Truman member. Four orebodies, the O'Donnell, the B.L., the Reeves and the K-zone are the faulted segments of one canoe-shaped orebody in the trough of the syncline. The Annex orebody is a few hundred feet westward along the southern limb of the syncline from the Reeves orebody. It is lenticular in plan and plunges parallel to the axis of the syncline. A much smaller lens, the 1250 zone, occurs just west of the Annex orebody and is currently being mined. Other mineralized zones in the area are the MacDonald and Point zones on the northern banks of the Pend d'Oreille River. These are shown in diagrammatic form in Figure 2. Not shown is the Red Bird zone which outcrops at an elevation of about 2,800 feet a mile and a half west of the River.

The faults which break the orebodies into segments trend north and dip at moderate angles to the east. They are normal faults which cause a lefthand offset of the south dipping formations.

OXIDATION:

The main minerals of the orebodies are pyrite, honey-coloured sphalerite and galena. The depth of oxidation varies widely. Little or no oxidation was present in the Reeves and O'Donnell orebodies. The MacDonald zone is entirely oxidized whereas in the nearby Point zone sulphides occur at the surface. The Annex orebody is oxidized almost to the 1100 level some 700 feet below the surface and the 1250 zone is oxidized to almost 500 feet below the surface. This deep oxidation is several hundred feet below the level of the bottom of the Pend d'Oreille River. In the Red Bird zone, exploration by Cominco failed to reach the bottom of the oxidized zone several hundred feet below the outcrop but well above the River and the Annex Mine. Oxidation of the MacDonald and Annex zones below the level of the River suggests artesian circulation of oxygen-bearing groundwater along restricted channellways the location of which is unknown. A related cause is suggested for the oxidation encountered in the 800 drift west and drillhole 73-H4. It is to be expected that the oxidation will terminate downward but the depth and extent of oxidation cannot be predicted.

The water-bearing dolomite encountered in the 800 W drift contains open fractures more or less parallel to the foliation. The oxidation exposed in the drift is along fractures which cut the foliation at a long angle and swing into parallelism with it. These fractures have two possible origins:

- (a) They may be related to the northerly trending normal faults, one or more of which in this area curves westward into the foliation
- (b) They may be related to late warps of the foliation such as were encountered in the 800 W drift where the strike curved from S 70° W to due west and back to S 70° W near the face.

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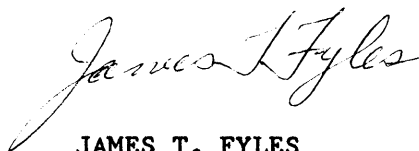
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PROPOSED DRILL PROGRAMME:

The projected drill holes are shown on Figure 1. The horizontal hole being drilled southward from the face was drilling in cement following grouting while I was there. It will be completed through the Truman member into the hangingwall grey schist (Emerald member) and the hole drilled to the southwest will be drilled subsequently. If mineralization is encountered and it is oxidized I suggest a down hole and an up hole be drilled to obtain some information on the distribution of the oxidation above and below the level.

FUTURE:

Present reserves will be completely mined out by the end of February 1974. If the drill programme does not find significant sulphide mineralization by that time the mine will be closed. I recommend that the Department follow progress closely and if a decision to close is made, all useful records which show geology or reserves of lead-zinc mineralization be obtained and filed here for future reference.



JAMES T. FYLES
Associate Deputy Minister of Mines

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