

Geochemical Soil Survey  
Sup, Susap and Tom Mineral Claims  
49° 119° SW  
B.O. Brynelsen, P. Eng.  
J.D. Knauer  
Noranda Exploration Company, Limited  
Osoyoos Mining Division  
October 1, 1967 to October 8, 1967

82 E/4W

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GEOCHEMICAL SOIL SURVEY

SUP, SUSAP AND TOM MINERAL CLAIMS

49° 119° SW

B.O. BRYNELSEN, P. Eng.

J.D. KNAUER

NORANDA EXPLORATION COMPANY, LIMITED

OSOYODS MINING DIVISION

OCTOBER 1, 1967 to OCTOBER 8, 1967

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Noranda Exploration Company, Limited  
Geochemical Soil Survey  
of the  
Susap, Susap and Tom Mineral Claims

INTRODUCTION:

The Susap Creek Property includes 14 full-sized mineral claims and 1 fractional mineral claim. The property is located approximately 6½ miles south of Keremeos, B.C. between Hunter and Susap Creeks. The claims are accessible by Helicopter or by 3 miles of good trail from the Similkameen River valley. A helicopter was used to transport men and equipment and to supply the camp during the course of this survey.

Topography ranges from steep, smooth grassy slopes to near vertical rock bluffs. Maximum relief within the claim group is about 1800 feet.

The property was previously called the King Edward and is mentioned in the Annual Reports, Minister of Mines, British Columbia, 1903, page 175; 1922, page 178 and 1962, page 64.

Early work on the Susap Property consisted of 2 adits and blasting. In 1962 Chapman, Wood, and Griswold Ltd. conducted an Aftmag Survey for Friday Mines Ltd. Four x-ray holes were also drilled by Friday Mines Ltd. in 1962.

On September 28, 1967 Noranda Exploration Company, Limited acquired the Susap Creek Property through an option with Mr. J.E. Nott of Penticton, B.C. A grid was established and a soil survey conducted in an attempt to determine if the copper and molybdenum mineralization extended beyond known mineralization in areas covered by overburden. A control base line

extending north-south was established and stations were picketed at 100 foot intervals over 800 feet and at 200 foot intervals, both north and south on the remainder of the base line. Lines running east and west from the base line were established by chain and compass and marked by flagging and pickets. Two east-west lines on the north and on the south were spaced at 400 foot intervals and the remainder at 200 foot intervals north and south along the base line. Samples were taken at 200 foot intervals east and west with the exception of the center part of the grid where they were spaced at 100 foot intervals. A claim post, adits and creek were used in plotting the exact location of the grid. Work was done under the direction of B.O. Brynolsen, P. Eng., with field supervision by J.D. Knauer and a crew of two men. Results of the soil survey are plotted on a 1 inch to 200 feet base map. The soil survey was carried out from October 1, 1967 through October 8, 1967.

SUMMARY-CONCLUSIONS-RECOMMENDATIONS:

Sup 3, Sup 4, Sup 5, Sup 6, Susap 2 Fraction, Tom 2, Tom 7 and Tom 8 claims were covered by the soil survey to include the main area of interest, determined by previous work and extending in all directions from the exposed mineralized area. Determinations were run on all samples for copper and molybdenum. Results of this survey outlined the area of known mineralization. Values for both copper and molybdenum are anomalous in this area as indicated on the accompanying map. The molybdenum anomaly is more restricted and lies within the larger copper anomaly. There are four scattered

anomalous copper values outside the main anomaly. Copper values range from a background of less than 190 p.p.m. to anomalous values greater than 260 p.p.m. Molybdenum values showed a background of 0 - 2 p.p.m. to a maximum intensity of 350 p.p.m. Conclusions drawn from the results of this survey are:

1. Results show no extension of the mineralization beyond that which is already known,
2. No new areas within the boundaries of this survey were indicated that would be worthy of further investigation.

No further soil sampling is recommended in this immediate area at the present time. A study of the detailed geologic mapping in conjunction with this survey and the results of blasting and previous work will be done before any further work is recommended.

#### GENERAL GEOLOGY

The area consists of quartz monzonite and diorite of the Nelson Batholith, in addition to argillite and basalts. There are many dikes concentrated in the area of interest.

Mineralization consists of chalcopyrite, molybdenite, pyrite, and minor amounts of bornite. The mineralization is associated with intense fracturing, quartz veins and dikes.

#### GEOCHEMISTRY

All analyses for copper were made in the Noranda Exploration Company, Limited Laboratory located at 1050 Davie Street, Vancouver, B.C.

SAMPLING METHOD:

The samples were obtained by digging holes with a mattock and shovel, to a depth at which grey C Horizon was encountered. Two samples were taken in many instances where soil development was poor. In these cases both the B and C Horizons were sampled. Where good soil profiles were visible only the B Horizon was sampled. Occasional profiles were taken at certain points on the grid. The sampled material was then placed in "Hi Wet Strength Kraft, 3 1/2" by 6 1/8" Open End" envelopes and the grid station locations were marked on the envelopes with indelible felt pens.

LABORATORY DETERMINATION METHOD:

The samples are first hung in a dry cabinet for a period of 24 hours to 48 hours. They are then mechanically screened and sifted to obtain a -80 mesh fraction.

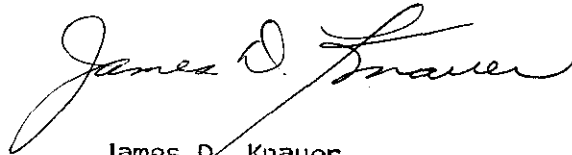
The determination procedure for total molybdenum is as follows: 0.1 gram sample of the -80 mesh material is fused with a sodium carbonate mixture. It is then dissolved in water (demineralized) and diluted to 10 ml. A 2 ml aliquot is shaken with 2 ml hydroxylamine hydrochloride solution and 0.5 ml. dithiol solution. The samples are then compared with colorimetric standards.

The determination procedure for total copper is as follows: 0.125 grams of -80 mesh material is fused with potassium bisulfate. This is dissolved in 5 ml. of 0.5N hydrochloric acid. A 2 ml. aliquot is shaken with 10 ml. acetate buffer and 1 ml. biquinolin solution. The samples are then compared with colorimetric standards.

RESULTS:

Values for copper showed a background of less than 190 p.p.m. to anomalous values of 260 p.p.m. and above. The copper anomaly lies in the center part of the grid. There are, in addition to the main anomaly, scattered high copper values on other parts of the grid. Molybdenum values range from a background of 0 - 2 p.p.m. with a maximum intensity of 260 p.p.m. The anomaly surrounds the main showing and lies within the copper anomaly. One additional sample site had anomalous molybdenum values in a profile taken at that location. Both the copper and molybdenum outline the zone of mineralization.

Respectfully submitted,

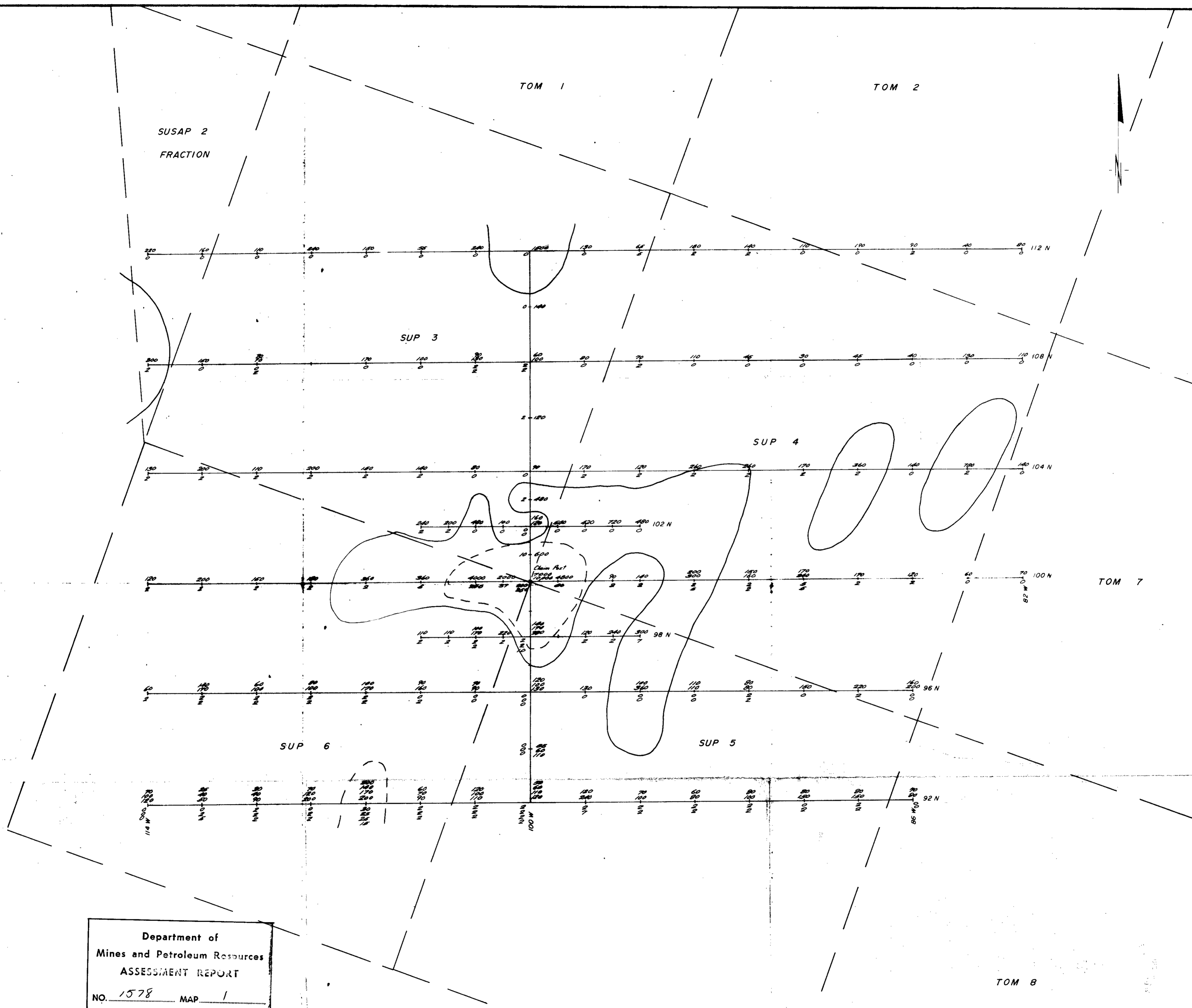


James D. Knauer  
Geochemical Co-ordinator



B.O. Brynelsen, P. Eng.





Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 1578 MAP 1

"To accompany Geochemical Survey Report by  
J. D. Knauer and B. O. Brynelsen, P. Eng. on  
the Susap Creek Property Mineral Claims, near  
Keremeos, Osoyoos Mining Division, B.C. dated  
July 3, 1968"  
*James D. Knauer*

*B. O. Brynelsen*

LEGEND  
 ~~~~~ Copper Anomaly  
 - - - - Molybdenum Anomaly

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SOIL READINGS  
 Ppm Total Mo | Ppm Total Cu

Noranda Exploration Company Limited  
 SUSAP CREEK PROPERTY  
 SOIL SURVEY