This report has been examined by the Geological Evaluation Unit
Approved as to technical worth by:
RESIDENT GEOLOGIST
Approved as to cost in the amount of: $ 1600.00
RESIDENT MINING ENGINEER
Accepted as representation work Section 53(4) Yukon Quartz Mining Act.
COMMISSIONER OF YUKON

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INSPECTORS OFFICE
WHITEHORSE, Y.T.

REPORT

ON THE PROPERTY OF

MOGAR MINES LTD.

BENNETT LAKE, CARCROSS AREA

YUKON TERRITORIES

RECEIVED
JUL 11 1969
MINING
INSPECTORS OFFICE
WHITEHORSE, Y.T.

BY

HUGH H. SUTHERLAND,
B.A.SC., P.ENG., M.E.

25TH OCTOBER, 1968.

CONTENTS

SUMMARY

Mogar Mines Limited holds by staking and option a total of 18 contiguous unpatented mineral claims in the Wheaton River mineral district of the southern Yukon Territory.

The claims are located about 45 miles due south of Whitehorse in the west shore of Millhaven Bay on Bennett Lake.

They are easily accessable by water or on the ice of Bennett Lake, from Carcross 10 miles to the northeast, or by aircraft from Whitehorse,

Geologically the area straddles the eastern contact of the Coast Range intrusives with Mesozoic sediments, volcanics and schist. This contact strikes northerly through the Company's claims.

Mineralization is widespread in the district consisting mainly of gold-silver-lead, lead-silver, and antimony-silver veins both in the intrusives and Mesozoic rocks.

Two well known deposits being developed nearby are those of Arctic Mining and Exploration and Yukon Antimony on gold-silver and antimony-silver veins respectively.

Government mapping shows two vein type occurrences containing gold, silver and lead values occurring on the Company's property. This mineralization has been reported by others as well.

These occurrences should be investigated, located as they are in the heart of a well mineralized area in similar geological conditions.

The area was tested with a Crone E.M. with inconclusive results.

Three grab samples were taken and showed good values. Two of these were float and one in place from the adit. The area should be prospected in a detailed manner next season.

Estimated cost would be $8,500.00

Report on the Property of

Mogar Mines Ltd.

Bennett Lake, Carcross Area

Yukon Territories

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INTRODUCTION

At the request of the company management this report was prepared to determine the results of work performed and submit further recommendations on the company's 18 claim property in the Bennett Lake, Carcross area of the Yukon Territories. This report was based on the writer's previous report of March 26th, 1968 and examinations and analysis of the work programme undertaken in September 1968.

PROPERTY

The property of Mogar Mines Limited consists of 18 contiguous unpatented mineral claims in the Whitehorse Mining District of the Yukon Territory. The claims are more particularly described as follows:

Name	Date Recorded	Grant No.
Roy 1 - 4 inclusive	June 28, 1965	92169, 92171, 92170, 92172
Eric 5, 7, 9,	Feb. 3, 1966	Y 181, 182, 183
Eric 4, 6, 8	Feb. 3, 1966	98627, 98628, 98629
Eric 18, 20, 22	Feb. 3, 1966	98636, 98638, 98640
Eric 35, 37, 38, 39, 40	Feb. 23, 1966	Y 190, 192, 193, 194, 195

The Roy claims are held under an option agreement which is due January 7th, 1970.

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LOCATION AND ACCESS

The property is located about 45 miles due south of Whitehorse on the north shore of the west arm of Bennett Lake and on the west shore of Millhaven Bay.

The Wheaton River empties into Bennett Lake about 1½ miles east of the claim group.

The claims are on sheet 105D-2 of the National Topographic System with coordinates approximately 135° 00' west longitude and 60° 05' north latitude.

Direct access to the property by road is not possible, although the Annie Lake road could be extended south along the Wheaton River valley for about 14 miles to the property.

The town of Carcross about 10 miles northeast of the property, at the north end of Bennett Lake, is connected to Whitehorse via a good secondary gravel road and the Alaska Highway.

The White Pass and Yukon Railway closely follows the road from Whitehorse to Carcross where it crosses the narrows at the end of the lake and follows the east side south to Skagway.

The property can most easily be reached by fixed wing aircraft or helicopter chartered at Whitehorse, although in the winter it would be cheaper to make use of the ice on Bennett Lake.

TOPOGRAPHY AND CLIMATE AND FEATURES

The property lies at the western margin of the Yukon Plateau and the eastern edge of the Coast Range mountains along an easterly facing relatively steep mountainside ranging in elevation from 2,150 feet above sea level at Bennett Lake to 5,000 feet above sea level at the

Topography and Climate and Features cont.

the western edge of the claim group. There is abundant outcrop on the western side of the property high up on the mountainside while below this to the east, talus, and glacial sand gravel and boulders cover most of the claim group.

Vegetation is restricted to below about 4,000 feet and consists of spruce, pine and balsam with willow, birch and poplar mainly in the valleys.

Permafrost is locally present especially on the northern and higher slopes.

The climate is not as severe as in other parts of the Yukon further from the moderating effects of the Gulf of Alaska. Snowfall is relatively light amounting to about 5 feet while the temperature occasionally drops to - 50°F. in mid winter. Daylight is limited to about 6 - 7 hours in December while during June and July there is almost 24 hours of daylight, and temperatures are commonly 60 - 70°F.

The rivers are free of ice in May and most of the snow is gone in late April in the low areas.

GENERAL GEOLOGY

The lower Wheaton River area lies along the eastern margin of the Coast Range batholith and the Tagish belt of lower Mesozoic sediments, volcanics and schists.

In the immediate vicinity of the property, a series of low grade metamorphic schists of both volcanic and sedimentary origin form a thin belt along the contact with the Coast intrusives.

General Geology cont.

These schists are probably the oldest rocks in the Wheaton River area and are tentatively classified as Upper Triassic belonging to the Lewes River group.

The foliation is steeply dipping and strikes north to northwesterly generally following the trend of the Coast Range contact, except where locally deformed by the intrusives.

Mapping by Fyles, Johnston and Wheeler of the G.S.C. (Map 1093A - 1961, Whitehorse) shows the contact of the Coast intrusives to be faulted with a displacement of about ½ mile where it crosses in a northerly direction through the claim group.

ECONOMIC GEOLOGY

The mineral deposits of the Wheaton district have been well known since the first of the century and include four main types:

(a) Gold - silver veins with minor galena

(b) Antimony - silver veins

(c) Silver - lead veins

(d) Contact - metamorphic deposits

Of these, the gold-silver variety are the most numerous. Arctic Mining and Exploration are presently developing several high grade veins on the Big Thing and Montana properties located on Montana Mountain about 10 miles east of the Company's claims.

The antimony-silver veins are of comparable interest although less widespread. Most of these are located on the northwest slope of the Carbon Hill, about 12 miles northwest of the Company's claims. Yukon Antimony are presently developing the best of the known deposits on the old

Economic Geology cont.

Becker-Cochran property.

In G.S.C. Memoir 312, Wheeler states that two showings were reported by A. E. Aho along shear zones in metamorphosed rocks west of Millhaven Bay, and on Map 1093A which accompanies the Memoir, two showings are marked which lie within the claims of the Company. One is shown as a silver-lead type while the other is gold-silver-lead. The stakers also reported these occurrences, but no samples were recovered for assay.

LOCAL GEOLOGY

The property lies along the eastern contact of the Coast Range Batholith which is here composed of granodiorite. The batholith is bounded by greenstone and minor pyroclastics, assigned to the Upper Triassic Lowes River group (see G.S.C. Map 1093 A and Memoir 312).

The volcanic rocks are structureless and typically dark green and fine-grained. A suggestion of pillow structure was seen near the south showing. Near the contact the intrusive becomes more dioritic in composition.

NORTH SHOWING - is related to a strong fault which strikes E-W, directly across the trend of the hillside, and form a pronounced lineament or gully. The horizontal offset on this fault is about half a mile. A number of rusty gossan zones are associated with the fault and a sample of sandy soil formed by the weathering of these gossans was assayed geochemically and contained 550 ppm copper. An adit was driven on a weak vertical shear zone which cuts a gossan zone in volcanics, near the 4000 foot elevation. The adit, which is at least 100 feet in length, is in good condition to the 50 foot point where it is partially blocked by a small cave. Most of the dump material has been removed by snow slides and only a few small pieces

Local Geology Cont.

of copper oxide were seen. A character sample of the best material on the dump assayed 0.76% copper, 0.1 ozs/ton silver and trace gold. Further downhill two veins occur. One strikes roughly parallel to the fault and contains minor disseminated galena and chalcopyrite in a quartz-carbonate gangue. It is well exposed for a length of 100 feet on a steep cliff. A grab sample of the best mineralization seen assayed 6.9% copper, 4.6% lead and 9.3 ozs/ton silver. However, the vein structure is very weak and irregular and the mineralization occurs as short, erratic, lenses and this showing has no economic potential. The other veins strikes parallel to the contour of the hill, a little east of north, and is filled by manganiferous siderite. No sulfides were seen and a grab sample assayed trace-in gold, silver and lead. A soil sample downhill was analyzed geochemically and returned 240 ppm copper, 116 ppm lead and 750 ppm zinc.

SOUTH SHOWING - (see Figure 2)

A number of lensey quartz-carbonate veins occur in the greenstones in this area. None of them are more than twenty feet long or one foot wide. Only minor amounts of arsenopyrite was seen and a grab sample of the strongest vein returned trace for gold, silver and copper. This vein strikes N25E and crosses an old claim line, passing beneath a small patch of shallow sandy overburden to the north, from which it does not reappear. Sixteen soil samples were taken from this small overburden area. They are plotted in plan on Fig. 2 and the geochemical assays are shown on the following page.

WORK PROGRAMME

5

During the 1968 season two visits were made to the property,

Work Programme cont.

during which time an E.M. survey was conducted over the showing areas, by Clark Geophysical Surveys, who were also responsible for the prospecting and sample selection.

The following description of the work performed is taken from Mr. Alex Clark's report of September 28th, 1968.

" Following the instructions of Mogar Mines Limited, this property was examined by Alex Clark and Terrence A. Clark between September 8, 1968 and September 20, 1968. Two visits were made, both in the company of Ronald Atlin, a guide in the Carcross district. On the first trip both the north showing and the south showing were covered by an electromagnetic reconnaissance survey. The north showing (having an adit) proved to be difficult to employ E.M. due to the steep angle of the mountainside and as thought by the writer that the rock is fractured to the extent as to render this method completely insufficient for the purpose of ascertaining the possible conductors which may lie there.

Crone dual-frequency portable vertical loop E.M.'s were used on this property. On the second circuit of the north showing the majority of the claims and much of the surrounding property were prospected by the above mentioned.

The prospecting turned up several very interesting pieces of malachite and chalcopyrite as well as one particular sample containing (believed by the writer to be) lead, galena and possibly silver. Most of these samples including the lead were found spread along and down the hillside and not in their original setting. This is with the exception of those found in and about the vicinity of the adit.

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Work Programme cont.

The south showing which was also surveyed using the Crone J.E.M. duals. . .

Since this property took a great deal of time to locate on the first excursion after minimal survey work nothing of interest was divulged, the majority of work here was done on the second tour due to the weather during the first week.

On the second encounter after much electro-magnetic work, two weak conductors were located.

When this showing was prospected nothing of interest as to economical possibilities were uncovered"

CONCLUSIONS

The results of the Electromagnetic survey were basically inconclusive.

Although two conductors were located it was not possible to establish the source or size of the anomalous cause.

Three grab samples were taken by Mr. Clark, two of which were float of undetermined origin, and one from the adit. Results are appended to this report. Although the samples taken were of float and not in situ, it must be remembered that these samples are from a highly mountainous area and from a reasonable height on the mountain. It would therfore by expected that they were of talus rather than Glacial transport and the source could be expected to be up slope from the resting place. In this respect the sampling reports must be considered encouraging.

One must conclude that mineralization is present in the area and may be present in economic quantities.

3

RECOMMENDATIONS

It is recommended that the area and claims be prospected and mapped in detail. To this end a two man crew should spend one summer season on the ground. The crew chief should have sufficient geological knowledge to prepare a geological map of rock types outcrops, showings, and structures, and be capable of operating some geophysical equipment and geochemical sampling.

A Radem or Ronka 16 unit should be supplied and checked over the claims.

Some geochemical samples could be taken in areas to be determined by the work programme.

Approximate cost of the above programme is as follows:

Prospecting and Mappimg	$5,000.00
Geophysics and Geochem.	2,000.00
Contingency and Travel	1,500.00
Estimated Total 1969 Season	$8.500.00

Respectfully submitted

H. H. Sutherland,

B.A.Sc.,P.Eng.,M.E.

CERTIFICATE

I, Hugh H. Sutherland, do hereby certify that:

1. I am a Mining Geologist with offices located at 12 Richmond Street East, Toronto, Ontario.
2. I have been practising my profession continuously for over sixteen years.
3. I am a graduate of the University of Toronto, 1952, with a degree in Mining Engineering.
4. I have no interest, nor expect to receive any interest in the property or securities of Mogar Mines Limited.
5. I am a member of the Association of Professional Engineers of Ontario.
6. This report was prepared based on examination of previous reports by Cathro and O'Connor 1967, the writer's familiarity with the area over the last fifteen years, and supervision and examination of Alex Clark's work.

DATED at Toronto, this 25th day of October, 1968.

Hugh H. Sutherland,
B.A.Sc.,P.Eng.,M.E.

5000

4000

Millhaven Creek

North Showing

AZURITE L 100

L 102 CROMWELL

L 101 MALACHITE

14

LEWER RIVER GROUP

GREENSTONE

5000

4000

COAST RANGE BATHOLITH

GRANODIORITE

3000

South Showing x

See Fig. 2

10

WHEATON RIVER REFERENCE TRAVERSE

WEST ARM

MILLHAVEN BAY

BENNETT LAKE

BENNETT

W.P. & Y.R. RAILWAY

Legend

- ADIT
- GOSSAN ZONES
- FAULT
- VEIN

0 1500 3000 4500

Ft.

Association of Professional Engineers of the Yukon Territory
R. J. CATHRO
GEOLOGICAL
ENGINEER

Claim Survey by H.G. Dickson, 1908.
Base Map traced from Survey
Plan 704 N, Mining Recorders Office
Whitehorse, Y.T.

MILLHAVEN BAY PROPERTY

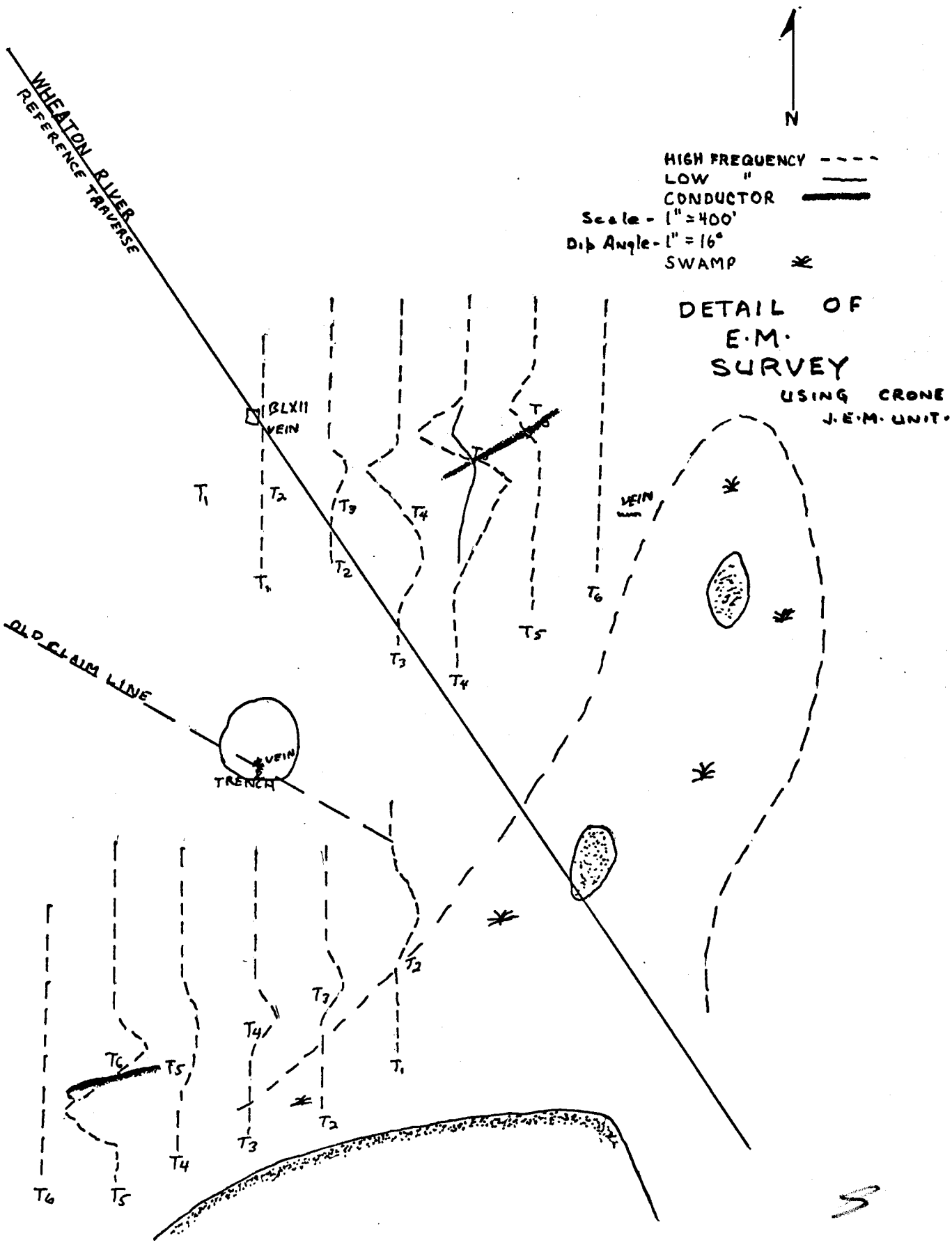
MOGAR MINES LTD.

CARCROSS DISTRICT, YUKON

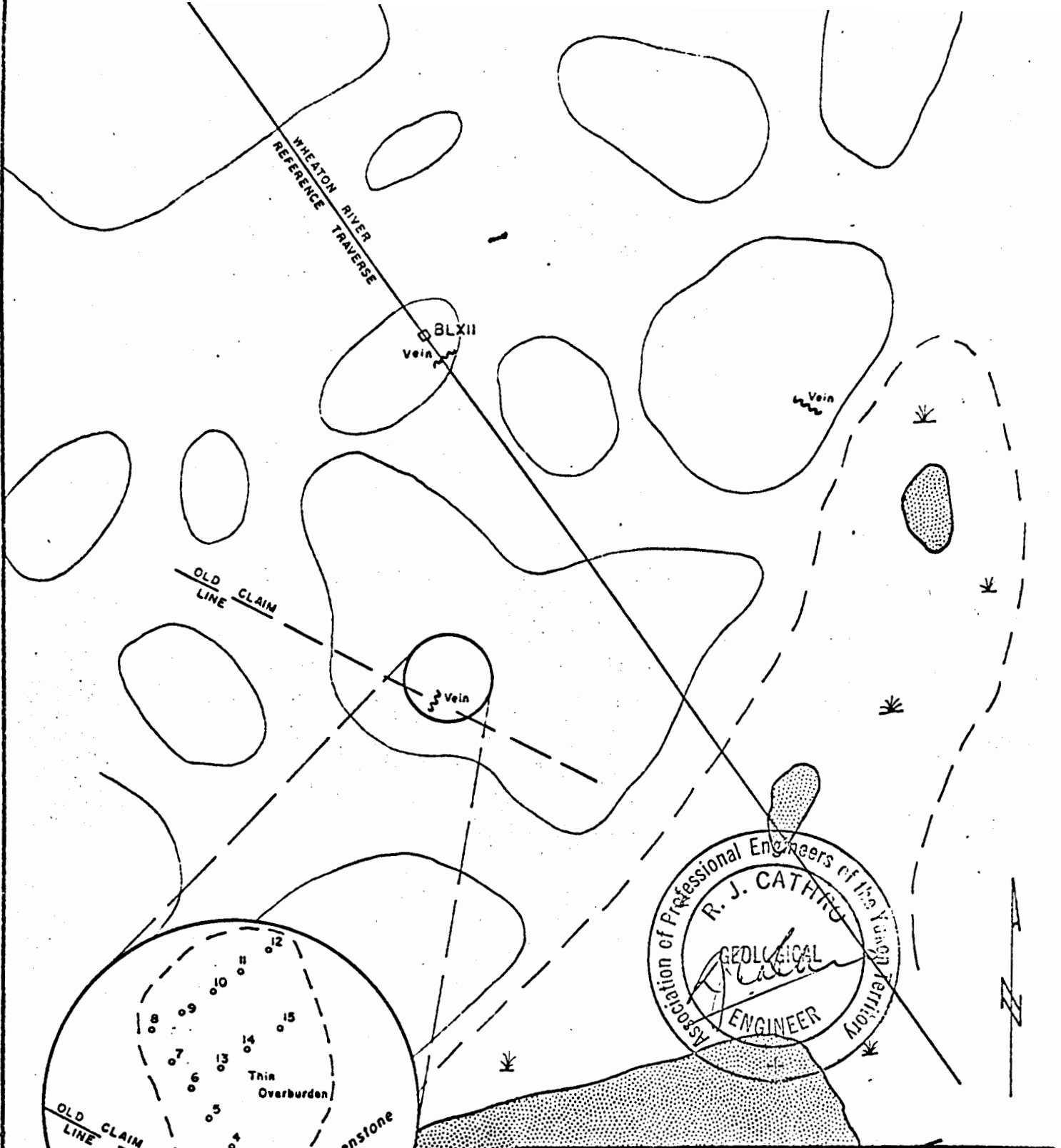
ORIGINAL WORK BY
ARCHER & CATHRO
Revised by
EARTH SCIENCES INTERNATIONAL

SCALE 1" = 1/2 MI Oct 1968 FIG 1

Claim Sheet 105D-2



MOGAR MINES LTD.
SOUTH SHOWING
MILLHAVEN BAY PROPERTY
YUKON



DETAIL OF SOIL SAMPLING
1" = 100'

SOUTH SHOWING
MILLHAVEN BAY PROPERTY
MOGAR MINES LTD.

ORIGINAL WORK BY
ARCHER & CATHRO
REVISED BY
EARTH SCIENCES INTERNATIONAL

Oct - 1968 SCALE 1" = 400' FIG 2

CLAIM LOCATION MAP

Whitehorse Mining District

YUKON TERRITORY

SCALE: 1" = 1/2 MILE

OCT - 68