

MINING AND GEOLOGICAL SURVEY

Geological Map of

BURN PIT GROUP

KWANIKA CREEK AREA

OMINECA MINING DIVISION

by

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September 24th, 1975

Department of
Energy and Mines
Geological Survey
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Frontispiece - Location Map of BURN No. 1 Group

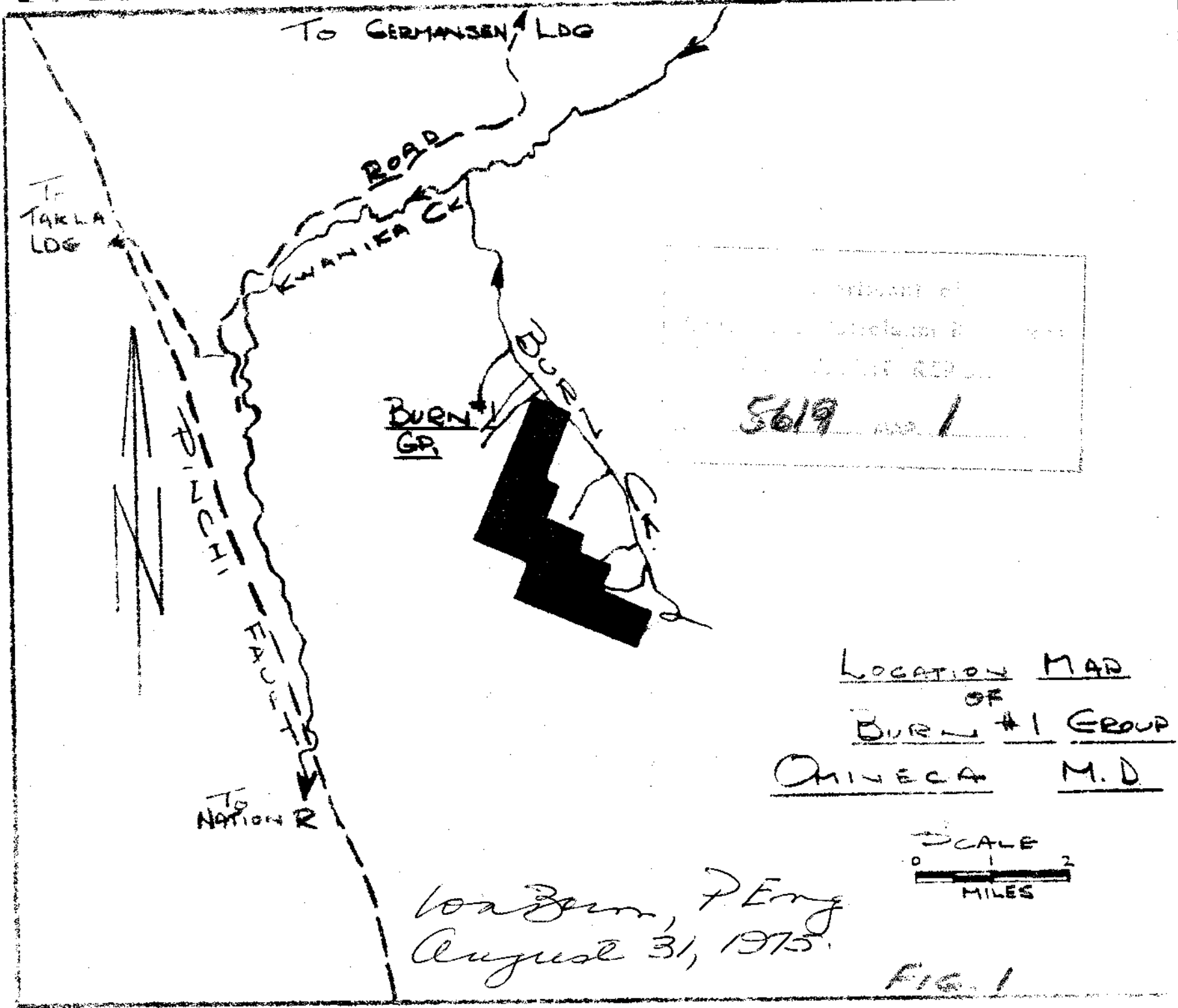


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ILLUSTRATIONS

Figure 1. ^{Map} #1	Location Map of BURN #1 Group	Frontispiece
2	<i>CLAIM MAP</i>	
2. #3	Soil Sample Map, ppm. Mo	In envelope at back of report
3. #4	Soil Sample Map, ppm. Cu	"
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INTRODUCTION

The BURN #1 and BURN #2 claim groups comprise the BURN property. They are located on a northerly flowing tributary of Kwanika Creek, NTS sheets 93N6 and 11, in the Omineca Mining District.

The BURN #1 group, which is the subject of this assessment report, is shown on the location map, Figure 1. This claim group is held in trust by the writer for the LUC Syndicate who paid for the 1975 program.

HISTORY

The BURN property was one of the more significant finds of the LUC Syndicate (1971-3), of which the writer was manager.

A showing of pyrite with very minor molybdenite and chalcopyrite was discovered by LUC employees David Douglas and Robert McMechan in July, 1971. The BURN 1-6 mineral claims were staked as a result of this find which is located in a northeasterly flowing branch creek downstream from the drill camp established in 1972.

Silt sampling of rivulets along the hillside south of BURN 1-6 led to discovery of an extensive area of anomalous molybdenum and, to a lesser extent, anomalous copper values. This in turn led to further staking, intensive prospecting, geological mapping, soil sampling on a grid pattern, magnetometer work and an induced polarization survey. The results were plotted on a 1" = 400' topographic map prepared by McElhanney Associates.

The decision to diamond drill in 1972 was made largely on the basis of the soil sampling results. Shepherd Enterprises of Rossland, B.C., was selected to do the drilling and drilled 12 holes for a total footage of 5,231 feet. The total cost of the 1972 program was \$123,261.01. The locations of the holes were selected by the writer and the program was a major disappointment.

In the following year, 1973, the property was examined carefully by one of the LUC Syndicate participants, Dome Exploration (Canada) Limited, in the persons of G.S.W. Bruce (Vice President of Exploration), L.B. Halladay (Geologist) and Dr. G.R. Webber (Consultant). As a result, it was considered advisable to grid the southern part of the property, to soil sample it, do magnetometer work and an induced polarization survey. Dome, the operator, is paying for the present program.

This report deals with the soil sampling and a magnetometer survey of the southern part of the property done this summer between June 23rd and August 15th. (The induced polarization survey is being undertaken in September and, thus, is too late for inclusion in this assessment report.)

ACCESS

Access now is just about the same as 30 years ago, what with the termination of industrial activity in the Germansen area. There is no longer a helicopter based there and Northern Thunderbird Air no longer has a scheduled run into Germansen Landing from Prince George. So it's about 140 miles to the mouth of Burn Creek by gravel road from Fort St. James, either that or air charter from Prince George.

From a practical standpoint, it was found most efficient to charter a helicopter and service the camp from Germansen Landing, a straight line distance of 30 miles.

PHYSICAL FEATURES

The part of the BURN property within the present surveys is a cirque open to the northeast. The curvilinear ridge forming the headwall of the cirque is just under 6000 feet in elevation and the grid area is between 5250 feet and 4750 feet in elevation, in the cirque basin.

The bush is thick in most places - mainly a stunted spruce that occurs in clumps.

There is a rather gradual ENE slope of 7° to the surface in the grid area.

LINECUTTING

Twenty miles of linecutting were done on the property in the 1975 program and the new grid is actually a southern extension of an existing grid.

The main base line of the existing grid (30E) was extended southward 7600 feet and a second base line (66E) was extended southward 4200 feet and used as a check line or tie line. Crosslines were cut at 400 foot intervals between and, in places, beyond the aforementioned base lines.

The new grid was laid out by transit and tape. The writer checked the 30E base line and its bearing is astronomic north.

Ten miles (including base lines) of this linecutting was done on the BURN #1 group.

GEOCHEMISTRY

10-20 feet of glacial till covers a variable granitic terrain in the cirque basin. The till is made up of poorly sorted rock fragments, pebbles and boulders, mostly angular, some sub-rounded. Much of the overburden appears to be local, but some erratic, well-rounded pebbles have also been noted.

As might be anticipated in an area of till, there is little consistency in the overburden profile from sample hole to sample hole on the crosslines (400 feet apart). Sand, clay and rock fragments are encountered in holes up to 2 feet deep. Humus varies from an inch or two in thickness to more than a foot.

The holes were dug an average of 20" deep with grub hoes, geological picks and trowels - with samples taken at 100 foot intervals on crosslines - except in the rare swampy area. The samples were collected in kraft paper bags designed for the purpose and the field procedure was supervised by prospector J.P. Stevenson who has been employed by the writer for 7 years and knows the soil sampling business as well as anyone in B.C.

The samples were taken in August and sent to Chemex Labs Ltd., North Vancouver, for preparation and analysis. The Chemex method of analysis for copper and molybdenum is as follows:

August 15, 1975.

LAB PROCEDURES FOR THE HANDLING AND ANALYSES OF COPPER AND
MOLYBDENUM IN SOIL AND SILT MATERIALS:

1. Samples are sorted, recorded and oven dried @ 80°C.
2. The -80 mesh fraction is retained in powder seal envelopes. Coarse material is normally discarded.
3. 0.50 gms. of -80 mesh sample is weighed into a 22 x 175 test tube. 3 mls 70% HClO₄ and 2 mls. conc. HNO₃ is added to sample. Sample is slowly heated to 203°C. Digestion time 2 - 3 hours.
4. Cool and adjust sample volume to 25 mls using distilled water. Mix thoroughly and allow sediment to settle.
5. Analyse sample solutions for PPM copper and PPM molybdenum by standard atomic absorption procedures.

Detection limits - Copper - 1 PPM
Molybdenum - 1 PPM

Chemex Labs Ltd.,
212 Brooksbank Ave.,
North Vancouver, B. C.

In Section 53 of 'Regulations Governing Assessment Work under the Mineral Act (March, 1975)', it is stated that "an interpretation and evaluation of the (geochemical) results must be submitted". This would be more simple for the writer if the huge anomalous area to the north of the present work area had yielded a mine during the 1972 diamond drilling program. But, as noted elsewhere, no economic mineralization (molybdenum or copper) was encountered in the 1972 program.

From this, it is obvious that the soil anomalies are transported and presumably downhill (eastward and northward). In view of the proximity of the unmineralized diorite ridge forming the headwall of the cirque basin, the source of the anomalies almost has to be within the Burn Creek drainage area - and between the headwall and the anomalies. In any event, geochemistry must remain a principal guide in the search for a mine. If one is not prepared to put considerable credence on these results, obviously the 1975 soil sampling program is completely without merit.

Previous soil analyses for cold extractable copper showed that the readily extractable copper is low in proportion to the total copper. This suggests that the metal concentrations in the soil are not predominantly water transported and adsorbed.

The northernmost soil samples (on BURN 64, 66, 68), taken in the 1975 program, are anomalous for molybdenum and suggest a northwesterly trend to the anomalous area - which is consistent with the strong lineation seen on the relevant aerial photos and, also, with what is considered to be the principal direction of fracturing on the BURN claims.

The copper mineralization has been considered of secondary importance to the molybdenum, particularly after the 1972 induced polarization program failed to indicate any appreciably anomalous areas. This was undertaken in what was considered to be the prime area of interest - north of the present work area.

The 1975 soil samples were analyzed for copper as well as molybdenum in the hope that the copper results might be meaningful. In this regard, the northernmost soil samples generally appear to be higher in ppm. copper, consistent with the molybdenum results.

MAGNETOMETER SURVEY

A magnetometer survey of the same general area as that soil sampled was undertaken and the results are shown in Figure 4.

The instrument used was an MF-1 Fluxgate Magnetometer and, for the reader unfamiliar with the specifications of this instrument, the specifications are included as Page 9.

The values shown on Figure 4 are relative values and it is the vertical component of the magnetic field that is measured. The values are measured in gammas and the instrument has a sensitivity of 20 gammas/scale division in the most sensitive range - the range used. Corrections for diurnal variation were made on the usual time basis.

The survey was undertaken in an area in which the topography is mapped (see 'Physical Features') and the geology is known, in the latter case from painstaking mapping of float.

Figure 4 has been contoured in the meaningful range, i.e. 1000 gammas - 1400 gammas. The terrain is entirely granitic but there is considerable variation in the rock composition, ranging from alaskite to diorite. The more highly magnetic phase of the terrain is the more basic geological phase, i.e. diorite.

The magnetometer survey was undertaken in the hope that it would add substantially to the total picture. This hope was not fulfilled but the contouring does confirm the regional trend to be very slightly west of north.

SPECIFICATIONS OF
FLUXGATE MAGNETOMETER
MODEL MF-1

Ranges:	Plus or minus — 1,000 gammas f. sc. 3,000 " 10,000 " 30,000 " 100,000 " Sensitivity 20 gammas/div. ✓ 50 " 200 " 500 " 2,000 "
Meter:	Taut-band suspension 1000 gammas scale 1 7/8" long — 50 div. 3000 gammas scale 1 11/16" long — 60 div.
Accuracy:	1000 to 10,000 gamma ranges ± 0.5% of full scale 30,000 and 100,000 gamma ranges ± 1% of full scale
Operating Temperature:	—40°C to +40°C —40°F to +100°F
Temperature Stability:	Less than 2 gammas per °C (1 gamma / °F) ✓
Noise Level:	Total 1 gamma P-P
Long Term Stability:	± 1 gamma for 24 hours at constant temperature
Bucking Adjustments: (Latitude)	10,000 to 75,000 gammas by 9 steps of approximately 8,000 gammas and fine control by 10 turn potentiometer. Convertible for southern hemisphere or ± 30,000 gammas equatorial.
Recording Output:	1.7 ma per oersted for 1000 to 100,000 gamma ranges with maximum termination of 15,000 ohms.
Response:	DC to 5 cps (3db down)
Connector:	Amphenol 91-MC3F1
Batteries:	12 x 1.5V-flashlight batteries "C" cell type) (AC Power supply available)
Consumption:	50 milliamperes
Dimensions:	Instrument — 6 1/2" x 3 1/2" x 12 1/2" 165 x 90 x 320 mm Battery pack — 4" x 2" x 7" 100 x 50 x 180 mm Shipping Container — 10" dia x 16" 254 mm dia. x 410 mm
Weights:	Instrument — 5 lbs. 12 oz. 2.6 kg. Battery Pack — 2 lbs. 4 oz. 1.0 kg. Shipping — 13 lbs. 6.0 kg.



SCINTREX LIMITED

79 Martin Ross Avenue, Downsview, Ontario, Canada

EXPENSES

Transport of crew from Vancouver to property and return (less than 20% of total)	\$210.00
Northern Mountain Helicopters (Bell 206) (less than 50% of total)	1,500.00
Linecutting - 10 miles @ \$180/line mile (includes base line extensions)	1,800.00
Soil sampling - 383 samples @ \$2/sample	766.00
Preparation and analysis (Mo & Cu) - 383 samples	804.30
Magnetometer survey - 8 miles @ \$125/line mile	1,000.00
Supplies - 5 men, 30 days @ \$10/man day	<u>1,500.00</u>
	\$7,580.30

Note - Writer's fee for organization, direction
and supervision of program, preparation
of report and draughting (\$3000) has not
been included.

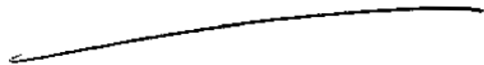
CONCLUSION

The geochemical work appears to indicate that the northernmost part of the area sampled may be economically interesting, particularly from the standpoint of molybdenum.

As noted above, an Induced Polarization survey is presently underway and no recommendation concerning future work on the BURN #1 group will be made until such time as the results of this survey have been received by the writer and an interpretation made.



W.R. Bacon, Ph.D, P.Eng.



CERTIFICATE

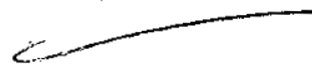
I, William R. Bacon, with business address at 1720 - 1055 West Hastings Street, Vancouver, British Columbia, DO HEREBY CERTIFY THAT:

1. I am a consulting geological engineer.
2. I am a graduate of the University of British Columbia with B.A.Sc. (1939) and M.A.Sc. (1942) degrees in Geological Engineering.
3. I am a graduate of the University of Toronto with a Ph.D (1952) degree in Economic Geology.
4. I have practised my profession for thirty-five years, mainly in Canada, South America and Australia. During the past twenty-five years, the majority of my time has been spent in British Columbia; it includes seven years (1949-56) as geologist with the B.C. Department of Mines.
5. I was Manager of the LUC Syndicate and hold in trust for the Syndicate the BURN #1 group of mineral claims. I am responsible for the undertaking of a geochemical survey and a magnetometer survey on the BURN #1 group, as outlined in the foregoing report.



W.R. Bacon, Ph.D, P.Eng.

Vancouver, Canada,
September 24th, 1975.



LUC SYNDICATE
BURN CLAIM GROUP
93N 6 & N
LOCATION OF GRID
(1" = 1/2 mile (approx.))

Burn #1
GROUP

Location
of Grid

Camp

5619
MAP 2

HA 2-	102	HA
10201M	102	1139

