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New Imperial Mines Ltd.

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MEMORANDUM

Date: February 8, 1971

TO: W.A. Dean

FROM: D. Tenney

RE: PUEBLO AREA DRILLING

The three areas marked A, B and C on the accompanying maps show anomalous I.P. chargeability responses. The report from Seigel written by Jon Baird indicates that only "A" is likely to contain sufficient metal to produce an ore body, and accordingly after discussion with W.A. Dean it was decided to drill in the hope of finding a Keewenaw type ore zone. Some malachite staining was observed on joints in the diorite some 200 feet away from the peak chargeability value, and copper sulphides are reported to have been found in a trench excavated across a weaker part of this anomaly on line 24 north of the War Eagle Grid.

A new grid with lines at 100 foot intervals was cut earlier this week over the anomalous chargeability area and mag recordings taken at 25' intervals. A magnetic low correlated reasonably well with the increased chargeability zone. The hole suggested by Seigel was modified to allow drilling perpendicular to the interpreted strike as shown. This hole is expected to start about February 9th.

The second proposed hole on anomaly "A" on line 6+00 N of the War Eagle Grid will also be drilled into this 3-4 millisecond high. A Pueblo (hematite) or Keewenaw (mineralized silicate skarn) type ore shoot may be located. An early I.P. survey (?1964) over the Keewenaw ore zone gave only a 3 millisecond peak above background and here mineralization is very shallow. In the area of anomaly "A" anything up to 50 feet might be expected.

The third anomaly, "C", is less than 10' wide according to the report from Seigel and therefore will not be drilled at the present time.

D. Tenney

D. Tenney,
Chief Geologist

c.c.. P. Steen
J.B. Howkins - Attached (a) I.P. Report & Maps
(B) New Imperial Plates showing chargeability & proposed drilling
(c) Lorne Air E M Survey

PUEBLO AREA

Three I.P. anomalies in the Pueblo area have been detailed for diamond drilling: These are located in the areas given below:

Anomaly 'A"	Line 6-8 N	24-28 W
'B'	Line 22 N	10 W
'C'	Line 8-12 s	10 W

These anomalies although not particularly large are significantly above background and lie in interesting geologic situations.

1. Near to or on the diorite/skarn contact.

2. In vicinity of old Pueblo workings from which were recovered over 100,000 tons of 5% copper.

3. I.P. chargeability values equal to or larger than the high existing in the Pueblo Shaft area.

ANOMALY "A"

1000' south of the old Pueblo shaft area is most interesting as it lies associated with geochemical values of up to 4000 pp.m. copper in its immediate vicinity. The swamp directly above the anomaly was either not sampled or gave low order anomalous copper values. It also apparently strikes E-W judging by the chargeability contour map - this however is not a reliable guide and Jon Baird of Seigel Associates thinks the best way to drill would be on line 6N at 22 west, drilling west at -45°. He also suggests that there is either low metal content causing these anomalies, or that the source of the anomaly is small with relation to the electrode spacing. A rule of thumb estimate indicates that a large mass containing 1% metal sulphides by volume (2% by weight appx) would give a chargeability of about 10 milli-seconds so long as the extent of the body is greater than the electrode separation. In the case of anomaly A, the peak is about 4 milli-seconds above the local background.

ANOMALY "B"

This is a stronger I.P. chargeability high rising to about 10 milliseconds above the local background. A trench across this anomaly on line 24 N has to be examined before commencing drilling, but assuming that no graphite is found then the anomaly should be drilled. The possibility of a blind ore shoot should not be ignored.

ANOMALY "C"

On line 10 S at 10 E (on Best Chance Grid) is a broad high with a peak of 9m/sec at 10 E,4m/sec above background. Detailed work using 100 and 50' electrode springs confirms the peak which is very well marked.

The anomaly deserves drilling, though it should be noted that it lies parallel to theregional strike of the sediments and may be a graphitic horizon in the limestone. There are indications that the anomaly continues under swamp to the north where it was not possible to complete the I.P. survey.

SUMMARY

Three anomalous areas of I.P. response were found during December 1970, the Pueblo area. All three occur in areas considered very favourable on account of the geology (proximity of diorite/skarn contact) and the past production record of the area. While the anomalies are not extremely large they are significantly above background, and certainly parallel, in the case of B/ & C/, to the regional strike of the sediments in the area. All three anomalies lie in areas of interest outlined on the basis of the geochemical soil survey, though there is no direct correlation between the two.

DRILLING RECOMMENDED

Anomaly A/ should be drilled during the winter months as it lies in an area partly in swamp which may be inaccessible during summer.

Anomaly B must await investigation of the trench on line 24 North around 10 W.

Anomaly C could be drilled during summer or at the same time as Anomaly A.

N.B. 1. Of the $24,000 allocated to the Pueblo project, $12,000 is estimated to have been spent to cover the 18 line miles of I.P. work and extra line cutting.

2. Any new lines cut have been covered by M.F.1. fluxgate magnetometer and plans are being prepared (on standard plates).

3. A report and final maps are in preparation by Seigel Associates in Vancouver.

D. Tenney

D. Tenney,
Chief Geologist

c.c. W.A. Dean
D.M. Morgan

February 17th, 1976.

R.T. McIntosh

A. Hureau

Exploration Pueble Area

Attached is a plan showing the interpreted geology of the Pueblo area at the 200' level (elev. 2455'). Although there does not seem to be much chance of ore below the present drilling under the Pueblo mine (see Sects. A.H. '75), the pendant postulated north of the mine 24-30N, 18-26W should be tested.

IP coverage of this last area is not good. IP done in 1970 did not cover the area, and IP done prior to 70 was done using a 200' electrode spacing only. (See Composite IP done.) The depth of overburden (100' vertically at PB1) may make these data unreliable. Several chargeability anomalies detected in the 1964 Siegel survey have not been tested.

I suggest that detailed IP be done over the area of the postulated pendant, and over the anomaly detected in the 1964 survey at 12N, 25W.

A hole should be considered on section 18N to test the quartzite limestone contact below that intersected in hole PB10.

Att.

cc: V. Jutronich
cc: Bob Fraser.