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EZEKIEL EXPLORATIONS LIMITED

MAGNETOMETER SURVEY

on the

S CLAIMS

Atlin Mining Division

NTS 104 N/12E

October 1985

P. Grunenberg, B.Sc.
A.G. Troup, P.Eng.

CLAIMS SURVEYED

<u>Claim Name</u>	<u>Units</u>	<u>Record No.</u>	<u>Anniversary Date</u>
S-1	20	1394	August 4
S-2	18	1395	August 4

Location: 59°34' N, 133°35' W

Owner/Operator: Ezekiel Explorations Ltd.

Consultant: A.G. Troup, P.Eng.,
Archean Engineering Ltd.

Project Geologist: Linda Dandy, B.Sc.,
Mark Management Ltd.

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

13,925

MAGNETOMETER SURVEY REPORT

on the

S CLAIMS**Atlin Mining Division****NTS 104 N/12E****SUMMARY**

The S claims are a road accessible property located approximately 6 km (4 miles) east of the town of Atlin in northwestern British Columbia. A magnetometer survey was carried out over the property for the purpose of confirming and further delineating anomalous areas identified by a previous airborne geophysical survey. Work on a property to the northeast of the S claims has successfully demonstrated that gold mineralization is associated with a magnetic low along the flanks of a magnetic high. The 1985 magnetometer survey was designed to determine if a similar feature could exist on the S claims.

Results of the 1985 magnetometer survey partially confirm the presence of a northeast trending magnetic zone with adjacent magnetic lows. The cause and economic significance of this trend, however, is not fully understood. High magnetic readings in other areas are known to be underlain by ultramafic rocks. The magnetic lows flanking the magnetic high may represent areas of intense alteration, and are therefore excellent exploration targets.

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S CLAIMS

Atlin Mining Division

1. INTRODUCTION

The S claim block is a lode-gold prospect located in the historic Atlin Placer Gold Mining Camp in northwestern British Columbia (Figure 1). The claims were staked in 1981 after Yukon Revenue Mines Ltd. reported a large, low-grade gold discovery in the area.

In 1983, initial fieldwork was carried out over the claims and consisted of preliminary geological mapping and litho-geochemical sampling of all geological units, quartz veins, and mineralized float. The success of this original programme prompted a further exploration effort. In the summer of 1984, additional geochemical assessment of the property was undertaken by Mark Management Ltd. on behalf of Ezekiel Explorations Ltd. This exploration programme consisted of geological examinations and geochemical sampling in an area untested by the previous survey. Results of this programme were inconclusive, and further work was planned. In September 1984, Dighem Surveys and Processing Incorporated of Toronto, Ontario was contracted to fly an electromagnetic and magnetic survey over a large portion of the Atlin gold camp. This survey outlined a number of anomalies on the S claim block which warranted further investigation, as planned for the spring of 1985.

This report is based on 13 man-days of field work done between June 6 and June 17, 1985. Geologists in the field were Linda Dandy and Perry Grunenberg assisted by Prospector, Colin Little.

1.1 LOCATION AND ACCESS

The S claims cover a lode gold prospect located within the Atlin placer camp. (See Figure 1). This camp consists of about 380 square kilometres of mountainous country, in the Atlin Mining Division in northwestern British Columbia. The placer area is east of Atlin which is centrally located on the east side of Atlin Lake. The area trends northeastward and is approximately 26 km long and 20 km wide.

Most of the area is drained to the west by Fourth of July Creek in the north, Pine and Spruce Creeks in the central portion, and McKee and Eldorado Creeks in the south. The eastern portion of the district is drained by the north flowing Snake, Otter, and Wright Creeks and the east and south flowing Feather and Slate Creeks.

Atlin is, and has been since the early days of the Klondike Gold Rush of 1897 and 1898, the principal population and supply centre of northwestern British Columbia. It is approximately 150 kilometres south of Whitehorse, the capital and principal Yukon city. Atlin, since 1949, has had a road connecting it with Jakes Corner on the Alaska Highway in the Yukon Territory. This road is open all year except for short periods when some of the hills are iced over. From Jakes Corner another road goes to Carcross, Y.T. The Alaska Highway extends from Dawson Creek, B.C., to Whitehorse, Y.T., and beyond to Alaska and is open all year. Both Carcross and Whitehorse are on the White Pass and Yukon Railway Line, which extends from Skagway, Alaska to Whitehorse; however, at present the railroad is not in service. Skagway is the terminus for several coastal lines; and, until the closure of the rail line in late 1982, most heavy freight to the area went by boat to Skagway, thence by train to Carcross and thence by truck to Atlin. Now that the White Pass and Yukon Railway is closed, all heavy cargo must be transported by truck from Skagway or from the east along the Alaska Highway. For passengers traveling to the area, it is best to fly to Whitehorse and go from there to Atlin by plane, car, or bus. Whitehorse is served by scheduled flights from both Vancouver, B.C. and Edmonton, Alta. Planes for charter trips are available at Atlin, Whitehorse, and Lower Post on the Dease River. Helicopters are available in Atlin on a year round basis.

The S claims are located in the central portion of the placer district approximately 6 km east of Atlin. (See Figure 2). The property is located on N.T.S. Map Sheet 104N/12E. Coordinates for the centre of the claim group are:

59° 35' North Latitude
133° 37' West Longitude

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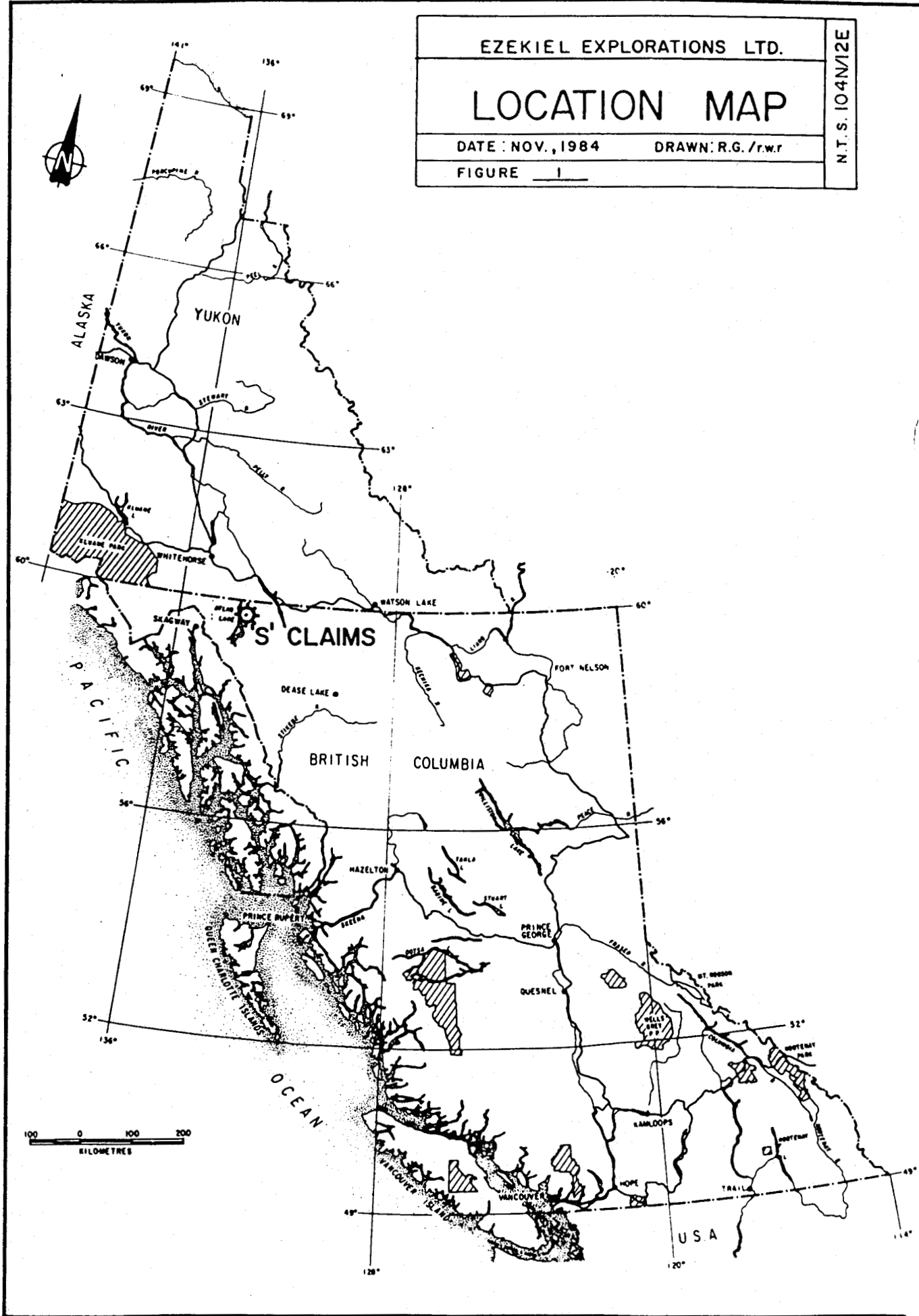
LOCATION MAP

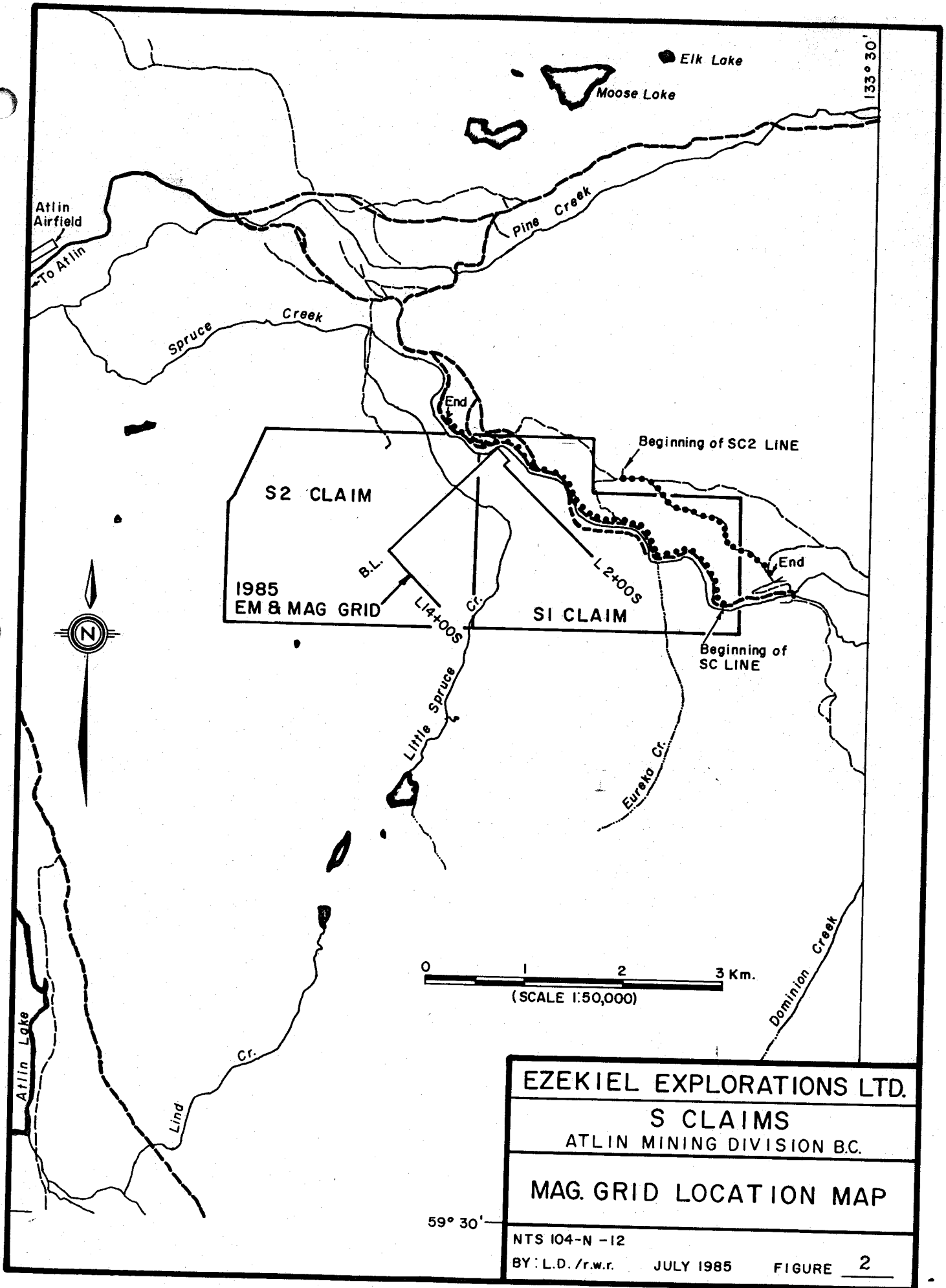
DATE: NOV., 1984

DRAWN: R.G./r.w.r

FIGURE 1

N.T.S. 104N/12E





EZEKIEL EXPLORATIONS LTD.
S CLAIMS
ATLIN MINING DIVISION BC.
MAG. GRID LOCATION MAP
NTS 104-N-12
BY: L.D./r.w.r. JULY 1985 FIGURE <u>2</u>

Within the area roads extend to all the placer creeks. The roads are in good condition except in the eastern part of the area where they are considered to be low-maintenance summer roads. The claims are accessible from Atlin by a road along the south side of Pine Creek. This road connects with the Spruce Creek road approximately 5.5 km east-northeast of the Town of Atlin. The Spruce Creek road diagonally crosses the S-1 claim but should be considered a dry weather only track.

1.2 PHYSIOGRAPHY, VEGETATION AND CLIMATE

The Atlin area is located just east of the Coast Mountains on the Teslin Plateau. The town of Atlin lies on the east shore of Atlin Lake, the largest natural lake in British Columbia, at an elevation of 2,200 feet. The topography is moderately rugged with slopes of up to 30° rising from the Pine Creek valley floor at an elevation of 822 m (2,700 feet) to mountains well over 1440 m (4723 feet). Glaciers occupied the Spruce Creek valley in Pleistocene time and deposited up to 90 m (300 feet) of glaciofluvial till during their retreat. Meltwater channels are prominent on Spruce Creek just above its confluence with Dominion Creek and near its confluence with Little Spruce Creek.

The tree line occurs at 1280 m (4,200 feet) on the north facing slopes and 1219 m (4,000 feet) on south facing slopes. Below 1219 m, the valleys are forested with lodgepole pine, black spruce, aspen and dwarf birch. Mountain alder and willow grow near streams with stunted buckbrush covering the hills above tree lines.

Atlin enjoys a pleasant summer climate with temperatures averaging 20°C and little precipitation. Winter temperatures average -15°C in January with moderate snowfall. Total annual precipitation has been measured at 279.4 millimetres of moisture. "Winter" conditions can be expected from October to April.

1.3 CLAIM INFORMATION

The property is located in the Atlin Mining Division and consists of two claims totalling 38 units. Claim information is listed in Table 1.

TABLE 1

CLAIM STATUS

Claim Name	Units	Record No.	Anniversary Date
S-1	20	1394	August 4
S-2	18	1395	August 4

1.4 HISTORY

Gold was first discovered in the Atlin area in 1897 by Fritz Miller while en route to Dawson. The first workings were on Pine Creek and by the end of 1898, more than 3,000 people were camped in the Atlin area. Only 8 creeks - Spruce, Pine, Birch, Boulder, Ruby, Otter, Wright and McKee - have been important producers in the Atlin camp. Gold production from these creeks in the period 1898 to 1946 is listed in Table 2.

Gold-bearing quartz veins were first discovered in the Atlin area in 1899 and by 1905 most of the known showings had been discovered. Although the original showings have been repeatedly worked and re-examined there is no record of regional exploration for lode mineralization since 1905. In 1981, Yukon Revenue Mines Ltd. acquired and re-examined the old Lakeview property. Work done by Yukon Revenue showed low-grade gold values over an extensive but delicate stockwork of carbonatized and silicified andesite adjacent to a serpentinite intrusive.

The discovery by Yukon Revenue Mines Ltd. and the similarity of geology in the vicinity of major placer gold producing streams prompted Ezekiel Explorations Ltd. to stake the properties.

TABLE 2 (from Holland, 1950)

Gold Recovery from Productive Creeks, Atlin Area, 1898-1946.

Stream Name	Ounces of Gold Produced
Spruce Creek	262,603
Pine Creek	138,144
Boulder Creek	67,811
Ruby Creek	55,272
McKee Creek	46,953
Otter Creek	20,113
Wright Creek	14,729
Birch Creek	12,898
All Others (21 creeks)	15,624

2. GEOLOGY

2.1 REGIONAL GEOLOGY

Geological mapping of this area was undertaken in 1951-55 by J.D. Aitken of the Geological Survey of Canada (GSC) and compiled as Map 1082A (Figure 4). In 1966-68, J.W.H. Monger, also of the GSC, selectively mapped the Atlin area and published his findings in GSC Paper 74-47.

The Atlin region is located in a eugeosynclinal area composed of three distinct northwest striking tectonic belts; the St. Elias and Insular Belt, Coast and Cascades Belt and Intermontane Belt. The rocks of the area belong to the Atlin Terrane, which represents an independent tectonic entity of the oceanic sequence of the Intermontane Belt in the Canadian Cordillera. The Atlin Terrane consists of upper Paleozoic age radiolarian cherts, pelites, carbonates, volcanics and ultramafics. These rocks are intruded by Mesozoic granite, alaskite and quartz monzonite. The youngest rocks of the Atlin Terrane are composed of Tertiary and Quaternary volcanics. Till deposited by receding Pleistocene glaciers extensively covers the valleys.

The Atlin Terrane is bounded on the northeast by a northwest striking vertical fault and on the southwest by a northwest striking reverse fault. Structurally, the terrane is characterized by compressional deformation which is similar in style and trend to the southwest bounding faults (Monger, 1975). Minor fold axes generally strike northwest or trend southwest.

2.2 PROPERTY GEOLOGY

Outcrop exposure accounts for less than 2% of the surface area on the properties. Felsenmeer is present in areas of no outcrop and is assumed to be close to outcrop. Till covers the valleys below 1220 m (4,500 feet) elevation.

Limited rock exposures make geologic interpretation difficult. However, it appears that the properties are underlain by Cache Creek Group volcanics intruded by post-Pennsylvanian and Permian ultramafics.

The Cache Creek Group rocks are of Pennsylvanian and Permian age and consist of limestone, argillite, chert and andesite; however, only andesitic volcanics were seen in outcrop. The andesite is typically drab grey-green in colour, siliceous, sometimes weakly carbonatized and contains 1% primary pyrite.

Intruding into this volcanic package are post-Cache Creek ultramafics, which are considered part of the Atlin Intrusions, and consist of peridotite and serpentinite. These rocks are usually dark green in colour and locally talcose. Alteration of the ultramafic is extensive. Most of the rocks have been subject to varying intensities of serpentinization or carbonatization. The carbonatized ultramafic is characterized by rusty-orange brown weathering and its recessive nature.

2.3 ECONOMIC GEOLOGY

The Atlin area has enjoyed a history of productive placer mining and to a lesser extent, hard rock mining. All gold recovered from the Atlin area is very coarse and many large nuggets have been found in the camp. The fine gold as well as the nuggets is often found intergrown with quartz, which in many cases, occurs as euhedral crystals. All important placer gold production has been from rich Tertiary gravels buried beneath a thick blanket of barren glacial till. On Spruce Creek the south side of the pay streak is observed to extend onto the northern portion of the S-2 claim.

In 1983, Standard Gold Mines Ltd. announced a new lode gold discovery just two kilometres southeast of the southeast corner of the S-1 claim. Work by Standard Gold indicated that the gold occurred in a quartz stockwork hosted by carbonatized ultramafic. Because of the

similarities in geologic setting, similar mineralization may exist on properties held by Ezekiel Explorations Ltd. and it is because of this potential that the S claims are presently being held.

3. GEOPHYSICS

3.1 G-816 MAGNETOMETER SURVEY

Two Geometrics Model G-816 Proton Precision Magnetometers were utilized on the programme. The G-816 is designed for precise mapping of very small or large amplitude anomalies and is ideal for detail follow-up of aeromagnetic reconnaissance surveys. Total field measurements can be read with a resolution of about 1 gamma throughout the instruments measuring range. One G-816 was used for field measurements while the second unit was combined with an automatic analog recording device (Model G-826, Base Station System) to monitor the earth's total magnetic field including time variations and magnetic storms. All values recorded on grid lines were corrected for diurnal and day to day variations. The readings were recorded at 25 metre intervals along the grid lines.

3.2 FIELD PROCEDURES

The technique employed for the airborne follow-up consisted of constructing nine chained and flagged lines across the suspected strike of the magnetic axis. Seven of these lines were part of a grid with an average line spacing of approximately 200 metres, a base line having been run perpendicular to these lines for spacing control. (See Figure 2.) The remaining two lines were run parallel to Spruce Creek, one along the creek bed itself, and one along an access road to the old Nolan Mine site. Total ground follow-up covered 16.5 line kilometres, and approximately 660 individual magnetometer responses were recorded within the survey block. The corrected data is presented as profiles on Figures 3 and 4.

3.3 DISCUSSION OF RESULTS

The seven grid lines south of Spruce Creek display "noisy" profiles with no easily recognized correlations between lines, therefore the data was not contoured. Lack of outcrop in this area prohibits any direct correlation between magnetic responses and rock

types, although it has been considered that underlying rock types are made up of Cache Creek group andesites intruded by younger ultramafics, either of which could be responsible for magnetic responses. Possible thick overburden in the area may hinder the strength of magnetic responses which could further complicate the understanding of results.

The 1984 airborne geophysical survey shows that a prominent magnetic high anomaly trends northeast through the property. This feature seems to be reflected in the two lines run parallel to Spruce Creek, with the centre of the high at 21+50 meters west on the SC line, and at 1+50 meters east on the SC2 line. Both of these magnetic anomalies are flanked by magnetic low zones, the importance of which is not fully understood; however, it is possible that these lows are related to areas of intense bedrock alteration. Claims located to the northeast of the S claims were drilled during the field season and gold mineralization was reported to be associated with areas of low magnetic response adjacent to magnetic highs, giving some weight of importance to the forementioned anomalies. Further work will be needed to completely understand these results.

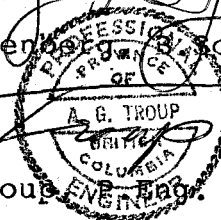
4. CONCLUSIONS

Results of the survey have confirmed the presence of a northeast trending magnetic body on the S claims. This is believed to be an intrusive body of ultramafic rock. Work by Standard Gold Mines Ltd., Tri-Pacific Resources, and Canova Resources has shown that shears and fractures near the contacts of ultramafic bodies are important controls for mineralization as they provide pathways for percolating hydrothermal fluids. Further work on this property should entail detailed magnetometer surveying along with geological mapping to clarify the presence and nature of the magnetic body. This work should be followed by geochemical sampling along the margins of the body to outline areas of possible lode gold mineralization.

Respectfully submitted,


P. Grunert


A.G. Troup



REFERENCES

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- Troup, A.G. and Wong, C., 1982, Geophysical Report on the SNAP, CRACKLE, S and O Mineral Claims: Engineers Report.
- Troup, A.G. and Wong, C., 1983, Geochemical, Geological and Geophysical Report on the Shuksan Property: Engineer's Report dated October 1983.

**COSTS STATEMENT
S CLAIMS
Atlin Mining Division
27 May - 17 June 1985**

SALARIES AND WAGES

3 Pers, 27May-17Jun, 15 days @ \$88 \$ 1,320.00

BENEFITS @ 20% 264.00

FOOD AND ACCOMMODATION

3 pers, 27May-17Jun, 15 mandays @ \$29.59 443.84

SUPPLIES 86.17

FIELD TELEPHONE SERVICE 26.00

SHIPPING AND POSTAGE 24.90

RENTALS

Mark 4wd Bronco, 4 days @ \$43 \$ 172.00

Kangeld G846B Mag, 4 days @ \$27 108.00

G816 Mag, 3 days @ \$27 81.00

G816 Mag, 1 day 27.00

Ezekiel Field Equipment, 15 mandays @ \$6 90.00 478.00

FUEL 69.50

CONSULTANT FEES

Archean Engineering 594.00

REPORT PREPARATION 1,673.22

TOTAL SURVEY COST \$ 5,018.63
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STATEMENT OF QUALIFICATIONS

A. TROUP, P.ENG.

ACADEMIC

1967	B.Sc. Geology	McMaster University, Ontario
1969	M.Sc. Geochemistry	McMaster University, Ontario

PRACTICAL

1981 -	3605 Creery Ave. West Vancouver, B.C.	Consulting Geologist with Archean Engineering Ltd.
1977 - 1980	Geological Survey of Malaysia	Project Manager on a CIDA supported mineral explor- ation survey over peninsular Malaysia.
1969 - 1977	Rio Tinto Canadian Exploration Ltd. Vancouver, B.C.	Geologist involved in all aspects of mineral explor- ation in B.C., the Yukon and N.W.T.
1968	McMaster University Dept. of Geology Hamilton, Ontario	M.Sc. thesis work. Reconnaissance mapping and geochemical study, Lake Shubenacadia area, Nova Scotia.
1967 (summer)	Canex Aerial Exploration Ltd. Toronto, Ontario	Geologist in charge of detailed mapping and reconnaissance geochemical programme in Gaspé, Quebec.
1966	McMaster University Dept. of Geology	Detailed and reconnaissance mapping in Northern Ontario.
1965 (summer)	International Nickel Co. of Canada Thompson, Manitoba	Detailed mapping in the Thompson area, Manitoba.
1964 (summer)	Geological Survey of Canada Ottawa, Ontario	Regional geochemical survey in the Keno Hill area, Yukon

STATEMENT OF QUALIFICATIONSPERRY GRUNENBERG, B.SC.ACADEMIC

1982	B.Sc. Geology	University of British Columbia
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PROFESSIONAL

1985 -	Mark Management Ltd.	Project Geologist working on Hughes-Lang Group properties near Atlin, B.C. and Dawson City, Y.T.
1984	Mark Management Ltd.	Project Geologist working on Hughes-Lang Group properties near Dawson City, Y.T.
1983	Strato Geological Engineering Ltd.	Project Geologist contracted to work on gold properties in Nevada, Washington, and Southern B.C.
1982	P and L Exploration	Exploration geologist involved in evaluating potential placer gold prospects near Quesnel, and Princeton, B.C.

SUMMER EMPLOYMENT

1981	Mark Management Ltd.	Assistant Party Chief
1980	Kennco Explorations	Senior Assistant Geologist
1979	Riocanex	Junior Assistant Geologist
1978	Riocanex	Junior Assistant Geologist



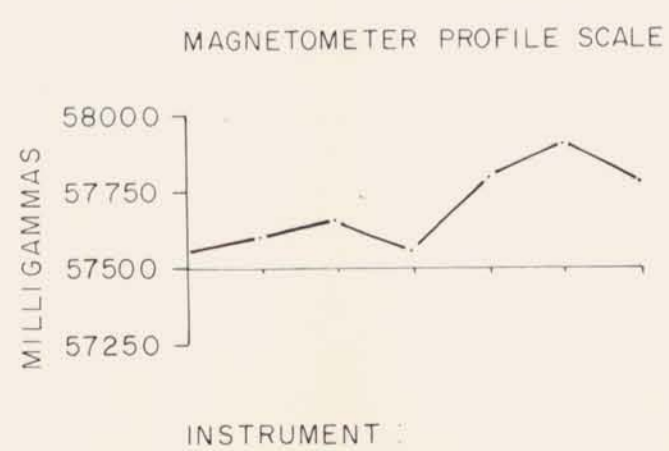
S2 CLAIM

S1 CLAIM

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

13,925

LEGEND:

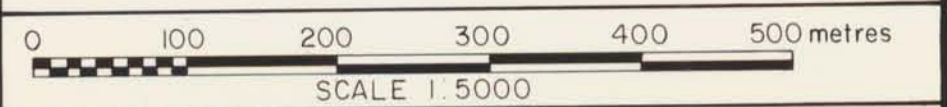


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S CLAIMS

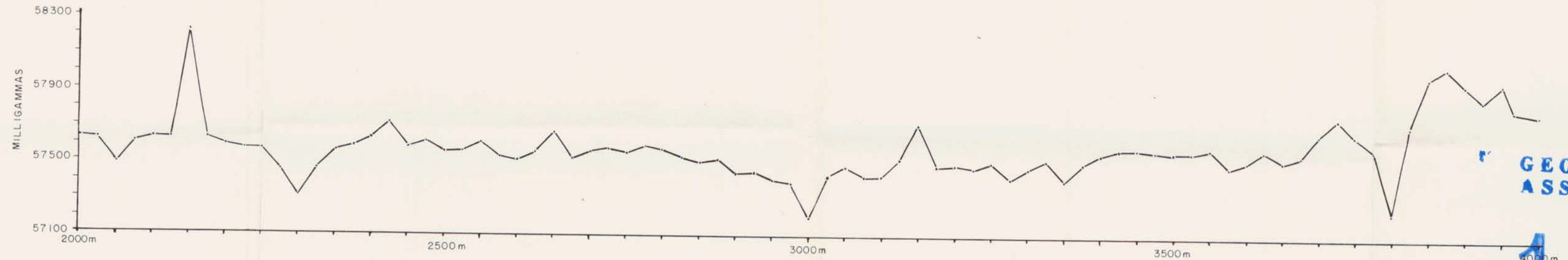
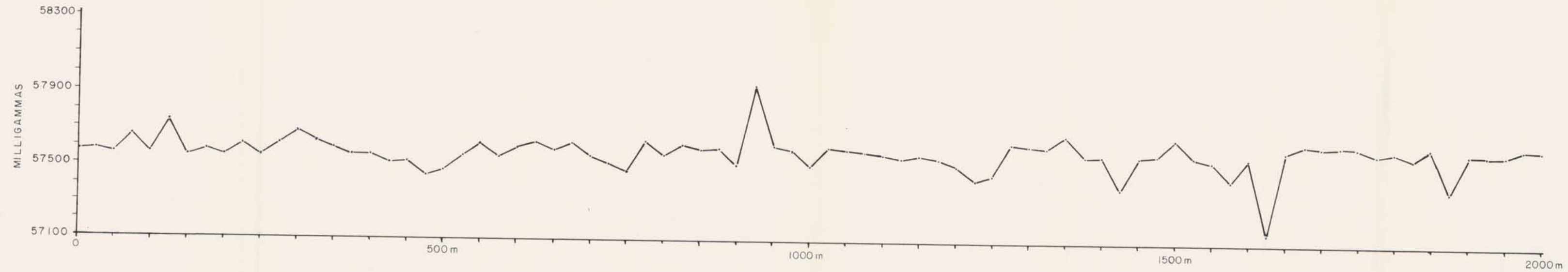
ATLIN MINING DIVISION - B.C.

MAGNETOMETER SURVEY
(PROFILES)

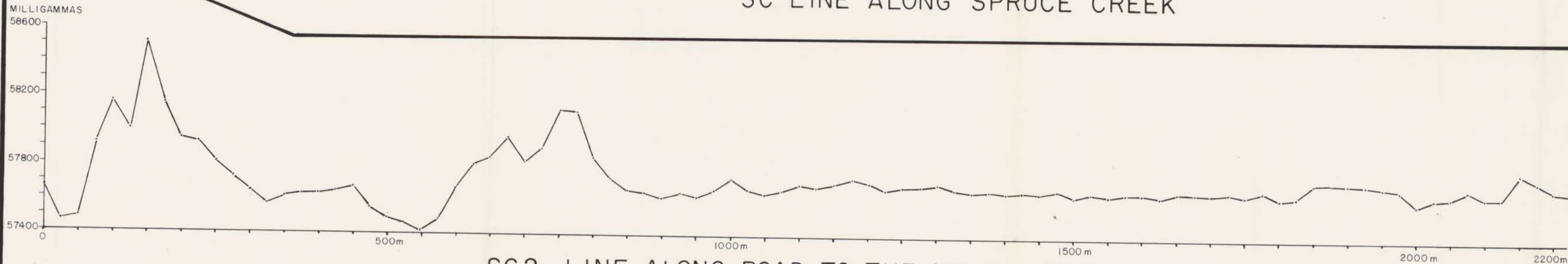


NTS 104-N-11
BY: LD/rwr

DATE: JUNE 1985
FIGURE 3



SC LINE ALONG SPRUCE CREEK



SC2 LINE ALONG ROAD TO THE NOLAN MINE

GEOLOGICAL BRANCH
ASSESSMENT REPORT

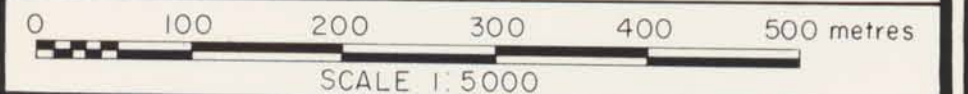
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EZEKIEL EXPLORATIONS LTD.

S CLAIMS

ATLIN MINING DIVISION - B.C.

MAGNETOMETER SURVEY
(PROFILES)



NTS 104-N-12
BY

DATE: JUNE 1985
FIGURE 4