

BOT MINERAL CLAIM GROUP

REPORT ON MAGNETIC GEOPHYSICAL SURVEY OF CLAIMS

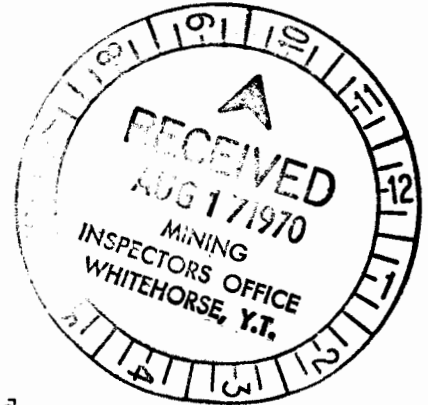
Watson Lake Mining District
Yukon Territory



Longitude 130°55'E

Latitude 61°40'N

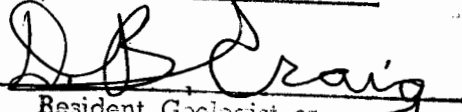
N.T.S. 105-G-10



Field Work done during period
August 1 - August 10, 1969

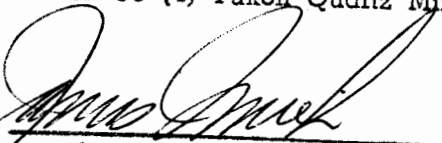
This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

\$1473.02


Resident Geologist or
Resident Mining Engineer

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

By:



Kenneth M. Dawson
Commissioner of Yukon Territory

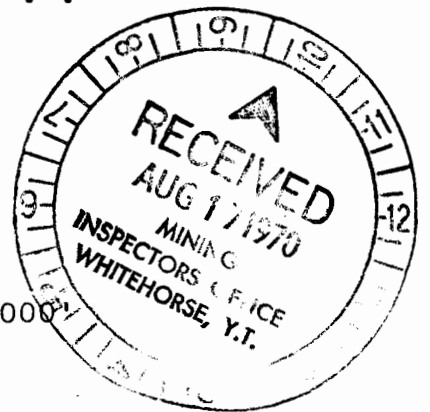


ATLAS EXPLORATIONS LIMITED

April 1970

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LIST OF CLAIMS

<u>Claim No.</u>	<u>Grant. No.</u>	<u>Date Recorded</u>
BOT 46-49	Y29348 - Y29351	August 6, 1969
BOT 50-57	Y29352 - Y29359	August 6, 1969
BOT 58-65	Y29360 - Y29367	August 6, 1969
BOT 66-69	Y29368 - Y29371	August 6, 1969

Total number of claims: 24

ATLAS EXPLORATIONS LIMITED

330 MARINE BUILDING
355 BURRARD STREET
VANCOUVER 1, B.C.

BOT MINERAL CLAIM GROUP REPORT ON MAGNETIC GEO- PHYSICAL SURVEY OF CLAIMS

By

Kenneth M. Dawson

INTRODUCTION

In July 1969, Stanley Reamsbottom and Peter Dean, geologist and prospector, respectively, with the Atlas Explorations' Tintina Project, discovered chrysotile asbestos in serpentine float on Big Campbell Creek, about 12 miles upstream from the bridge on Ross River-Watson Lake highway. Subsequent prospecting led to the discovery of five serpentine outcroppings containing fibre. Twenty-four BOT mineral claims were staked for Atlas Explorations in July, 1969, to cover the areas of asbestos mineralization.

Work done on the BOT group in 1969 includes geologic mapping, prospecting and sampling of the claims and adjacent area, line-cutting and ground magnetometer survey.

After the BOT claims were staked, 66,000 feet of lines were cut in preparations for a ground magnetometer survey and geological

mapping. A prospecting crew examined the claims and adjacent areas. Craig Fleming supervised line-cutting and prepared a geologic map of the claims. John Brock ran an orientation magnetometer survey. Gary Davies and Howard Larson ran a magnetometer survey between August 1 and August 10, 1969.

Magnetite alteration envelopes enclose chrysotile veinlets and provide a strong magnetic response in mineralized areas. Areas of anomalous magnetic response are targets on which trenching and sampling will be done in 1970.

LOCATION AND ACCESS

The BOT Group is located on Big Campbell Creek about 12 miles upstream from Ross River-Watson Lake highway bridge, and 6 miles southwest of the highway where it skirts the south shore of Finlayson Lake. The nearest settlement, Ross River, Y.T., is 75 miles by road northwest of Finlayson Lake. The claims are located in the western part of claim sheet 105-G-10 and location is given on Key Map, Appendix I.

Access to the claims was attained by helicopter in 1969. A helicopter pad was constructed near the main asbestos occurrence. Proposed work for 1970 includes construction of a road suitable for tracked vehicles from the highway at Finlayson Lake.

MAGNETOMETER SURVEY

Instrument

A Sharpe MF-1 fluxgate-type vertical component magnetometer was used. The instrument is hand-held and designed for rapid, accurate ground surveys. It gives a direct reading in gamma values and is not subject to large-scale drift by virtue of extensive temperature compensation and advanced transistorized circuitry. The maximum sensitivity is 20 gammas per scale division and readability is 5 gammas per scale division on the 1000-gamma range.

Survey Control

A grid was cut for magnetometer survey and for geologic map control. A 9200-foot base line was laid out with chain and compass on Azimuth 108° . Cross lines normal to base line were chained off at 400-foot intervals. Pickets were chained at 100-foot station intervals on cross lines. Native linecutters were hired in Ross River and supervised by Craig Fleming.

Survey Method

Prior to the actual survey, readings were taken at intersections of cross lines with the base line. The stations were "looped" and re-read every hour as a means of controlling drift and diurnal variations. Base stations of an established value served as reference points for each cross-line portion

of the survey. A rapid check was kept on magnetic variations and the entire survey was kept on a relative basis during day-to-day operations.

Treatment of Data

Results were corrected for diurnal variations and drift each night by the operator. The final gamma values were plotted on a grid plan using scale 1" = 200'. The data was contoured, and results compared with geologic mapping. A plan of station data is given in Appendix II.

GEOLOGY

The region encompasses four northwest-trending belts. From southwest to northeast these are:

- 1) folded and faulted Paleozoic rocks adjacent to Tintina Valley,
- 2) the Tintina fault zone that separates the Paleozoic strata from
- 3) Proterozoic metamorphic rocks with open folding, intruded by Mesozoic granitic plutons, and partially overlain by
- 4) a thick sequence of Mississippian metasediments, volcanic rocks, and ultrabasic intrusions.

Serpentinite dykes that contain asbestos on the BOT claims are included in the last unit.

A geologic map of BOT claims, based upon mapping by Craig Fleming, is given in Appendix III. A more detailed geologic description of BOT claims is given in "Bot Mineral Claims Group, Report on Geological Mapping of Claims, April 1970", by K.M. Dawson. Regional geologic data is drawn, in part, from Geological Survey of Canada Map 8-1960.

The BOT claims are underlain by Mississippian chloritic and graphitic phyllites with interbedded limestone. Phyllite is altered to greenschist adjacent to basic intrusives, and to orange-weathering quartz-carbonate rock along contact zones of a 200-to-500-foot-wide serpentinite dyke. Chrysotile asbestos fibre is found in five localities within the dyke that strikes N70W and dips steeply northward. Inferred strike length of dyke is 5000 feet. The central, 2500-foot-long section of the serpentinite dyke has been offset along two N60E faults.

Most chrysotile fibrils are 1/16 inch long, and asbestos constitutes about 3% by volume of the rock. This length and volume of fibre is considered to be sub-economic in Yukon. However, only a small portion of the serpentine dyke crops out, and economic mineralization may well occur in the area.

Chrysotile veinlets are mantled by 1/2-inch to 1-inch wide alteration envelopes of fine-grained magnetite. These

alteration features provide an important exploration guide in the stronger magnetic response of mineralized serpentine.

GEOPHYSICAL OBSERVATIONS AND INTERPRETATIONS

Magnetic highs ranging up to 12000 gammas were detected in eastern part of claim group. These highs are oriented in three elongate northwest-trending zones, as depicted on "Magnetometer Survey, BOT Claims, 1"=1000'", in Appendix IV.

Over and adjacent to asbestos occurrences on BOT #50, 51 and 53, magnetic highs range up to 2000 gammas. Spot magnetic lows occur adjacent to the serpentine dyke. One significant magnetic high on line 24E coincides with observed mineralization and is contiguous with an anomaly running 1200 feet southwestward.

Narrow northwest-trending magnetic highs in eastern part of claim group probably reflect underlying serpentinite dykes, since observed mineralization in a serpentinite dyke coincides with a magnetic high. This dyke is offset by a N60E fault. Parallel structures are seen in the field and on aerial photographs. The en echelon array of linear magnetic highs in eastern part of claims probably reflects two or three underlying serpentinite dykes, striking northwestward and offset along N60E faults.

Magnetic response of mineralized rock is typically a strong high with adjacent low, indicating a steeply-northward dipping tabular body. Geologic mapping confirmed this interpretation. A similar magnetic response is repeated in areas of no outcropping, indicating continuity of rock type and structure. Magnetic anomalies to the east are significantly higher than highs related to observed mineralization, indicating that intensity of magnetite alteration is greater and hence chrysotile mineralization also may be correspondingly of higher grade.

CONCLUSIONS

1. Chrysotile asbestos of sub-economic grade occurs in a northwest-trending serpentinite dyke 200-to-500 feet wide, over an inferred strike length of 5000 feet.
2. Only a small portion of the dyke crops out, but a magnetometer survey indicates a southeast extension of observed host rock plus at least two other parallel fault-offset dykes.
3. The strongest magnetic anomalies, in areas of no outcropping, may correspond to highest grade of asbestos mineralization.

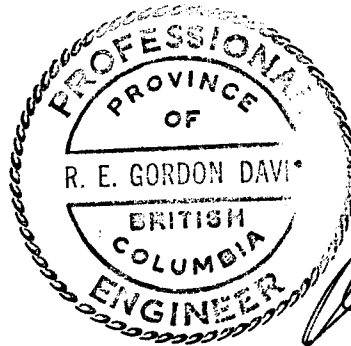
4. On the basis of favourable ground indicated by both ground magnetometer survey and geologic mapping, a program of bulldozer trenching on the BOT claims is proposed for the summer of 1970.

Respectfully submitted,

Kenneth M. Dawson,
Geologist.

April 1970

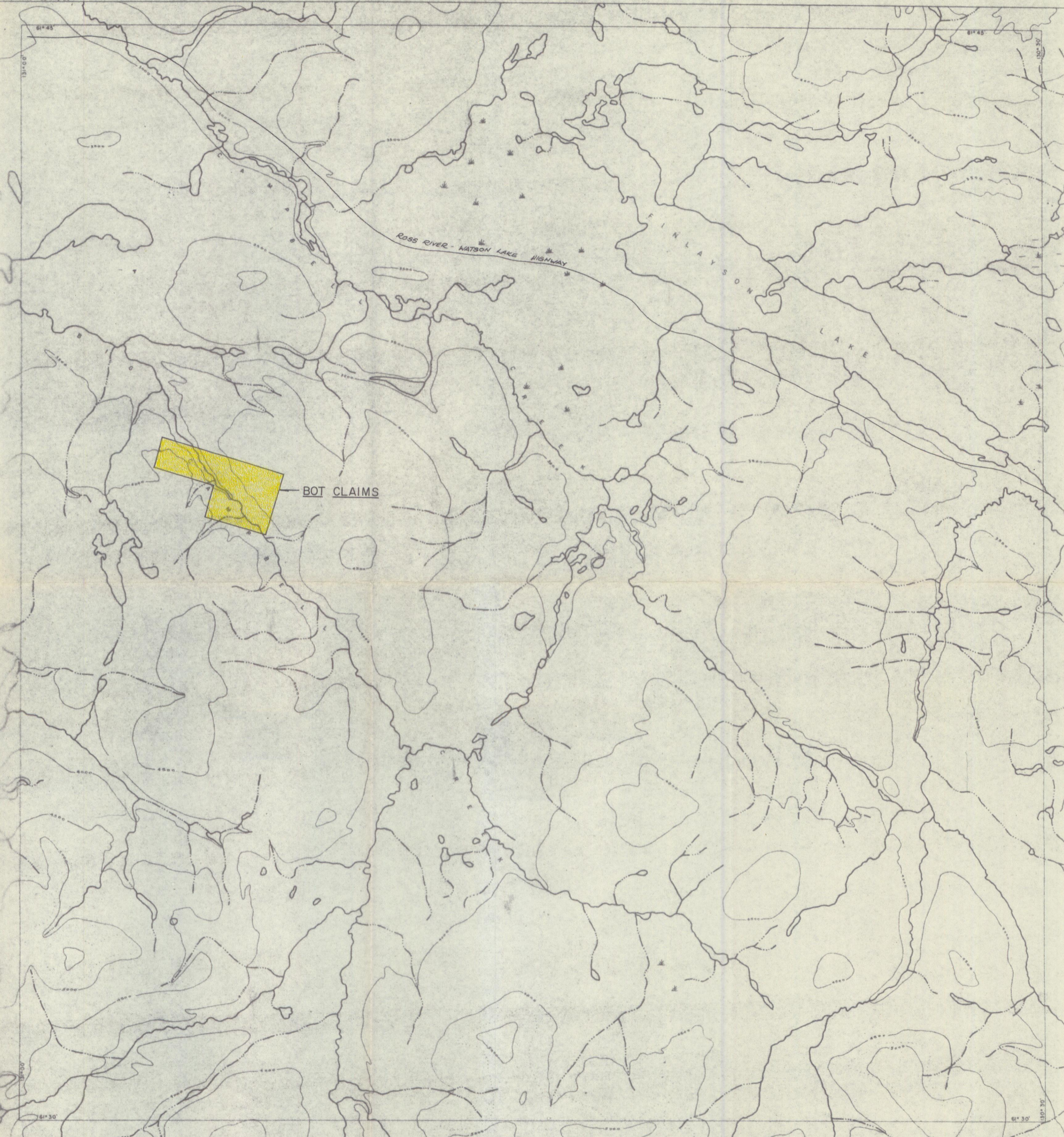
KMDjs



A handwritten signature in black ink, appearing to read "R. E. Gordon Davie", written over the right side of the professional seal.

1289175

WHITEHORSE 23 May 56



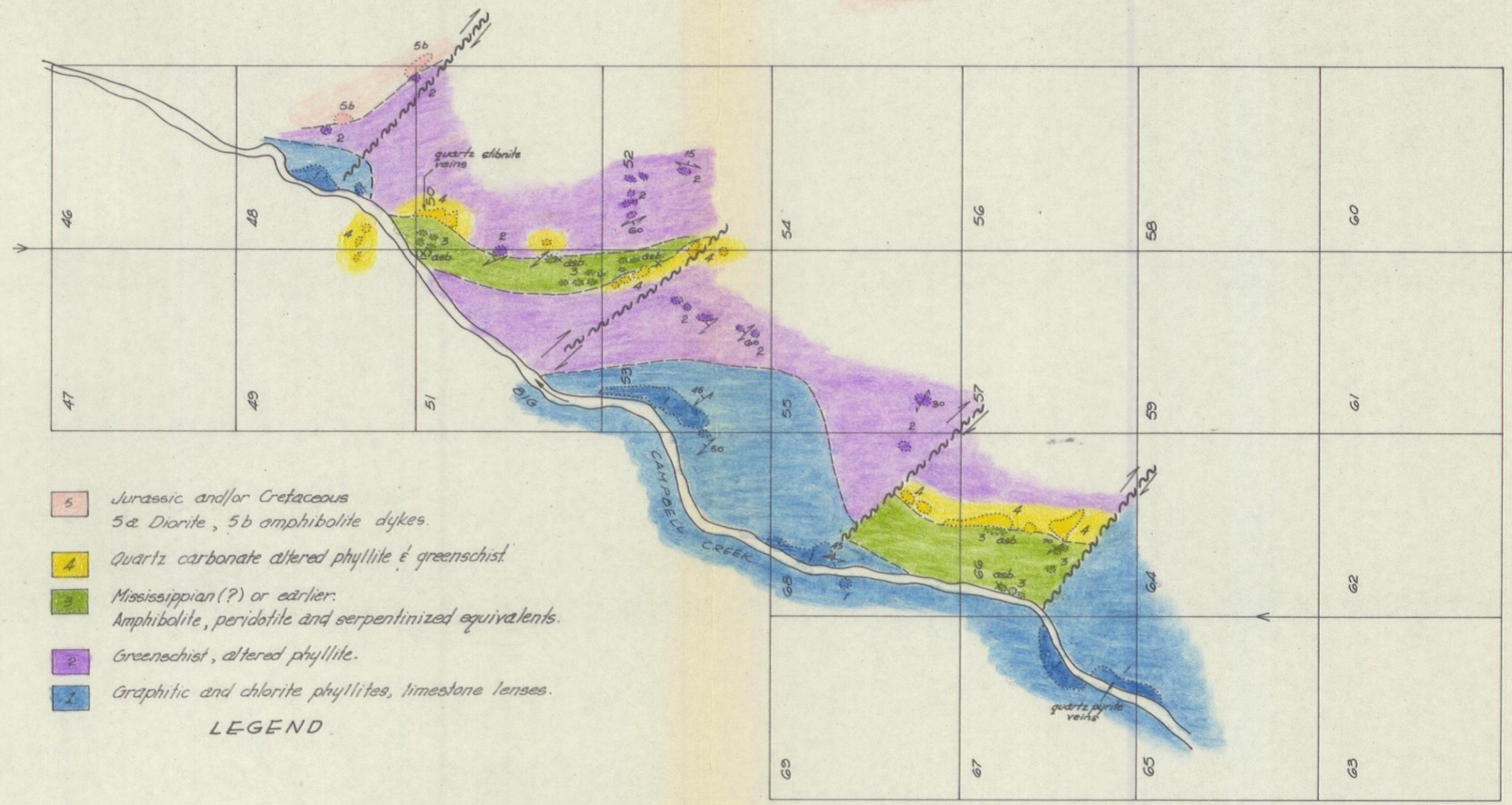
BOT CLAIMS

KEY MAP OF BOT CLAIMS
SCALE : 1inch = 1mile

1056-10



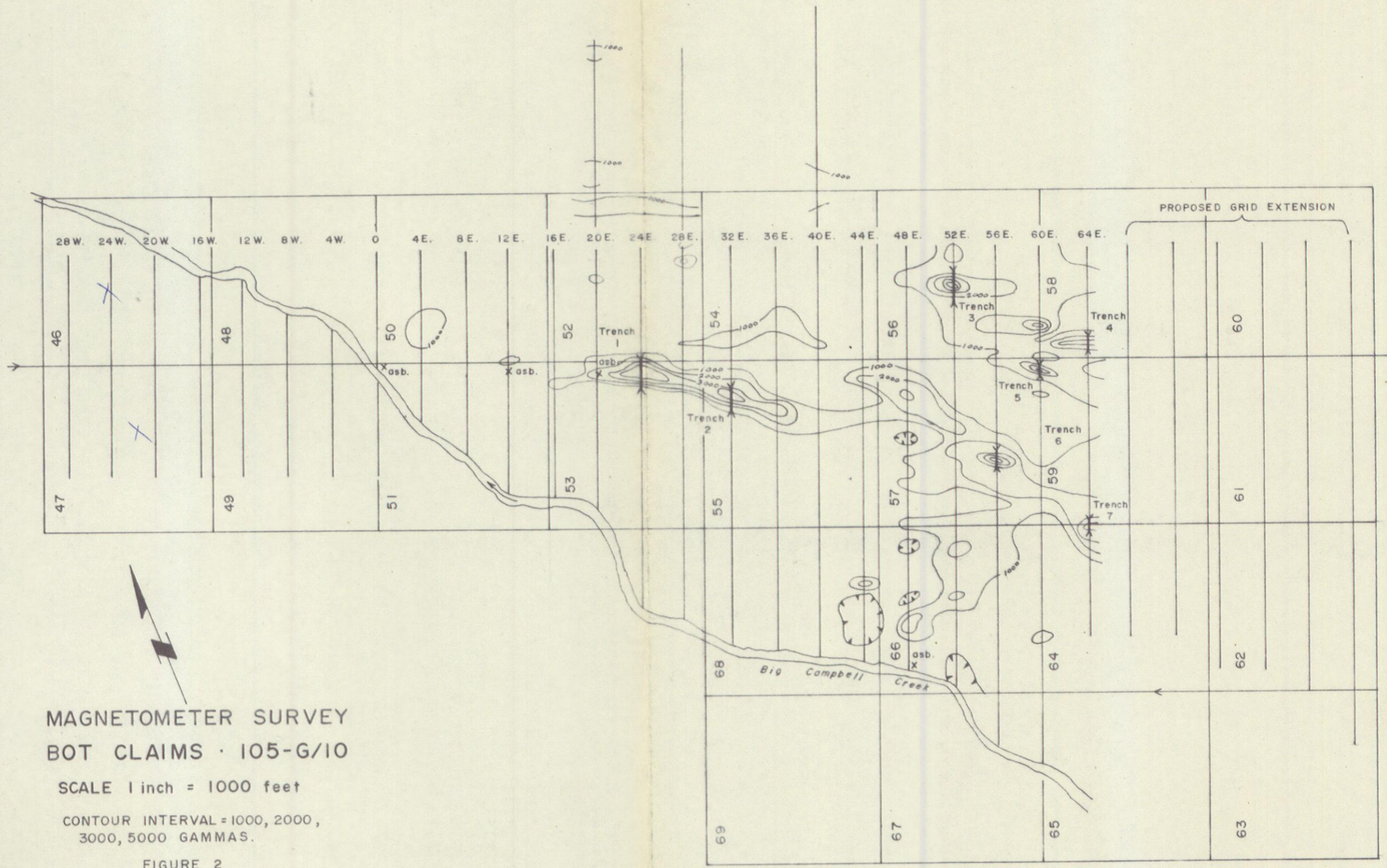
GEOLOGICAL MAP
BOT CLAIMS
105 · G/10
 SCALE: 1 inch = 1000 feet
 GEOLOGY: CRAIG FLEMING, 1969.



- 5 Jurassic and/or Cretaceous
5a Diorite, 5b amphibolite dykes.
- 4 Quartz carbonate altered phyllite & greenschist.
- 3 Mississippian (?) or earlier.
Amphibolite, peridotite and serpentized equivalents.
- 2 Greenschist, altered phyllite.
- 1 Graphitic and chlorite phyllites, limestone lenses.

LEGEND

61° 38' N
 130° 55' E



MAGNETOMETER SURVEY
 BOT CLAIMS · IO5-G/10

SCALE 1 inch = 1000 feet

CONTOUR INTERVAL = 1000, 2000,
 3000, 5000 GAMMAS.

FIGURE 2