#018899

GEOCHEMICAL SOIL SAMPLING SURVEYS

ASH MINERAL CLAIM GROUP

FYRE LAKE AREA

WATSON LAKE MINING DIVISION

YUKON TERRITORY

Long. 130° 35' West
Lat. 61° 15' North

BY
JOHN S. BROCK
and
JOSEPH N. BOATENG

ATLAS EXPLORATIONS LIMITED

May 20 - June 22, 1967

GEOCHEMICAL SOIL SAMPLING SURVEY
DUB and ZOT MINERAL CLAIM GROUPS

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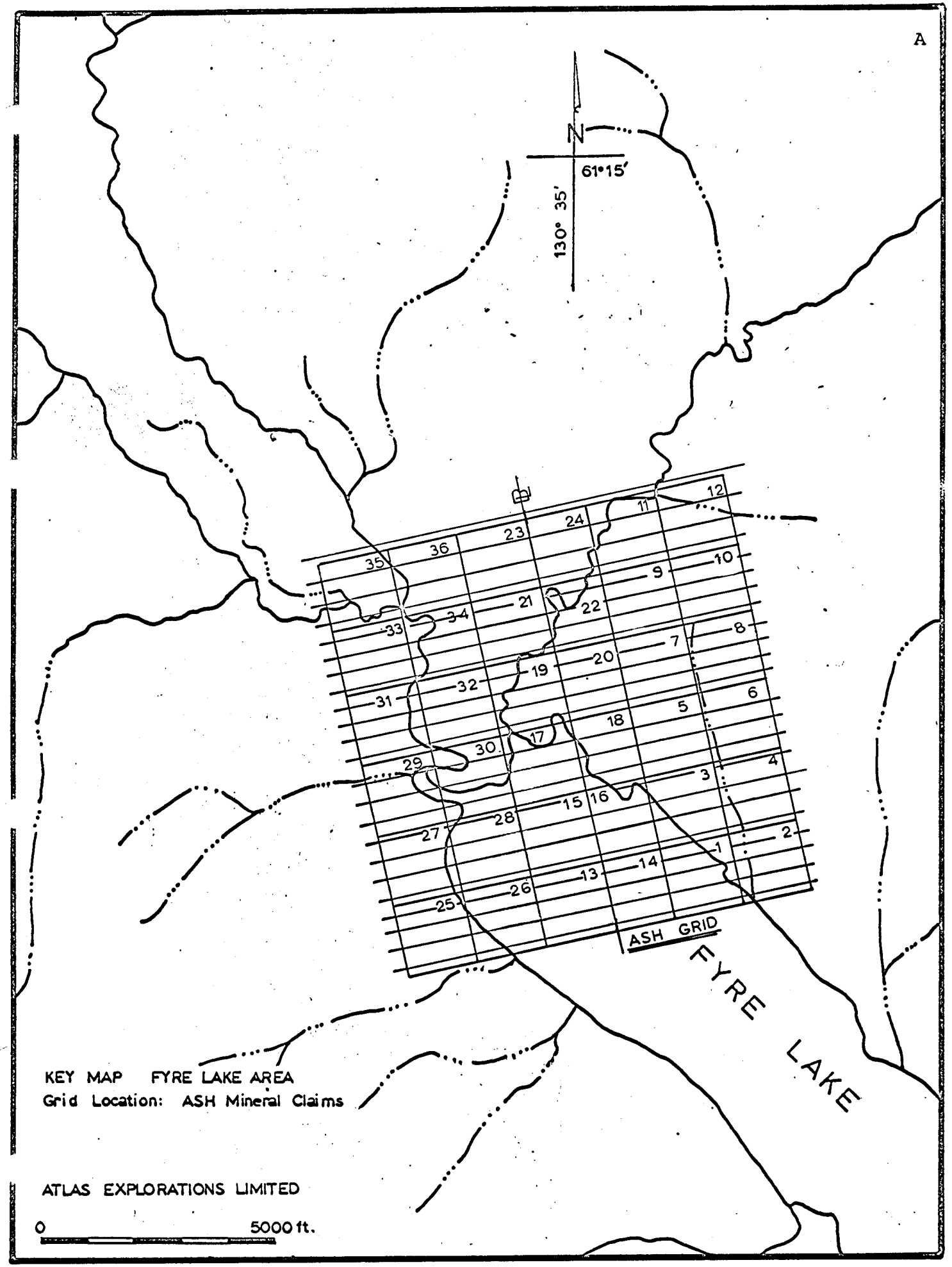

KEY MAP FYRE LAKE AREA
Grid Location: ASH Mineral Claims

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0 5000 ft.

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INTRODUCTION

After the Dub Mineral Claims were acquired by Atlas Explorations in the Fyre Lake area, the region was flown with airborne electromagnetic and magnetic surveys. As a result of the geophysical surveys outlining anomalies in proximity to the Dub Group, an area of known sulphide mineralization, the Ash Group of 36 mineral claims was staked and recorded April 22, 1966.

The claims were staked by Atlas Explorations as part of an intensive follow-up program after completion of the airborne surveys. Ground was obtained in preparation of ground geochemical, geophysical and geologic surveys that were to be employed to delineate airborne anomalies. Commencing May 20, 1966, a crew consisting of geologic, geophysical, geochemical, linecutting and camp support personnel were placed on the property to investigate the anomalous electromagnetic and magnetic airborne responses. It was hoped that possible diamond drill targets could be outlined and tested in conjunction with a proposed drill program on the Dub Mineral claims.

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LOCATION AND ACCESS

The Ash Mineral Claims are located at latitude 61°15' North and longitude 130°35' West at the northwest end of Fyre Lake on the Finlayson Lake Map Sheet. Fyre Lake is situated at the mid-point of the North River. The Ash Group lies between elevations of 3500 and 4000 feet.

The lower elevations of the claim group are over ground that consists mainly of water covered muskeg due to the meandering entrance of the North River into Fyre Lake. Higher elevations are mainly covered with dwarf birch (buckbrush) and some sparse spruce stands.

Access to the properties was made with the aid of aircraft only. Fyre Lake is suitable for all aircraft equippped with floats and skis. A base camp was established on the eastern shores of Fyre Lake for examination of the Ash Group. During breakup conditions, the camp was serviced by helicopter from Ross River. Work on the property was administered from Field Offices at Ross River, 82 miles northwest of Fyre Lake: constant communication was kept with the camp by means of single sideband radio. All expediting of supplies was done from Ross River.

PREVIOUS WORK

During 1960 and 1961, Cassiar Asbestos Corporation carried out geologic, geophysical and prospecting work that eventually led to some drilling of a copper property in the area of what is now the Dub Mineral Claim Group held by Atlas Explorations. Work was abandoned after what appeared to be copper mineralization of limited extent and grade in their area of interest. Mineralized float was discovered in the area of the Ash Claims. However, no known development of such was carried out.

GEOLOGY

Only on the eastern third of the claim group area is there sufficient outcrop to permit geological mapping. Fyre Lake and a mantle of glacial material obscure the bedrock everywhere else.

The rocks occurring on the slope along the north-east shore of the lake are all essentially medium grained mica schists with varying amounts of quartz and sometimes a little hornblende. Euhedral red garnets were observed in it at one locality (44N, 28E) and many thin veins and interbeds of quartz are also present.

These schists are classed on the G.S.C. map of the area in unit A^{i} for which no age is given. They have, however, been observed unconformably overlying Unit C which forms the precambrian basement complex in the area and correllation with rocks described on adjoning sheets suggests a mississipian age.[ii]

The rocks are generally well bedded with a uniform strike of 160 to 180 degrees and a gentle easterly dip of between 5 and 10 degrees. Some contortion occurs in a zone of abundant quartz banding and veining at about 20N, 24E but this does not appear to be extensive.

Regional mapping and air photographs interpretation suggests the existence of a northwest striking fault zone in the valley of Fyre Lake, but, as there is no outcrop in the area, this could not be confirmed on the ground. A straight, deep, north-south striking valley located about 3,000 feet east of the base line and at the bottom of the steepest part of the mountain slope is likely the expression of a fault zone although no evidence of faulting was observed in the rocks adjacent to it.

i: Wheeler, Green and Roddick, G.S.C. Map 8-1960 Finlayson Lake

ii: Smith, C.L. Personal Communication

In spite of moderate geophysical and geochemical anomalies in the central and extreme eastern parts of the claim group, no mineralization of potential economic value was observed during the mapping. Outcrop though is very scarce, if present at all, in the anomalous areas.

TOPOGRAPHY AND GROUND CONDITIONS

The Ash Mineral Claims lie over the lower regions of an intermountain valley junction which approaches Fyre Lake from the northeast and northwest. Most of the claim group is obscrued by Fyre Lake itself and a mantle of glacial overburden. At the eastern edge of the group topographic slopes are generally to the west and steeper to a maximum of about 15 degrees. Elevations range from 3600 feet (the level of Fyre Lake) to about 3900 feet above sea level. Immediately to the east, elevations rise to 5000 feet. Glaciation appears to have come from two directions, two broad and well defined valleys reach a confluence at the Fyre Lake trench in the vicinity of the Ash Group. The general direction of glaciation is northwest to southeast. In the valley floor, accumulation of glacial debris is probably to excess (estimated 100 foot thickness), some morainol features typical of lateral type deposition are noticeable up slope to the east of the grid.

Soils are probably an accumulation of glacial and colluvial deposition; the colluvium is from steeper slopes directly to the east and contains material derived from up-slope outcrops common to the area (see Geology).

Little of the soil is probably remnant. However, some development of soils is apparent where accumulation factors are less prevalent. Over the lower portions of the Claim group, a thick layer of muskeg provides a well defined "A" or organic zone. Where soil development is obvious near areas of outcrop, a shallow bedrock, the B horizon is partially developed and the C horizon of parental material. Irregularities topography, drainage, vegetational cover and puma frost prevented sampling of consistent soil horizons.

Vegetation consists mainly of dim patches of dwarf birch and some second growth spruces. Much of the ground, in low areas, is covered with muskeg.

The North River cuts the claim group and enters Fyre Lake at the south end of the grid. Down slope drainage to Fyre Lake and the North River is to the southwest and not well defined due to seasonal run-off conditions. The meandering nature of the main drainage and low ground swamp conditions provide a large collective basin area for an accumulation of water coarses from many directions other than those relative to the survey grid.

SURVEY TECHNIQUES

Linecutting

The soil sampling survey was conducted over the same grids as used for the geophysical surveys, no extra linecutting was required other than that done for the magnetic and electromagnetic work[i].

Soil Sampling

The soil sampling survey was carried out in conjunction with the electromagnetic and magnetic survey. One soil sampler was employed for the entire survey.

The samples were obtained by use of a prospector's grub hoe which was found adequate as a tool for cutting through heavy layers of organic material overlying the soil. Samples were taken at 100 foot stations over the same grid area as geophysical data was obtained from.

Due to the inconsistency of specific soil horizons as well as variable depths to favorable horizons, samples were taken from an average depth of approximately one and one-half feet. Soils of the upper B horizon were usually encountered except in areas of much glacial till and over-burden. Soils of large organic content were not sampled. In areas of immature soils, the C horizon was sampled. Approximately

i: See Report "Magnetic & Electromagnetic Geophysical Surveys, ASH Mineral Claim Groups."

100 grams of soil from each sample site were placed in Kraft bags which were then periodically shipped to the soil testing laboratory at Ross River.

Method of Analysis

All samples were analyzed at a complete testing laboratory at 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. Samples were then diluted, clarified for 20 hours and then tested for copper, lead and zinc content on an atomic absorption spectrophotometer. The 'AA' unit used was a Perkins Elmer Model 290 and accuracy of the instrument ideally is 1% of the amount of metal present. Individual cathode lamps were used for each element determination, a direct readout is given of the element being tested and two determinations per minute can be made with ease.

Treatment of Data

All results of geochemical tests were returned to the field as soon as possible. Results in parts per million (ppm) were plotted on field data sheets kept by the field soil sampler. The field data sheets were kept as a record of each sample taken, noting particulars concerning drainage, topography, physiography, soil type and depth of sample.

This information was complied for use in further detailed geochemical studies.

Separate maps were prepared using a scale of 1"400', as was used for geophysical data, showing values obtained for copper, lead and zinc, profiles of values and contoured values. Contour intervals varied according to results obtained in parts per million. Maps for each element were compiled separately in order to aid in comparative study of geophysical, geologic and geochemical results. A development map for each area has also been prepared showing general compilation of geochemical-geophysical data.

GEOCHEMICAL RESULTS

1202 Geochemical soil samples were taken on the Ash Mineral claims grid in the Fyre Lake area. These were analyzed for copper, lead and zinc values in parts per million. Contour and profile maps were made and statistical analysis using simple frequency against values diagrams were used to determine the mode, background and anomalous values.

Zinc

The frequency against values diagram indicates a mode value of 50 p.p.m. and background of 80 p.p.m. Values greater than 150 p.p.m. are considered anomalous and the

maximum value on the grid area is 276 p.p.m. The number of samples considered anomalous were 43 (3.5% of total number of samples).

Three distinct anomalies are evident on the contour map. The biggest anomaly extends from 12E 76N to 12W 74N and has an East-West strike. The strike length is 2400' with an average width of 200'. A small anomaly, possibly an extension of the anomaly described above, strikes northerly with an average width of 150' and attains a peak value of 258 p.p.m. at 17E 88N. This anomaly is open at the northerly end.

The second geochemical anomaly, striking East-West starts from 20W 80N for a distance of 600' westerly and has an average width of 200' and is open at its westerly end.

The third anomaly, with a peak value of 276 p.p.m. at 38E 4N, strikes North-South and has a strike length of 500' and average width of 150'.

Isolated anomalous values occur around the following points, 931E 20N, 43W 28N, 38W 28N, 34W 28N, 315E 32N, 28E 32N, 24W 48N, 21W 64N, 18W 64N and 35E 64N.

Copper

A mode value of 20 p.p.m. and background value of 40 p.p.m. were indicated from the frequency against values diagram. Values greater than 70 p.p.m. are considered anomalous

and 60 samples (5% of total number of samples) were between 70 p.p.m. and 290 p.p.m., the latter figure being the maximum value on the whole grid area.

The biggest anomaly, strikes North-South and has a strike length of 1100' and an average width of 150 feet. The maximum value within this anomaly is 140 p.p.m. occurring at 44E 8N.

The second anomaly, 800 ' long and 175' wide, strikes East-West and has a peak value of 288 p.p.m. at 42E 8N.

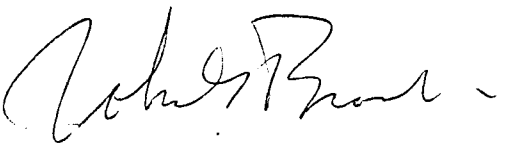
Small anomalies, isolated but perhaps related occur at 40E 16N, 36E 20N, 30E 20N, 28E 4N and lie along a peripheyn with their values sampling from 124 p.p.m. to 190 p.p.m. Two isolated anomalies occur at 20N 43W, (106 p.p.m.) and 38W 32N (208 p.p.m.).

CONCLUSIONS and RECOMMENDATIONS

In relation to geophysical results obtained, the soil sampling survey anomalies as indicated are not considered coincident. Due to the nature of topgraphy, glaciation and drainage, it is suspected that accumulation of metallic ions from other sources of mineralization off the grid are the probable cause of geochemical anomalies. It is recommended that the Ash claims be held in good standing dependant upon

representation work carried out during the 1966 season in the event of future developments in the Fyre Lake area.

Respectfully submitted



JOHN S. BROCK
Assistant Exploration Manager

APPENDIX 1

BIBLIOGRAPHY: MAGNETIC and ELECTROMAGNETIC GEOPHYSICAL SURVEYS

ASH MINERAL CLAIM GROUP

J. O. WHEELER	Sheet 105G, Finlayson Lake Area G.S.C. Map 8- 1960
GABRIELSE and WHEELER	"Tectonic Framework of Southern Yukon and Northwest British Columbia (1961)."
D. CAMPBELL	Consultant's Report, Fyre Lake Area (1966)- A private report to Atlas Explorations Limited
S.H. PILCHER and W.N. PLUMB	Cassiar Asbestos Corporation Ltd. ABEM Magnetometer Survey "E" Zone, Fyre Lake Area (1961) -A private report to Cassiar Asbestos Corporation Ltd.

APPENDIX II

FYRE LAKE AREA PROJECT
ASH MINERAL CLAIM GROUPS
GEOCHEMICAL SOIL SAMPLING SURVEY

SUMMARY OF COSTS

1.	Wages and Salary May 20, 1966 to June 22, 1966 33 days at $20.00/day	$ 660.00
2.	Subsistence, Room and board in the field at $12.00/man/day for 33 days	396.00
3.	Overall Supervision of Sampling Survey at pro-rated cost of $10.00/ man/day	330.00
4.	Aircraft Support Charges, Fixed Wing Service from Ross River to Fyre Lake, Round trip 172 miles with Beaver Aircraft @ $.75/mile, 4 trips total x $.75 x 172 miles	517.00
5.	Total Cost Analysis of Samples for Trace Element Content by Atomic Absorption Photospectrometer Method 1202 samples at $2.50 each	3,005.00
6.	Preparation of Report and Presentation of Data	500.00
		$ 5,408.00

APPENDIX III

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AFFIDAVIT SUPPORTING SUMMARY OF COSTS

I, JOHN S. BROCK, Assistant Exploration Manager of Atlas Explorations Limited, of Ross River, Yukon Territory, do hereby state that to the best of my knowledge and belief, the statement of costs as presented in this report "Geochemical Soil Sampling Survey - Ash Mineral Claim Groups" (Appendix II) is both correct and true.

John S. Brock

April 13/67
Date

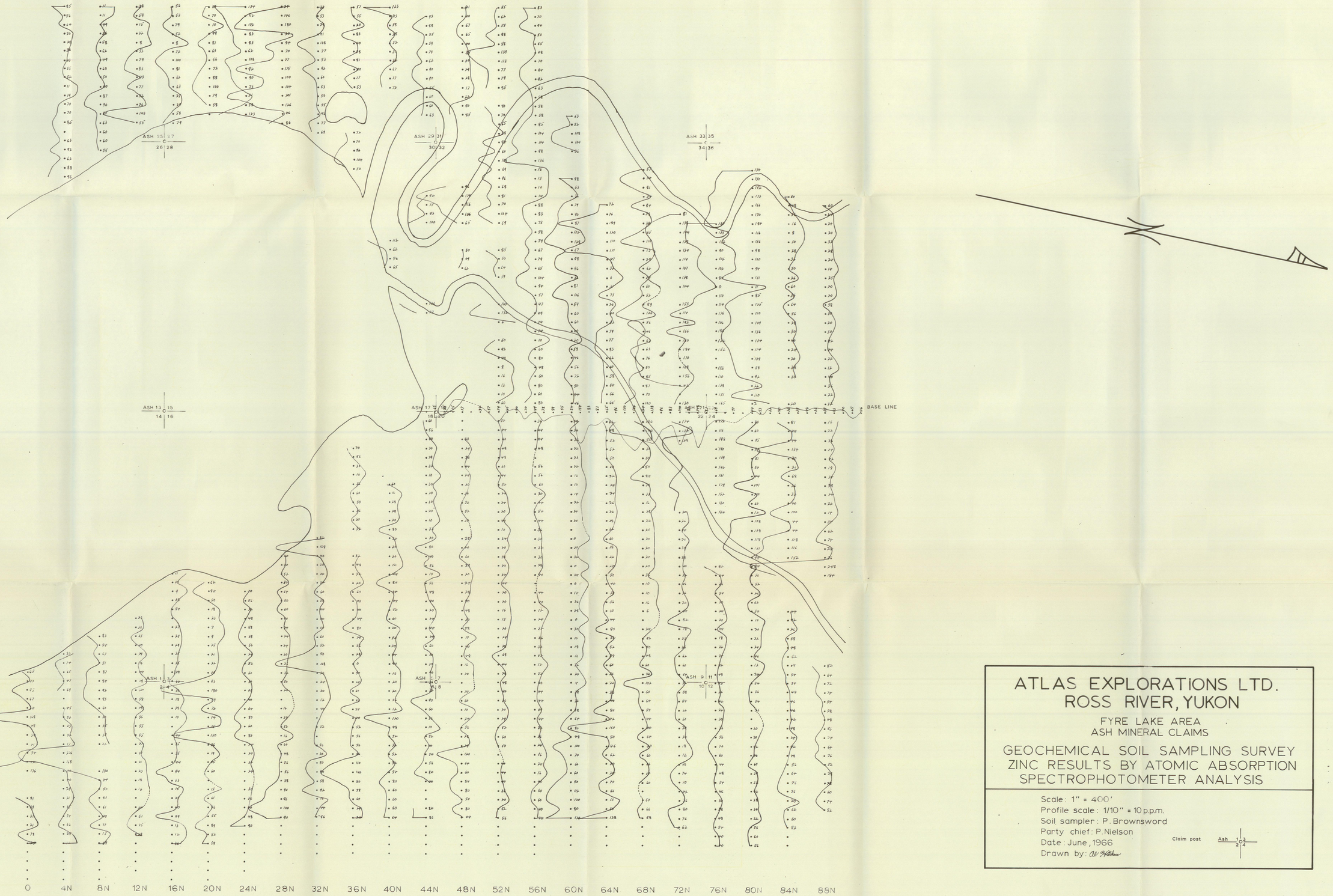
A Commissioner of Oaths in and
for the Yukon Territory

APPENDIX IV

PERSONNEL
FYRE LAKE GEOLOGICAL, GEOPHYSICAL
GEOCHEMICAL CREW

SURVEYS: ASH MINERAL CLAIMS

Phil Nielsen	Party Chief	1600 Beach Avenue Vancouver 5, B.C.
Peter Tegart	EM Operator	4438 W. 13th Avenue Vancouver 8, B.C.
Murray Simpson	EM Operator	c/o General Delivery Whitehorse, Y.T.
Ted Lightfoot	EM Operator	7081- 232nd Street RR #7, Langley, BC
William Barclay	Magnetometer Operator	6040 Iona Drive Vancouver 8, B.C.
Patrick Brownsword	Geochemical Sampler	3563 Quebec Street Vancouver, B.C.
Timothy Sadlier-Brown	Geologist	1490 Edecliffe Ave Ottawa 3, Ontario
Douglas Tizya	Cook	c/o General Delivery Whitehorse, Y.T.
Joe Etzel	Linecutter	c/o General Delivery Whitehorse, Y.T.
Sam Smarch	Linecutter	c/o General Delivery Whitehorse, Y.T.
Mac Ladue	Linecutter	c/o General Delivery Ross River, Y.T.
Jim Atkinson	Linecutter	c/o General Delivery Ross River, Y.T.
George Johnny	Linecutter	c/o General Delivery Ross River, Y.T.



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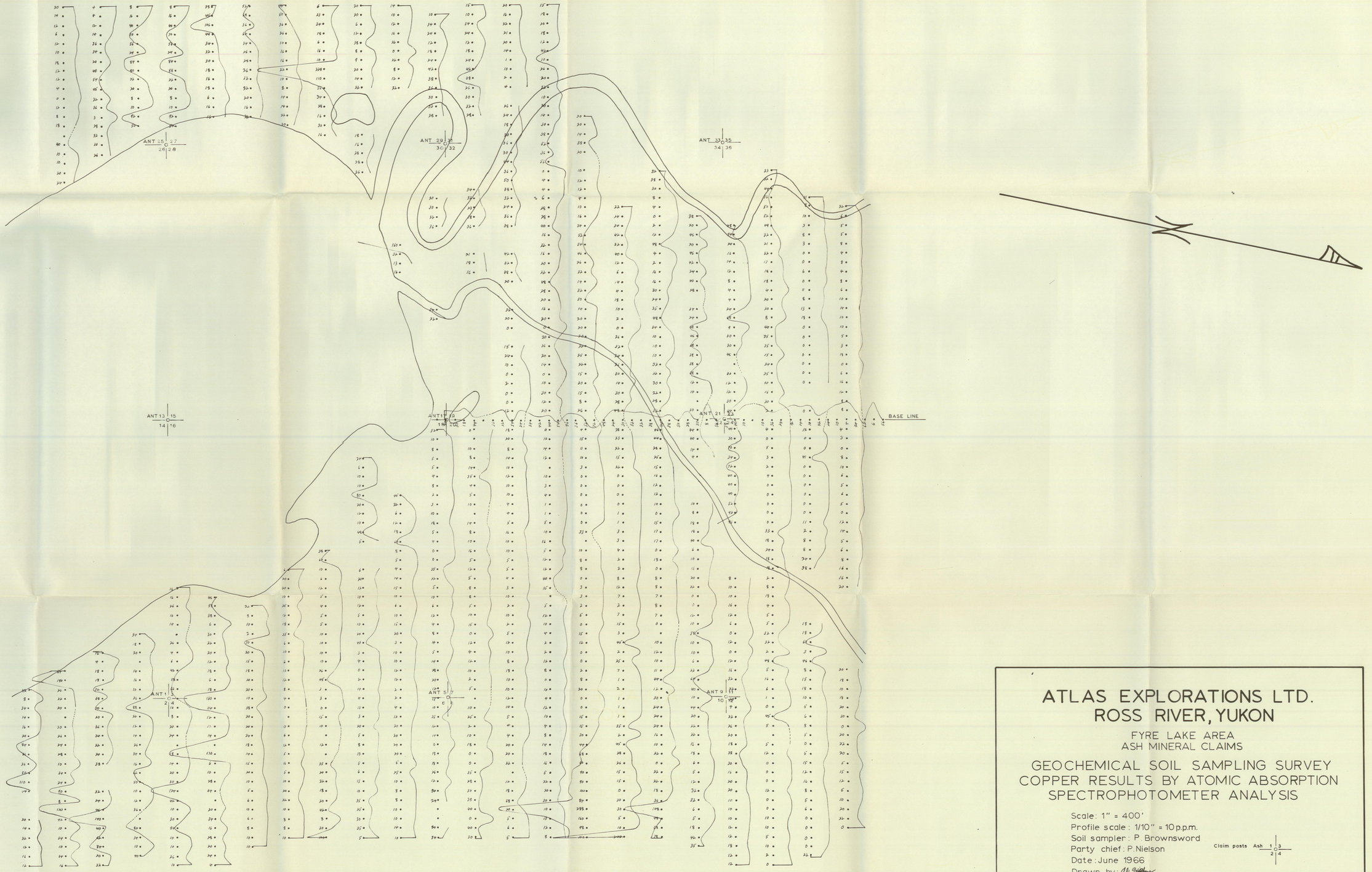
FYRE LAKE AREA
ASH MINERAL CLAIMS

GEOCHEMICAL SOIL SAMPLING SURVEY
ZINC RESULTS BY ATOMIC ABSORPTION SPECTROPHOTOMETER ANALYSIS

Scale: 1" = 400'
Profile scale: 1/10" = 10 p.p.m.
Soil sampler: P. Brownsword
Party chief: P. Nielson
Date: June, 1966
Drawn by: [illegible]

Claim post Ash 1 3 C 2 4



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FYRE LAKE AREA
ASH MINERAL CLAIMS

GEOCHEMICAL SOIL SAMPLING SURVEY
COPPER RESULTS BY ATOMIC ABSORPTION SPECTROPHOTOMETER ANALYSIS

Scale: 1" = 400'
Profile scale: 1/10" = 10 p.p.m.
Soil sampler: P. Brownsword
Party chief: P. Nielson
Date: June 1966
Drawn by: [illegible]

Claim posts Ash 1 3 / 2 4

0N 4N 8N 12N 16N 20N 24N 28N 32N 36N 40N 44N 48N 52N 56N 60N 64N 68N 72N 76N 80N 84N 88N

44W 40W 36W 32W 28W 24W 20W 16W 12W 8W 4W Base Line 4E 8E 12E 16E 20E 24E 28E 32E 36E 40E 44E

FYRE LAKE

ASH 25 | 27 / 26 | 28

ASH 29 | 31 / 30 | 32

ASH 33 | 35 / 34 | 36

ASH 13 | 15 / 14 | 16

ASH 17 | 19 / 18 | 20

ASH 21 | 23 / 22 | 24

ASH 1 | 3 / 2 | 4

ASH 5 | 7 / 6 | 8

ASH 9 | 11 / 10 | 12

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ROSS RIVER, YUKON
FYRE LAKE AREA
ASH MINERAL CLAIMS
ZINC GEOCHEMICAL SURVEY
INTERPRETATIVE CONTOUR MAP

CONTOUR INTERVAL 50 p.p.m.
ANOMALOUS VALUES > 150 p.p.m
SOIL SAMPLER : P. BROWNSWORD
PARTY CHIEF : P. NEILSON
DATE : JUNE 1966
DRAWN BY : J.N.B.

CLAIM POST : ASH 1 | 3 / 2 | 4

SCALE
400 0 400 800
FEET

44 W
40W
36W
32W
28 W
24 W
20 W
16 W
12 W
8 W
4 W
0
4 E
8 E
12 E
16 E
20 E
24 E
28 E
32 E
36 E
40 E
44 E
48 E

0 4N 8N 12N 16N 20N 24N 28N 32N 36N 40N 44N 48N 52N 56N 60N 64N 68N 72N 76N 80N 84N 88N

FYRE LAKE

ASH 25 27 / 26 28

ASH 28 31 / 30 32

ASH33 35 / 34 36

ASH 13 15 / 14 16

ASH17 19 / 18 20

ASH 21 23 / 22 24

BASE LINE

ASH 1 3 / 2 4

ASH 5 7 / 6 8

ASH 9 11 / 10 12

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ROSS RIVER, YUKON
FYRE LAKE AREA
ASH MINERAL CLAIMS

COPPER GEOCHEMICAL SURVEY

INTERPRETATIVE CONTOUR MAP

CONTOUR INTERVAL : 20 P.P.M. ANOMALOUS VALUES : > 70 P.P.M.
SOIL SAMPLER : P. BROWNSFORD
PARTY CHIEF : P. NEILSON
DATE : JUNE 1966
DRAWN : P.J.F. VLASVELD

CLAIM POST ASH 1 3 / 2 4

400 0 400 800 1200
SCALE IN FEET