

A GEOLOGICAL, GEOPHYSICAL, and
GEOCHEMICAL REPORT on the
FOG, S. L., and SHERRY GROUPS,
OMINECA M. D.

54° 12' S. E.

22 miles south of Smithers, B. C.

for

WHITESAIL MINES LTD.,

by

R. W. WOOLVERTON, BSc, P. Eng.

between

Sept. 15 and Nov. 21, 1968.

1922

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
GEOLOGY	3
GEOPHYSICAL SURVEY	4
GEOCHEMICAL SURVEY	5
COSTS	7

FIGURES

1. Location Map	2
2. Geology Map	in pocket
3. J. E. M. Survey Map	in pocket
4. Geochemical Soil Survey Map	in pocket

Department of Mineral and Geological Resources ALBERTA NO. <u>1922</u>

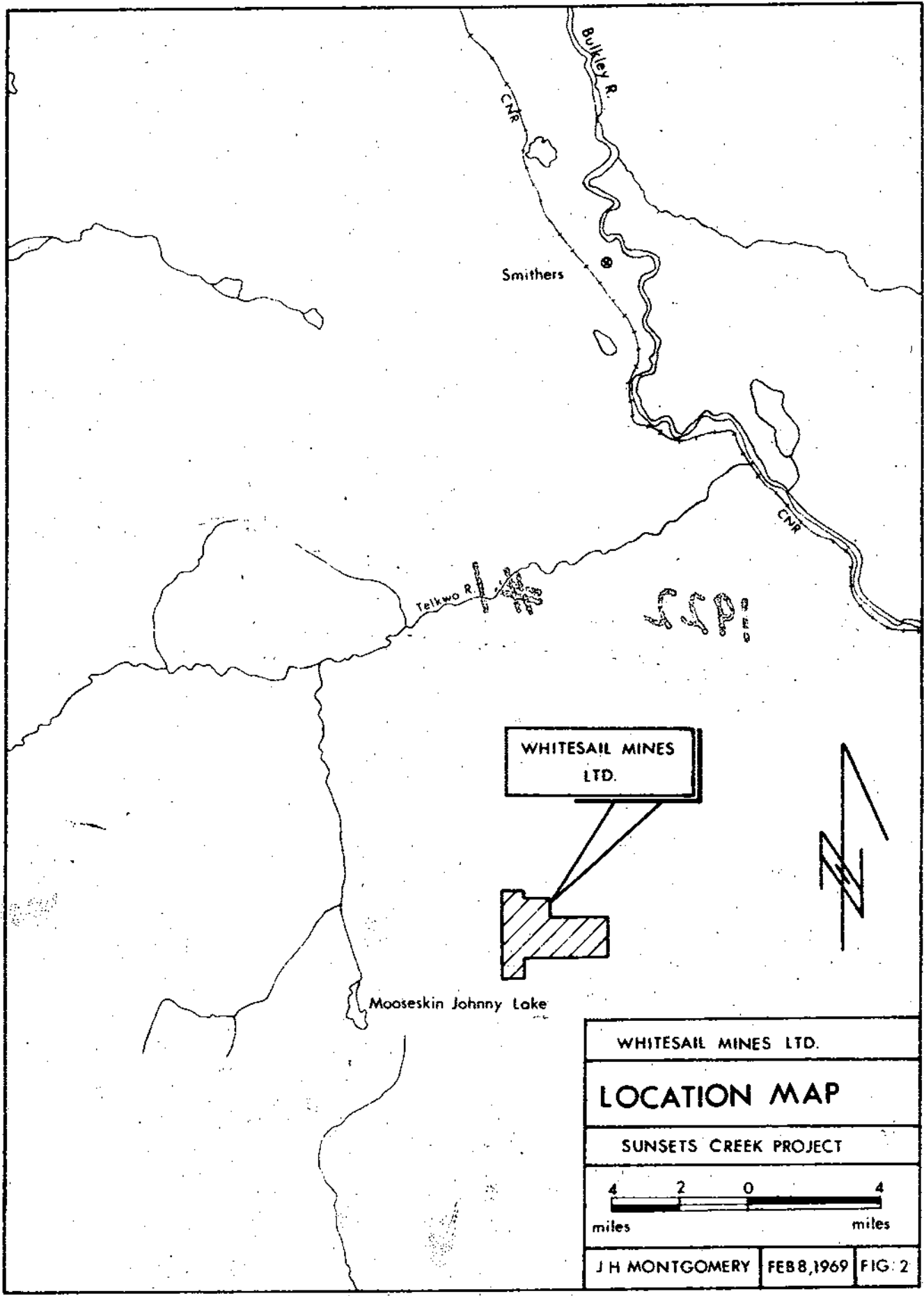
INTRODUCTION

The Fog, S. L., and Sherry Groups comprise the Sunsets Property held by Whitesail Mines Ltd. The 58 contiguous claim block is twenty-two air miles south of Smithers, B. C. in the centre of the Telkwa Mountain Range. The only access is by helicopter from Smithers. Elevation varies from 4700 feet to 7000 feet.

The property was first staked by Noranda Exploration in 1966 following a stream sediment sampling of the Telkwa Range. The survey indicated highly anomalous copper and molybdenum values in the streams draining the southwest part of the Sunsets Pluton.

Preliminary prospecting by Noranda revealed a typical "porphyry" geological environment. An E. M. 16 survey outlined several possible conductors (see Assessment Report by Dirom, 1967).

Whitesail Mines acquired the property in 1968. An initial exploratory program included a geochemical soil survey, a J. E. M. survey, two drill holes and limited geological mapping. A geological map of the property was produced by A. Sutherland-Brown of the Department of Mines in 1967.



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NO. 1922 MAP #1

GEOLOGY

The following account of the geology and mineralization is based on a report by A. Sutherland-Brown (Minister of Mines Report, 1967), several days mapping by the writer, and an examination and an Engineer's qualifying report by J. H. Montgomery, P. Eng. A geology map is included in the pocket of this report.

The Hazelton rocks are mainly dark greenish - grey volcanic tuffs which have been domed by the intrusion of the Sunsets pluton. Local hornfelsing has taken place near the intrusive contact. Dykes and sills of andesite and diabase have intruded the Hazelton rocks. The Sunset pluton is a subcircular body of quartz monzonite about $1\frac{1}{2}$ miles in diameter at its present level of exposure. Its contacts with the Hazelton rocks appear to be steeply dipping. An irregular domal roof probably existed slightly above the present level of the mountain peaks.

A rusty gossan which surrounds the pluton is apparently a result of oxidation of magnetite within the hornfelsic aureole. Some minor sulfide mineralization is found in the contact zone.

Three zones of pyrite-quartz-sericite alteration

within the pluton are associated with minor copper and molybdenum mineralization. In the zones of lesser alteration, pyrite occurs in fractures with some chloritization and sericitization. In the zones of more intense alteration, some of the rock has been entirely altered to quartz, sericite, and pyrite. Chalcopyrite and molybdenite occur mainly in fractures with quartz and pyrite.

GEOPHYSICAL SURVEY

An electromagnetic survey using a Crone 1800-3600 c.p.s. J. E. M. unit was carried out over the grid. This is a horizontal loop, E. M. unit operated by 2 men each carrying a unit capable of transmitting and receiving. They are spaced 200 feet or 300 feet apart and travel along the same line. Both transmit and receive, the two dip angles thus obtained are then added together. If the resultant is zero no conductors are present, otherwise a pattern is obtained dependant on the depth, dip and strike of the conductor.

Porphyry deposits are not good conductors. However, with some units, such as the J. E. M. and the E. M. 16, the shear zones associated with the fracturing and mineralization often show up as a characteristic hash. Also, concentrations of pyrite along major fracture directions often have associated lenses of massive

sulfides in the iron rim which sometimes are large enough and continuous enough to give a good J. E. M. response.

Unfortunately, the present grid, was enlarged primarily as a control for the soil survey and a planned I. P. survey and does not extend beyond the altered (granodiorite.)² Therefore, the E. M. response of the iron rim was not tested. However, a very weak conductive zone was indicated between 8S/25E and 6N/20E. This corresponds with several weak E. M. 16 zones discussed by Dirom in his assessment report on the Fog Group in 1967. The present writer agrees that this zone, which is outlined by both E. M. methods, requires investigation.

GEOCHEMICAL SURVEY

A geochemical soil survey was conducted over the property on a grid with 400 feet line spacing and 200 feet sample intervals. The samples were taken from the "B" horizon and shipped to Noranda Exploration's geochem. lab in Vancouver.

In the Noranda lab the samples were dried in an electric dryer and screened to -20 mesh. The material which passed this screening was then tested for Cu and Mo content.

The total Cu analysis is made by colorimetric comparison with solutions of known concentration. The Cu is taken into solution with KHSO_4 . The Mo analysis is also a colorimetric comparison following fusion of the Mo with Na OH.

Using the standard frequency distribution method, background values of 225 p.p.m. copper and 17 p.p.m. molybdenum were obtained. Indicated threshold values are 400 p.p.m. Cu and 45 p.p.m. Mo. A second Cu population with a threshold of 500 p.p.m. is also evident and is probably more closely associated with the mineralization.

Two anomalous zones were outlined as shown on the Geochemical Soil Survey map in the pocket of this report. Both anomalies are associated with the intense quartz-sericite alteration zones. However, only the eastern anomaly is anomalous in both copper and molybdenum. This may be a result of the gentler slopes. Also, the surface sulfides are less leached on the eastern anomaly so that the oxidation of the remaining sulfides would create a more acid environment which would tend to immobilize the Mo ions. An elongation or tail of the eastern anomaly along lines 8S and 16S is probably due to seepage at the base of the slope.

Both anomalies require further testing, probably by drilling, to determine the grade of the CuMo source. A mag-I. P. survey might help to more accurately define the mineralized areas.

COSTS

Geology

Consultant fees (Engineer's Report)		
3 days @ \$150	\$450	
geologist - supervising & mapping		
2 weeks	450	
consultant expenses (air fare)	100	\$1,000
Grid extension		
2 men for 2 weeks @ \$500/man/mo	500	500
Soil sampling		
2 men for 10 days	350	
300 assays \$2.00	600	950
E. M. survey		
2 men for 10 days	350	
equipment rental for 1 mon and air freight	250	600
Board and Room		
87 man days @ \$5/man/day	435	435
Helicopter bills	1100	<u>1100</u>
TOTAL		\$ 4585

Only \$3,000 is being applied as assesment.



Respectfully Submitted,

R. Woolverton

R. Woolverton, P. Eng.

Smithers, B. C.
July 9, 1969.



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MINERAL DEPOSIT INVENTORY

Property No. Metal. Industrial Mineral. Placer. Coal. Lapidary. Number of cards.

Name: Current Previous

C.G. lot name No.

Owner Operator

Location: Map No. N.T.S. Sheet L.L.Q. Claim Et.

M.D. In park E. & N. Phys. subd.

Isolated deposit. Mineralized region. Mining camp Locality

Discovery: Date Method

Status: Producer : Active. Intermittent. Inactive. Exhausted. L.+ L. M. S. S.-

Non-producer : Pot. prod. Under exploration. Prospect. Occurrence.

Reserves: L+. L. M. S. S-. Tons Grade

Est. potential: L+. L. M. S. S-. Grade

Development: Surface Surveys: Geophys. Geochem. Geol.

Underground

Diamond drilling Other drilling

Reports on Property: M.M. A.R.

Dept. expl. forms

Assessment reports: Geological Geophysical Geochemical

Geological and maps

Reports on Region: Geological

Geophysical

Geochemical

Recorded by Date Revised by Date

Summary description

Category of deposit

Wallrock(s) Formational name

Attitude of deposit: Strike Dip Azimuth Plunge

Size: Length Width Depth

Character of mineralization

Main elements

Mineralogy

Assays

Production: Tons Grade

Remarks

Product(s)

Property No.

60 W

40 W

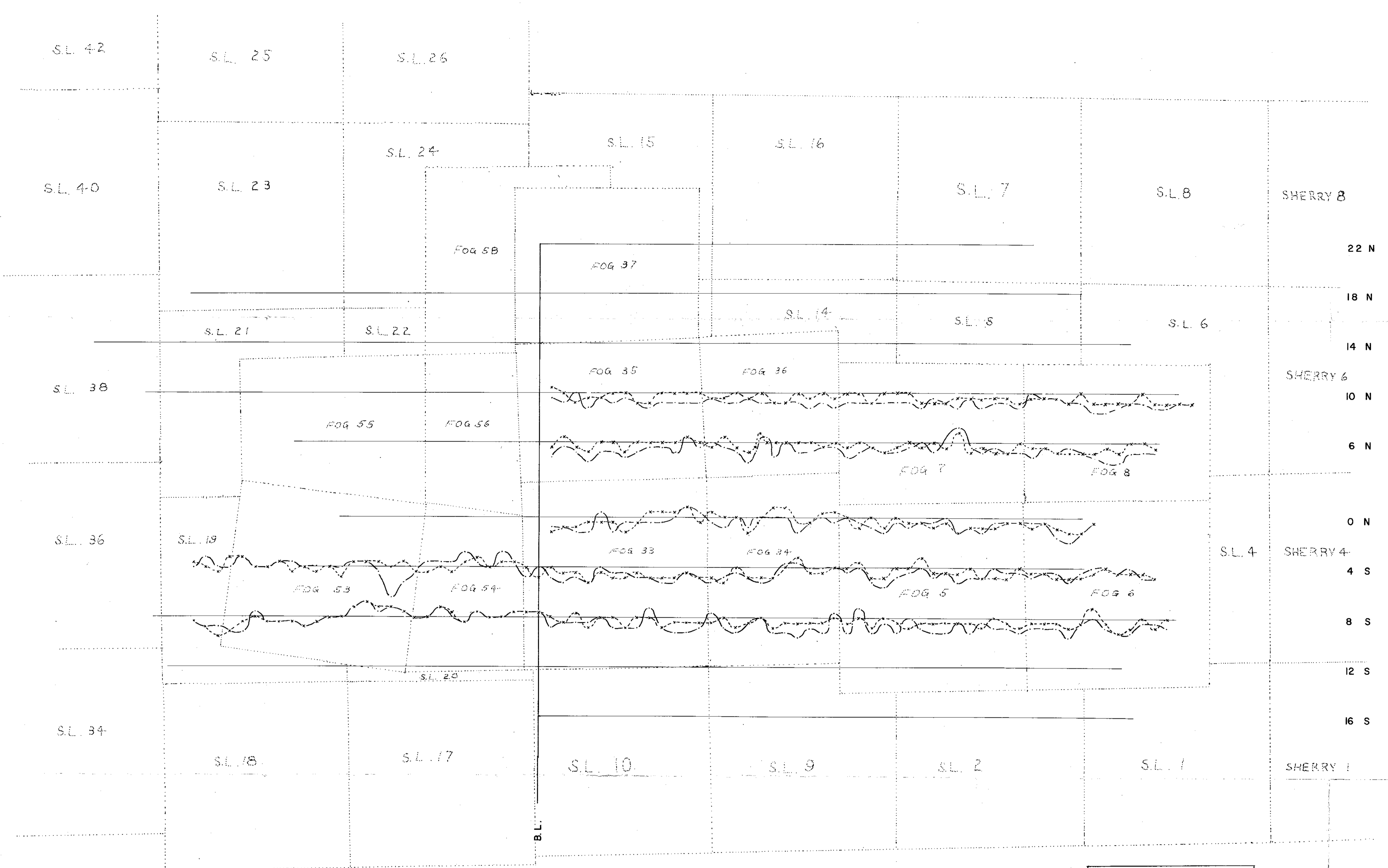
20 W

0 B.L.

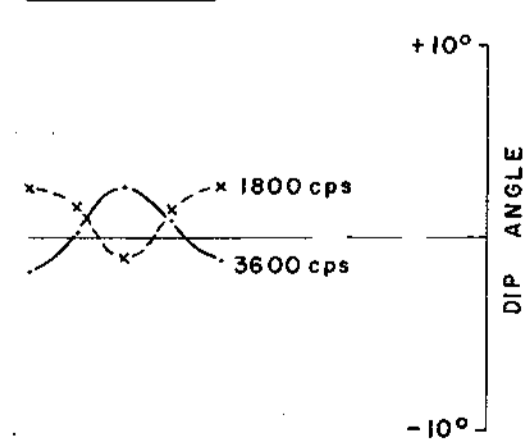
20 E

40 E

60 E



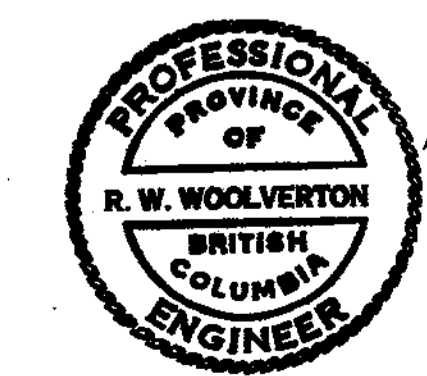
LEGEND:



TO ACCOMPANY A REPORT BY
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ON THE FOG, SL, SHERRY GROUPS

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ASSESSMENT REPORT
NO. **1922** MAP **#2**

WHITESAIL MINES LIMITED
SUNSETS PROPERTY
J.E.M. SURVEY
OMINECA M.D., B.C.
SCALE: 1" = 400'



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10 July 1969

1922

60 W

40 W

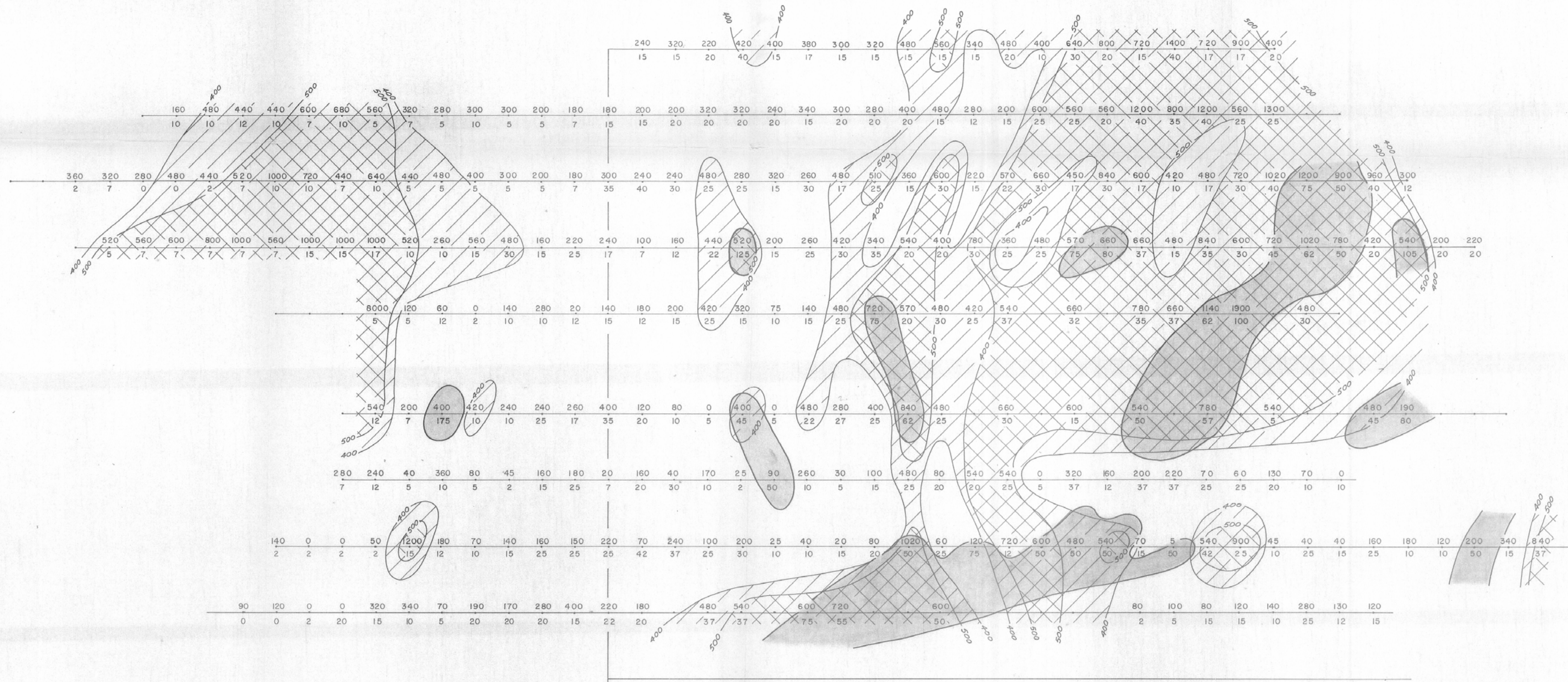
20 W

0 B.L.

20 E

40 E

60 E



LEGEND:

- 100 P.P.M. Cu
- 20 P.P.M. Mo
- 45 P.P.M. Mo THRESHOLD
- 400 P.P.M. Cu THRESHOLD 1st POPULATION
- 500 P.P.M. Cu THRESHOLD 2nd POPULATION

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Department of Mines and Petroleum Resources ASSESSMENT REPORT NO. 1922 MAP #3

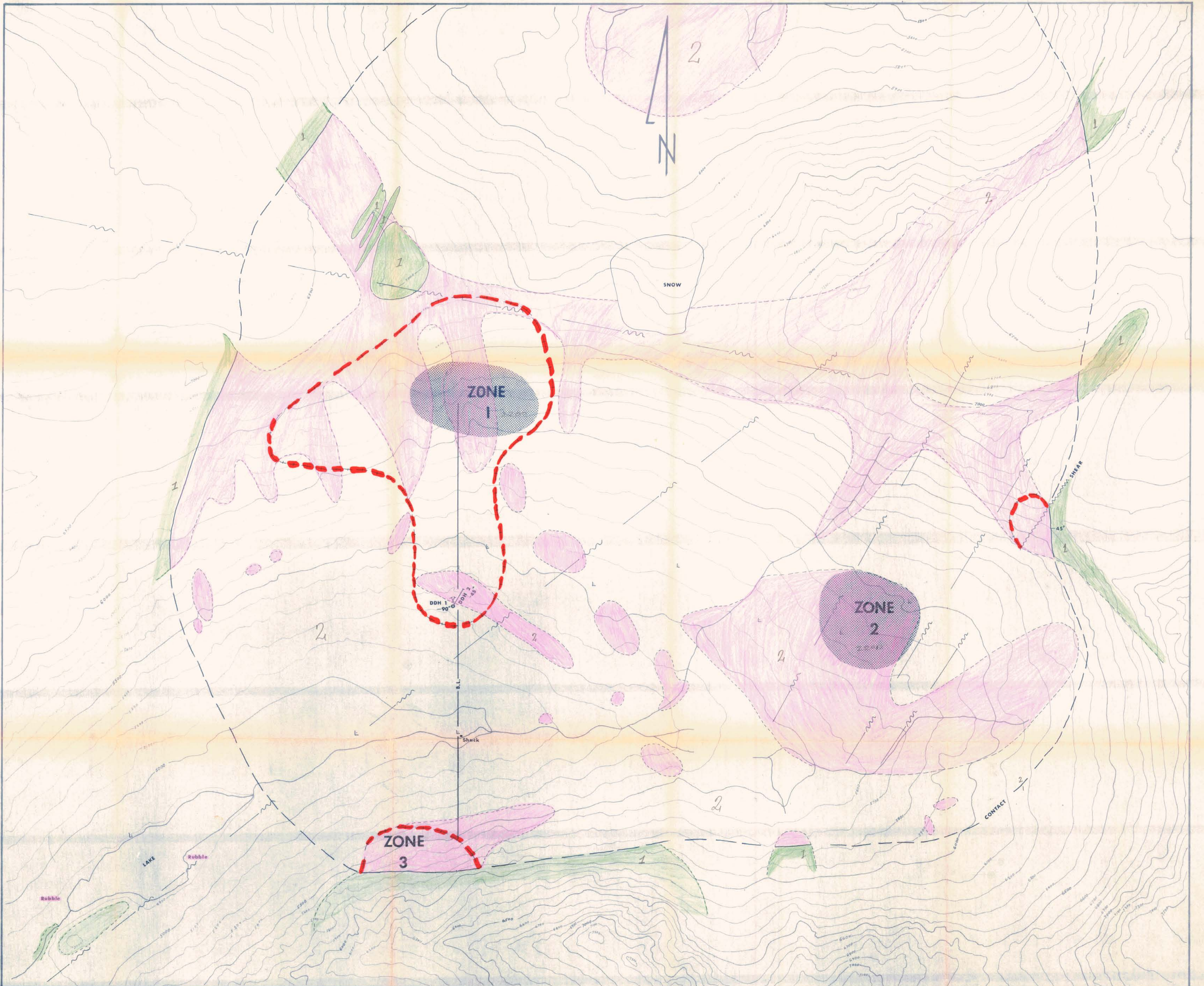
WHITESAIL MINES LIMITED SUNSETS PROPERTY GEOCHEMICAL SOIL SURVEY OMINECA M.D., B.C.

SCALE: 1" = 400'



R. Woolverton 10 July 1969

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10 July 1969

- 2 Quartz monzonite porphyry
 - 1 Hazelton basic volcanics
 - Intense quartz-sericite-pyrite alteration
 - Pyritic zones-minor alteration
 - L Photo target
 - Photo linears
 - X Trench
- GEOLOGY AFTER A. SUTHERLAND-BROWN, 1967.

WHITESAIL MINE LTD.
SUNSETS

1922 GEOLOGY

Field work by	SCALE 1" = 400'	DATE
		95 L. 6/E.