

GEOCHEMICAL SOIL SAMPLING SURVEY

On

STAR MINERAL CLAIMS

MACMILLAN PASS AREA

Watson Lake Mining Division
Yukon Territory

Longitude 130° 10'W.

Latitude 63° 10'N.

Map Sheet 105-0-1

By

Clyde L. Smith,
Exploration Manager.

SPARTAN EXPLORATIONS LTD. (N.P.L.)

June 24th - August 1st, 1969



This report has been examined by the Geological Evaluation Unit. Approved as to technical worth by:

[Signature]
RESIDENT GEOLOGIST

Approved as to cost in the amount of: \$ 2000⁰⁰

[Signature]
RESIDENT MINING ENGINEER

Accepted as representation work under Section 53(4) Yukon Quartz Mining Act.

[Signature]
COMMISSIONER OF YUKON

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ILLUSTRATIONS

Figure 1 -- STAR Claim Group Geochemical Silts and Soils Map for Zinc, Lead, Molybdenum and Copper.	Pocket
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LIST OF CLAIMSClaim NumbersGrant NumbersDate Recorded

STAR 1-32

Y17754-Y17785

June 1st, 1967

INTRODUCTION

During the preliminary evaluation of the Itsi Region in 1967, the Star Syndicate, the forerunner of Spartan Explorations Ltd., staked an area of structural favourability on the northeastern border of the Tom Group held by Hudson Bay Mining and Smelting. The group known as the STAR Group consists of 32 claims and was evaluated during the 1968 field season by geologic mapping and geochemical silt sampling.

The STAR 1-32 claims were staked in May, 1967, and were recorded on June 1st, 1967. All major streams on the group were silted at not more than one-half mile intervals. Samples were analysed for lead, zinc, copper, and molybdenum.

LOCATION AND ACCESS

The STAR claims are centered a short distance southwest of Macmillan Pass near Yukon-Northwest Territories boundary about 100 miles northeast of Ross River. The STAR group lies along the northeast margin of the Tom Group, approximately six miles west of the Yukon-Northwest Territories border and one-half mile south of the abandoned Canol Road. Access to the claim group was made by helicopter from the base camp located on Fuller Lake. Fuller Lake is accessible by fixed-wing aircraft from Ross River, the nearest expediting base in the Yukon.

GEOLOGY

The STAR claim group area is underlain by a northerly-trending, gently northerly-plunging recumbent syncline overturned to the west. The syncline is tight and the stratigraphic section folded into this structure from youngest to oldest is as follows:

- Polymitic chert pebble conglomerate top Ferruginous slates of Post-Middle Devonian age.

Geology (Continued)....

- Black argillite, chert pebble conglomerate, black chert, carbonaceous limestone of Ordovician to Middle Devonian age.

A quartz-porphry dyke several tens of feet in thickness cuts the stratigraphic section near the south end of the claim group. Hudson Bay Mining and Smelting Company's lead-zinc-silver ore deposit occurs a short distance away from the STAR claims and is apparently stratigraphically confined within the upper portion of the Ordovician-Lower Devonian section. This stratigraphic level cuts across the southwestern corner of the STAR claims.

SURVEY TECHNIQUESSampling Techniques

Samples were taken at no greater than half-mile intervals along the main drainage creek flowing northerly through the STAR claims, as well as along tributaries entering from the east and west. Approximately 100 grams of stream sediment were taken from each sample site and placed in Kraft bags which were periodically shipped to the Barringer Research Geochemical Laboratory in Ross River. Within a portion of claim group soil samples were taken in places where active stream sediment could not be located. These soil samples were taken from the "B" horizon lying immediately below a thin "A" horizon.

Method of Analysis

All samples were analysed at a complete testing laboratory in Ross River. When the samples were received each was dried while in its Kraft bag, then screened to 80-mesh, weighed out to 0.5 grams and digested in hot aqua regia or hydrochloric acid. Samples were then diluted, clarified for a number of hours and tested for copper, lead, zinc and molybdenum by

Method of Analysis (Continued)....

atomic spectrophotometer. The "AA" unit used was a Perkins-Elmer model, and accuracy of the instrument is believed to be about 1% of the amount of the metal present. Individual cathode lamps were used for each element determination, and a direct read-out is given for the element being tested.

Treatment of Data

Results as were reported from the laboratory were plotted on a map of one-half mile to the inch scale of the drainage of the STAR group. Sequence of plotting is zinc-lead-molybdenum-copper.

GEOCHEMICAL ENVIRONMENT

Topography in the area of the STAR claims is moderately to steeply sloping and run-off enters the main northerly flowing creek from the east and west. Drainage appears to be intense and ground water-level is believed to be high. Vegetation is extremely sparse and consists of dwarf birch, spruce, and poplars. Soil profiles, where sampled, typically consist of a thin layer of organic "A" horizon below which occurs gray glacial clay or poorly developed "B" horizon.

DESCRIPTION OF ANOMALIES

Statistical plots of the geochemical silt and soil values of the STAR claims allowed the following categorization of anomaly intensities:

Zinc - first order anomaly greater than 700ppm, second order anomaly greater than 1000 ppm, third order anomaly greater than 1300 ppm;

Lead - first order anomaly greater than 75 ppm, second order anomaly greater than 115 ppm;

Molybdenum - first order anomaly greater than 40 ppm, second order anomaly greater than 60 ppm;

Description of Anomalies (Continued)....

Copper - first order anomaly greater than 140 ppm, second order anomaly greater than 220 ppm.

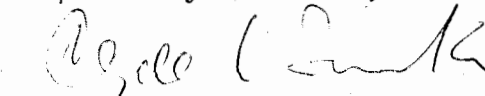
The accompanying geochemical silt and soil maps shows that, for zinc there are only two locations of anomalous values. These are regarded as spurious. For lead, there are a number of first and second order anomalous locals, most of which are concentrated in the south end of the property. Careful prospecting in this area located a broad felsitic dyke carrying minor disseminated galena and sphalerite. The concentration of lead geochemical values near the area of galena exposure in the dyke indicates that this is a reasonable source for the geochemistry. In addition, smaller dykes were noted through the section in the middle and northern portion of the claim group and the scattered lead values in that area could well be attributed to similar mineralization in felsite dykes. The two scattered anomalous molybdenum values were located; these are not believed to be of any significance. Anomalous copper, for second and first order geochemical intensity, occurs scattered over a large portion of the claim group. Careful prospecting of the entire area indicates, however, that no mineralization can reasonably associated with this geochemistry. Samples of bedrock material and in particular, middle Upper Devonian slate in the area of the STAR claims and within the Macmillan Pass region, indicate that it is possible to derive high copper geochemical values from bedrock of this type. It is therefore reasonable to explain these anomalous copper values as being derived from bedrock of high base metal content.

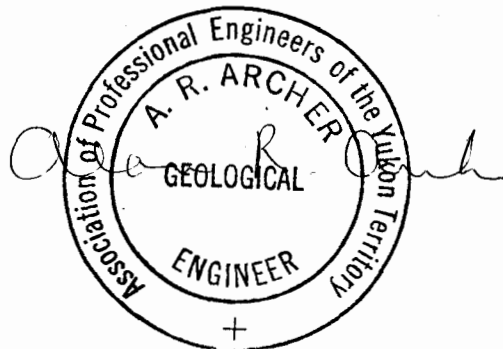
INTERPRETATION

Careful prospecting done following the geochemical survey as well as geologic mapping done on a scale of one-half mile to the inch has satisfactorily explained the scattered anomalous geochemical values on the STAR claims. The only mineralization noted occurs in a felsite dyke on the south side of the property. This is sphalerite and galena disseminated in the dyke.

Preliminary geochemical and geologic investigation of the STAR claims indicates that little or no economic potential exists on the claims. They are being maintained in good standing however, because of close proximity to a known ore body developed immediately to the west by Hudson Bay Mining and Smelting.

Respectfully submitted,


Clyde L. Smith,
Exploration Manager.



APPENDIX ISUMMARY OF COSTS

	<u>Costs - \$</u>	<u>Sub Total</u>
1. <u>Geochemical Surveys</u>		
Wages and Salaries	202.49	
Supplies & Miscellaneous Equipment	48.28	
Assaying	331.42	
Helicopter Support	222.82	
Ross River Base	105.74	
Camp Support	<u>157.07</u>	
		1,067.82
2. <u>Exploration Planning</u>		
Wages and Salaries	250.00	
Consultants Fees	600.00	
Travel & Accomodation	50.00	
Ross River Base	<u>100.00</u>	
		1,000.00
	GRAND TOTAL	<u><u>\$2,067.82</u></u>

APPENDIX II

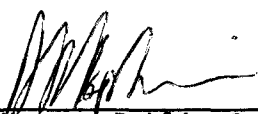
AFFIDAVIT

Supporting Summary of Costs

I, Allan Patrick, Accountant, Spartan Explorations Limited, of Vancouver, B. C., do hereby state that to the best of my knowledge and belief the summary of costs as presented in Appendix I of this report "Geochemical Soil Sampling Survey on Star Mineral Claim Group" is both true and correct.

DATED AT Vancouver, British Columbia, this thirtieth day of May, A.D., 1969.

SWORN BEFORE ME at
Vancouver, British
Columbia, this 2nd
day of June, A.D.,
1969.



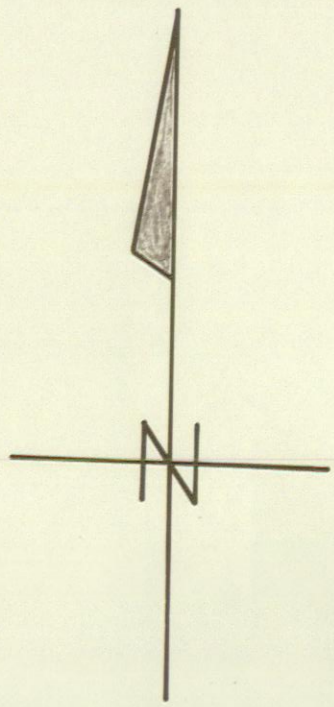
A Notary Public for taking
Affidavits in the Province
of British Columbia.



Allan Patrick

APPENDIX IIIPERSONNEL

<u>Name</u>	<u>Position</u>	<u>Address</u>
Albert McLeod	Geochemical Sampler	Ross River, Y. T.
Benjamin Duna	Geologist	Vancouver, B. C.
C. L. Smith	Supervisor	Vancouver, B. C.



SPARTAN EXPLORATIONS LTD.
 ROSS RIVER YUKON
 ITSI PROJECT
 STAR CLAIM GROUP
 GEOCHEMICAL SILTS & SOILS
 Zn-Pb / Mo-Cu.

SOIL SAMPLERS: B.DUNA, A. MACLEOD.

DRAWN BY: N.H.SIMMONS.

DATE: AUGUST 25, 1968.

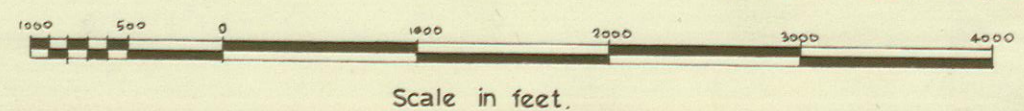
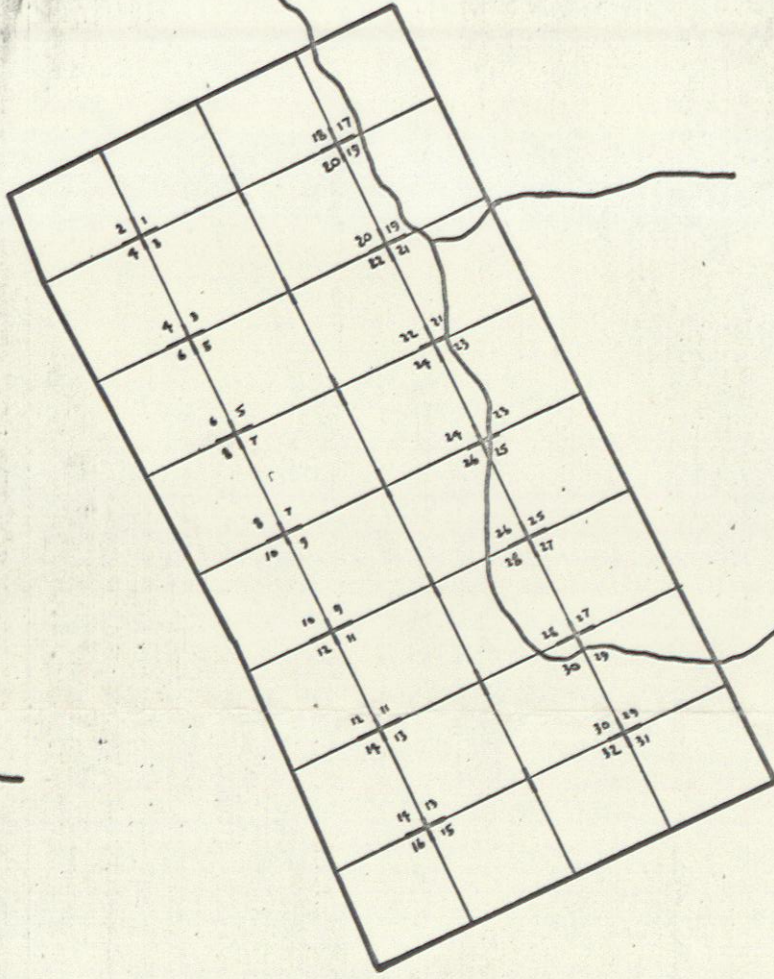


Figure 1



STAR GROUP
KEY MAP