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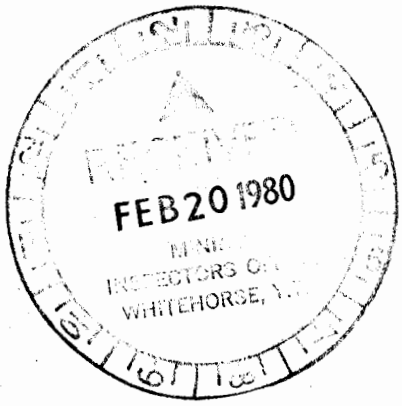


REPORT ON
GEOLOGICAL MAPPING
AND SOIL TESTING SURVEY
JUNE 19, 1979 TO SEPT. 25, 1979

TJOP 1-44 CLAIMS

TESLIN JOINT VENTURE

DAWSON MINING DISTRICT, Y.T.

CLAIM SHEETS 116 B/5 & 116 C/8

LATITUDE 64°22'N LONGITUDE 140°00'W

R.J. Cathro, B.Sc., P.Eng.

January 15, 1980

090521

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of $ 3,300.00

Resident Geologist or Resident Mining Engineer

Considered as representation work under Section 53 of Yukon Quartz Mining Act.

B. R. BAXTER
Supervising Mining Recorder

Commissioner of Yukon Territory

TABLE OF CONTENTS

FIGURES

INTRODUCTION

The TJOP 1-44 claims were staked for Teslin Joint Venture (Cassiar Asbestos Corporation Ltd., Cominco Limited and Exploram Minerals Ltd.) during June 1979. They cover a poorly-exposed series of well-serpentinized ultramafite boides containing an unknown quantity of fair-quality chrysotile fibre.

Prior to recording the claims, soil pits were dug at regular intervals over suspected ultramafic host rocks and samples of soil were collected for laboratory anaysis. This work was done to supplement a similar program begun by Cassiar Asbestos Corp. Ltd. during 1978.

The claims were revisited on June 19 and September 25, 1979 for further geological mapping and collection of soil samples. Approximately 7 km of compass lines were mapped and 93 soil samples were collected.

The program was managed by Archer, Cathro and Associates Ltd. The examinations were conducted by geologists E. Onasick, P.Eng. and S. Murray. Helicopter transportation was supplied by Trans North Turbo Air Ltd., Whitehorse

PROPERTY, LOCATION AND ACCESS

The TJOP property is situated on the north bank of the Yukon River, approximately midway between Dawson and Clinton Creek. It consists of fourty-four contiguous mineral claims that were recorded in the name of Archer, Cathro in the Dawson Mining District as follows:

Claim Name	Grant Numbers	Expiry Date
TJOP 1-44	YA32682-YA32725	19 June/80

The claims are located at latitude 64°22' north and longitude 140°00' west, straddling NTS claim sheets 116B/5 and 116C/8, about 44 km west of Dawson. Access to the property is by helicopter from Clinton Creek or Dawson City.

HISTORY AND PREVIOUS WORK

The earliest exploration on the property was associated with a sulphide occurrence that has not been relocated but is thought to occur low on the hillside near the riverbank. Known as the Roal occurrence, it was first staked in March, 1927 by F. Envoldsen, L. Roal and P. Rost, who drove a short adit later in the year. The property was examined by W.E. Cockfield of the GSC, who reported in the 1927 Summary Report that two areas were explored. The uppermost showing consists of weakly disseminated galena and sphalerite in a limestone bed about eight inches thick that is part of the enclosing schist sequence. It occurs close to a porphyry dyke and is apparently a skarn showing. The porphyry dyke is probably Tertiary in age and is apparently quite local in extent. The adit was driven at a lower elevation in quartz-carbonate alteration at the margin of a serpentine body. No sulphides are present and the prospectors may have mistaken green mariposite in the quartz-carbonate alteration for malachite.

The fibre occurrence was apparently first staked in June, 1964 by Willy and Robert DeWolfe as the Esther 1-2 and Edith 1-2 claims. The prospect was examined by Cassiar Asbestos Corp. geologist Bill Plumb a few days later and rejected, presumably because hand trenching exposed only nemalite fibre. His visit was prompted by a report from the company geologist at the Clinton Mine that fibre up to 3/8 inch long grading 8% was present. The claims were optioned in 1965 to Topazois Mining Co. but no work was filed and they were allowed to lapse.

A Cassiar Asbestos Corp. crew led by Scott Murray returned to the target in 1978 and grid sampled it at a wide spacing, but did not stake it. Two old hand trenches and a helicopter pad were found at the nemalite showing.

GEOMORPHOLOGY

Rounded, subdued hills rising to elevations of 1150 m have a local relief of up to 800 m and are typical of the unglaciated terrain throughout the Dawson Range. Streams occupy V-shaped valleys which have been strongly modified by late Tertiary rejuvenation. Outcrop is very rare except along the banks of the Yukon River and most hillsides are mantled by a thin cover of residual soil and humus. Thick river gravels occur in low relief areas adjacent to the Yukon River below 450 m elevation. Vegetation is characterized by open pine, aspen and spruce on the lower, south-facing slopes with thick moss cover and black spruce on north-facing slopes, where permafrost extends to surface. Some of the higher elevations are untimbered but covered by relatively thick buckbrush.

GEOLOGY AND MINERALOGY

The TJOP property is situated southwest of the late Cretaceous Tintina Fault within a series of overthrust, allochthonous sheets that had been obducted onto the North American platform during late Triassic and plate tectonism. An extension of the northwest-trending Teslin Lineament possibly runs just southwest of Dawson and Clinton Creek, and may be connected with the former Anvil subduction zone suggested by D.J. Tempelman-Kluit in GSC paper P79-14. If this is true, then the presence and distribution of alpine-type ultramafites in this district may be explained as former ocean-floor remnants, probably Carboniferous to Permian in age, that have been subducted and re-injected into their present setting.

The lithology of the district is difficult to interpret because of regional metamorphism in Early or Middle Triassic. The metamorphic rocks have been losely subdivided into the Klondike Schist (ℰPK), Pelly Gneiss (ℰPgdn), and Anvil Metavolcanic Unit (CPv). They overlie the Nasina Series quartzite rocks (OSDqc) which formed the North American platform and they occupy much of the map areas. Although the Pelly Gneiss is fairly easily to distinguish, being composed of granitic-textured gneiss with minor quartzite and schist, the Klondike Schist has several constituents, including pale green quartz-muscovite-chlorite schist, chloritic quartzite, grey muscovite schist and minor gneiss, quartz-graphite schist and quartzite. Diorite and a gabbro derivative are also present in places, and contact relationships suggest that the diorite at the Tjop property is probably part of the Klondike Schist, not the Tertiary diorite (eTdi) which occurs to the southwest.

The Nasina Series rocks are the most extensive and also contain several varities of schist, including dark and light grey to silvery coloured, quartz-mica-chlorite or graphitic varieties, as well as grey-green quartzite and quartz-biotite gneiss. The serpentine that hosts the Clinton Creek orebody is enclosed in Nasina schists, as is the northwest margin of the Tjop area.

The allochthonous Anvil volcanic and metavolcanic rocks (CPv) are mostly dark-weathering greenstone or amphibolite gneiss, although this unit also contains graphitic or chloritic quartz-mica schist, quartzite and limestone. These rocks occur in an east-west belt about 50 km long, including part of the Tjop property, and are closely related to the ultramafic rocks. Another occurrence is found at Dawson, and there is probably much unmapped CPv rock in the district.

Cretaceous and older intrusions are prevalent in the southwestern part of the district, but will not be discussed here. Tertiary rocks are also scattered throughout the southwestern parts of the district, and include clastic, volcanic, diorite and porphyritic rocks.

The ultramafites in this belt occur in several separate clusters, notably around Clinton Creek, between Cassiar Creek and the Tjop property, near Dawson and around Fish Creek. They are fairly small, alpine-type bodies composed of massive, dark green, fine to medium grained magnetic serpentinite derived from both peridotite and dunite. Most of them are highly sheared, suggesting their emplacement prior to or during the pre-Middle Triassic regional metamorphism. In the Clinton Creek and Tjop areas, many of the ultramafites (and sometimes asbestos) have been altered to quartz-carbonate. Cone Hill, at the Fortymile Bridge near Clinton Creek, is a good example of this. Massive soapstone also occurs at the Tjop property.

Asbestos occurrences are common, and the district has produced two mines (Clinton Creek and Cassiar Creek). Most of the ultramafites contain some fibre, but lengths show great variation, ranging from hairline to commercial.

On the Tjop property, fibre to 8 mm was seen in outcrop on the east side of the property and similar fibre lengths were discovered in soils from the western portion of the claims. However, lack of outcrop in areas of suspected mineralization has hampered field estimates of precent fibre based on visual measurement, at this time. Fibre lengths are comparable to those found at other previously explored asbestos properties in the district.

SOIL SAMPLING

The results of soil sampling by Cassiar Asbestos in 1978 and Teslin Joint Venture in 1979 are plotted on Figure DA2 (in pocket). This work has outlined at least three bodies of northeast-trending, medium green, blocky serpentinite and at least three fibre-bearing zones. These zones cover areas ranging in size from approximately 150 m square in the northeast corner of the claims, to 500 m by 1000 m

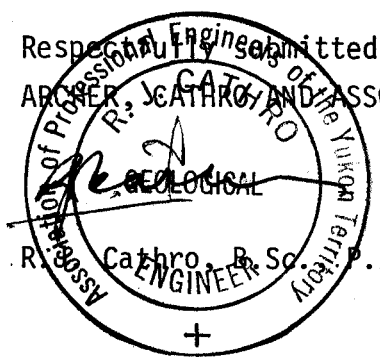
in the northwest. The mapping is largely based on identification of rock chips from the soil pits.

The sampling method was devised by Scott Murray in 1978 for Cassiar and further refined by him in 1979. Soil samples were collected at 50 m and 100 m intervals from the lower B soil horizon, bagged in standard pre-numbered Kraft paper envelopes and submitted to Bondar Clegg Ltd., Whitehorse, for analysis. In the lab, they were dried and screened in a sieve column. Each screen was then examined under a strong light for the presence of loose asbestos fibres. Fibre lengths were measured and reported in millimetres along with a subjective indication of fibre quality in each sample. Locations of samples containing fibre were plotted on field maps to determine areas of anomalous fibre lengths in poorly exposed portions of the property (see Fibure T-79 DA2 in pocket).

CONCLUSIONS AND RECOMMENDATIONS

Although overburden is fairly thin at the Tjop property, it is extensive and has hindered mapping. Closely-spaced soil survey lines are required to provide an accurate geological map, particularly in the northwest corner of the claims where the best fibre potential seems to lie. A magnetometer survey would also be helpful in outlining the ultramafic rocks, since the GSC aeromagnetic maps indicate a strong but non-specific response in this area. A three week program is recommended for this property, including mapping, sampling, magnetometer survey and hand-pitting.

Respectfully submitted,
ARCHER, CATHRO AND ASSOCIATES LTD.



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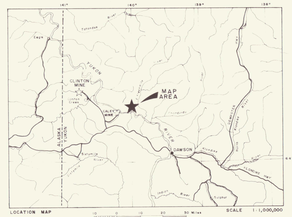

LEGEND

GEOLOGICAL LEGEND

MAP 116 B & C (E 1/2) DESCRIPTION

QUATERNARY

Q — River and stream deposits, soil covered talus

PALEOZOIC (?) or LATER (?)

Pdi — Fine to coarse grained hornblende granodiorite, diorite and gabbro

PALEOZOIC

Pus — Mushy serpentinite, soapstone

Pm — Light pale green to grey quartz-mica schist and quartz biotite gneiss; possibly KLINOKE "SCHIST" or NASINA "SERIES" or both

OTHER FEATURES

- Pit dug through soil to bedrock
- Fibre location: from soil samples and field observations; fibre length in millimetres
- Helicopter landing area

TJOP CLAIMS

		10	9						
2	1	12	11						
4	3	14	13	22	21	30	29	38	37
6	5	16	15	24	23	32	31	40	39
8	7	18	17	26	25	34	33	42	41
		20	19	28	27	36	35	44	43

FIGURE T79-DA2

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AIRMAG & GEOLOGY

TJOP CLAIMS

TESLIN JOINT VENTURE

SCALE 1:5,000

1000 500 0 1000 2000 Feet

250 0 500 Metres

Dec. 1979