

# 4645

KENNCO EXPLORATIONS, (WESTERN) LIMITED

REPORT

ON

SOIL GEOCHEMICAL SURVEY

NUP No.'s 1, 2, 3, 4, & 5 Groups  
(NUP Mineral Claims 37-42, 44, 46, 55-74,  
96, 101-104, 111-126, 133-142, 160 Fr-163 Fr)

Situated 15 miles west of Turnagain Lake,  
Liard Mining Division  
British Columbia

---

Latitude 58°18'N; Longitude 129°35'W

	of
	Mineral Resources
	AGENCY REPORT
By	NO. <b>4645</b>

R.W. Stevenson, P.Eng.

August 8 to 14, 1973

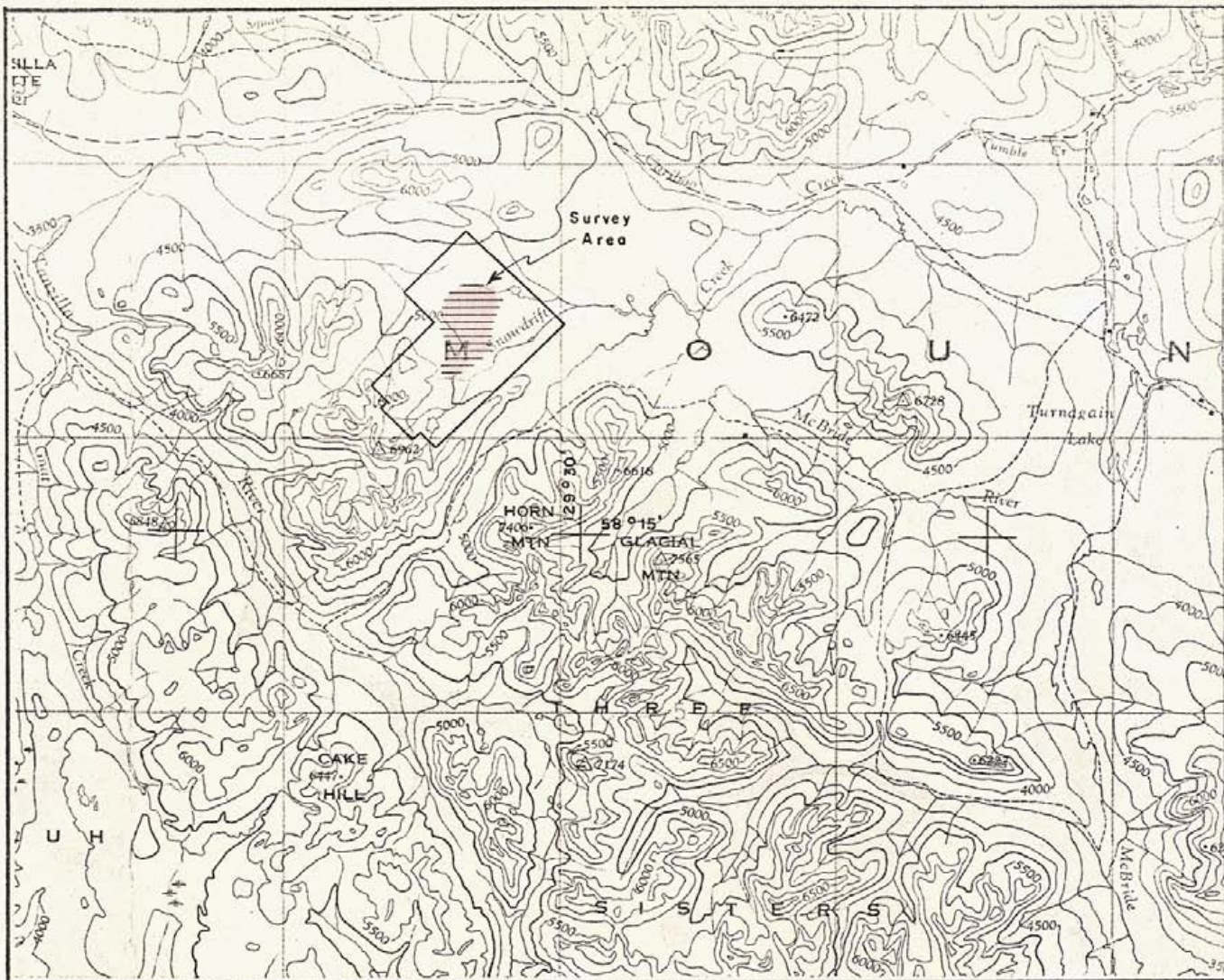
October 29, 1973

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
LOCATION AND ACCESS	2
SOIL SURVEY FIELD WORK	3
Control Survey Lines	3
Soil Sample Collection	3
Packaging	3
Sample Preparation	4
Analysis	4
INTERPRETATION	5
STATEMENT OF COSTS INCURRED	7

PLATES

#6 Location Map	1:250,000
#1 Plate No. 1 Copper & Molybdenum in Soil	1" = 400'
#2 Plate No. 2 Zinc and Lead in Soil	"
#3 Plate No. 3 Silver in Soil	"
#4 Plate No. 4 Nickel and Cobalt in Soil	"
#5 Plate No. 5 Soil Sample Sites	"



Keneco Explorations (Western) Limited

Department of  
Mines and Petroleum Resources

ASSESSMENT REPORT

Nup Claims

NO 4645 M.P. #6

Situated 15 miles west of Turnagain Lake  
Liard M. D., B. C.

Latitude 58° 18' N; Longitude 129° 35' W

Location Map

*R. J. Stevenson*

Scale : 1 : 250,000

Date : Sept. 28, 1973

INTRODUCTION

The mineral property discussed in this report is 15 miles west of Turnagain Lake, at the headwaters of Snow-drift Creek. The exploration work described herein consisted of a soil geochemical survey. The objective of the survey was to search for well mineralized areas beneath the extensive drift cover.

The personnel employed are listed in the 'Statement of Costs Incurred'. The work was done under the supervision of R.W. Stevenson, P.Eng. The grouping of the claims for application of assessment work is shown on Plate No. 5.

LOCATION AND ACCESS

The property is situated at Latitude 58°18'N; Longitude 129°35'W, about 20 miles southeast of the town of Dease Lake. It is at the headwaters of Snowdrift Creek, 15 miles west of Turnagain Lake. Most of the property drains into Snowdrift Creek, which is part of the Arctic Watershed; however, the west margin of the property drains into the Tanzilla River, which drains into the Stikine River and Pacific Watershed. Most of the property slopes down gently to the north, at elevations ranging from 4600' to about 5500'. Near the south edge of the property, the topography is more rugged, and elevations locally exceed 6500'.

Vegetation on the lower part of the property is characterized by broad expanses of mountain alder (*Alnus tenuifolia*). Scrub alpine fir (*Abies lasiocarpa*) grows in small patches, but does not form a significant portion of the vegetation cover. Several species of willow (*Salix*) occur in small shrubby clumps in wet areas. Grass grows in open areas among the mountain alder; a deep layer of moss is associated with the alpine fir. With increasing elevation, the mountain alder becomes stunted, and eventually gives way entirely to sparse grass.

There is considerable swamp near the northeast margin of the property. The steep slopes near the south margin of the property are well drained. The intervening area slopes gently but consistently to the north; however, the drainage pattern is frequently interrupted by the old beds of ice-edge streams and melt-water channels. There are rapid variations between swamps, moderately well drained knolls, and boulder patches. Recent local streams are not deeply incised. The beds of old melt-water channels commonly have a U-shaped cross-section, a few feet deep and a few tens of feet across.

There were two modes of access to the property. Frontier Helicopters Limited had a Bell 206-A helicopter based at Dease Lake, a 25-minute round trip flight to the property. This was generally used in flying personnel or fragile technical equipment to the property. A Bombardier Muskeg tractor was used for weekly supply trips to reach the Stewart-Cassiar road, 15 miles to the northwest of the property. The latter was also extremely useful in moving equipment and personnel on the property.

## SOIL SURVEY FIELD WORK

### Control Survey Lines

The survey grid had previously been established on the property for use in various geophysical and geochemical surveys. Assessment credit for it has been applied for separately. The grid Baseline has an azimuth of 45° astronomic and is termed grid north-south. The survey lines and analytical results are plotted at a scale of 1" = 400'.

### Soil Sample Collection

The samples were taken at 200-foot intervals along the grid lines, at odd-numbered chainage stations. This was done so as to avoid the possibility of copper sulphate contamination from the porous pots used to measure resistivity in a prior induced polarization survey. Even-numbered stations were read in the I.P. survey.

The samples were collected by digging a small hole with a spade. By this means it was possible to examine the soil horizon development. A note was made of the grid line location, the sample number, the depth of sample, the horizon sampled, the type of vegetation present, and the direction of drainage. A description of horizon development is given in the 'Interpretation'.

### Packaging

The samples were placed in 3" x 4 1/2" brown paper envelopes on which the sample numbers had been marked. These were closed with a triangular triple fold. (The bags are not anomalous in trace metals).

### Sample Preparation

The samples were taken to base camp, and partly air-dried. They were then shipped to our laboratory in North Vancouver, where they were oven-dried at 80°C, and sieved through an 80-mesh size stainless steel screen. (These sieves do not show noticeable wear even after several thousand samples have been sifted). The minus 80 mesh fraction was collected for all the analyses involved.

### Analysis

The samples were analysed in the North Vancouver laboratory of Kennco Explorations, (Western) Limited, under the supervision of H.R. Goddard, laboratory manager. Total extraction from a weighed sample is achieved by digestion with concentrated nitric acid and 70% perchloric acid. Determination of the Cu, Mo, Zn, Pb, Ag, Co, Ni content is made by aspiration in a Techtron AA5 Atomic Absorption Spectrophotometer.



### INTERPRETATION

The depth of overburden varies from about 10' to 20' over most of the property, with limited areas reaching depths of 50' (as indicated by diamond drilling, and resistivity depth profiling). A detailed description of topography and vegetation has been given in the section 'Location and Access' and for that reason is not repeated here. Soil profile development is fairly good, considering that the survey area is above tree-line. Two horizons are easily distinguishable. The humus zone is a dark, almost black, loam with varying amounts of contained humus; it is recorded as "A<sub>1</sub>". The limonitic zone is rusty brown, and is the zone of metal accumulation; it is recorded as "B". The chalky leached zone ("A<sub>2</sub>") that is so typical of podzol soils is lacking in the survey area. At some sample sites, a humus soil comprised predominately of quartz grains contains some evenly distributed limonite; it is recorded as "A<sub>1</sub>B". At other sites, a humus soil contains small pods of "B" zone material; it is recorded as "A<sub>1</sub> + B". It would have been preferable to collect all the samples from the "B" zone because it gives a better reflection of underlying metal content, the "A" zone being more subject to laterally transported anomalies. However, at some sites, the "B" zone could not be reached, and for this reason the horizon sampled was carefully noted and has been considered in the evaluation of the results. The vegetation present also provides a clue to the character of ground water conditions, and for that reason it has also been recorded. The mountain alder (*alnus tenuifolia*) that is the characteristic vegetation over much of the survey area prefers moist soil conditions, but even wetter soil is indicated by the several varieties of willow (*Salix*) that are locally present. Considering the various relevant conditions, soil sampling is a reliable technique on this part of the property if it is carefully interpreted.

The samples were analysed for total metal content in copper, molybdenum, zinc, lead, silver, nickel and cobalt. Sample stations that are considered to be background are uncoloured. Sample stations that are considered to be only weakly anomalous are coloured yellow. Sample stations that are definitely anomalous are coloured red. For molybdenum, an additional category is added; strongly anomalous sample stations are coloured



mauve. The weakly anomalous levels are 100 ppm to 200 ppm for copper, 10 ppm to 30 ppm for molybdenum, 200 ppm to 400 ppm for zinc, 40 ppm to 80 ppm for lead, 2.0 ppm to 4.0 ppm for silver, and 45 ppm to 90 ppm for cobalt. Nickel is not even weakly anomalous. Molybdenum values above 100 ppm are considered to be strongly anomalous. The results are plotted on Plates No. 1 to 4. Some elements are paired, where this is relevant to the interpretation, e.g. - Cu/Mo, Zn/Pb, Ni/Co. On these maps, the individual anomalous sample values are underlined in colour as well as colouring the corresponding side of the sample line. The sample numbers are plotted on Plate No. 5.

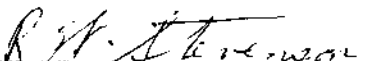
There is a broad molybdenum anomaly on the southwest quarter of the survey area. There are also four smaller anomalies, two of which cut across drainage slopes (on claims 57-64, and on 37-40). Copper is much less anomalous, but tends to be co-anomalous with molybdenum at the south end of the large anomaly (on claims 67-72).

Zinc, and to a lesser extent lead, are weakly anomalous in the general area of the copper anomaly, but the anomalous Zn-Pb values tend to be peripheral to the Cu-Mo anomaly. Only a few sites are anomalous in silver; however, background values are slightly elevated both within, and peripheral to, the Cu-Mo anomaly.

The low nickel values reflect the absence of ultra-basic rocks on the property. Nickel background is very slightly higher on the south half of the property where the underlying rocks are intermediate to basic volcanics, than on the north half of the property where the underlying rocks are acid intrusives. Cobalt shows a similar weak variation in background, and has a few scattered weakly anomalous sites on the south half of the property.

Vancouver, B. C.

October 29, 1973

  
R. W. Stevenson, P. Eng.

STATEMENT OF COSTS INCURRED

DOMINION OF CANADA: }  
 PROVINCE OF BRITISH COLUMBIA. }  
 To Wit:

**In the Matter of** a soil geochemical survey done  
 on Nup No. 1, 2, 3, 4 and 5 Groups of mineral claims  
 in August of 1973.

**I**, R.W. Stevenson for Kennco Explorations (Western) Limited  
 of Vancouver

in the Province of British Columbia, do solemnly declare that the cost incurred on assessment  
 work on the Nup No. 1, 2, 3, 4 and 5 Groups were as follows:

Wages & Board

R.W. Stevenson	August 8 -11	@ \$65.00 + \$10.00	\$ 300.00
J. Nuppenen	August 9 -11	@ \$40.00 + \$10.00	\$ 150.00
R.S. Lopaschuk	August 9 -11, 14	@ \$24.00 + \$10.00	\$ 136.00
D.R. MacKay	August 9 -11, 14	@ \$23.00 + \$10.00	\$ 132.00
Sample bags	456 X 4¢		\$ 18.24
Analysis	456 samples for Cu, Mo, Zn, Pb, Ag, Co, Ni		\$1,915.20
Typing & drafting report			\$ 180.00
TOTAL . . . . .			<u>\$2,831.44</u>

Amount spent of Nup No. 1 Group . . . . .	\$ 45.00
2 . . . . .	\$ 494.00
3 . . . . .	\$ 989.00
4 . . . . .	\$1,034.00
5 . . . . .	\$ 269.44
	<u>\$2,831.44</u>

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of  
 the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the *City*  
 of *Vancouver*, in the }  
 Province of British Columbia, this *4th* } *R.W. Stevenson*  
 day of *October, 1973*, A.D. }

*Jean Paul* Sub-mining Recorder  
 A Commissioner for taking Affidavits for British Columbia or  
 A Notary Public in and for the Province of British Columbia.





**LEGEND**

- Soil sample line
- A Humus soil zone
- A, B Humus soil with some evenly distributed limonite
- A, + B Humus soil with small pods of B zone material
- B Limonitic soil horizon
- o Mountain aspen (*Alnus tenuifolia*)
- W Willow (*Salix*)
- 1 Strongly anomalous
- 2 Anomalous
- 3 Weakly anomalous
- 4 Anomalous zone

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO 4645 MAP #1

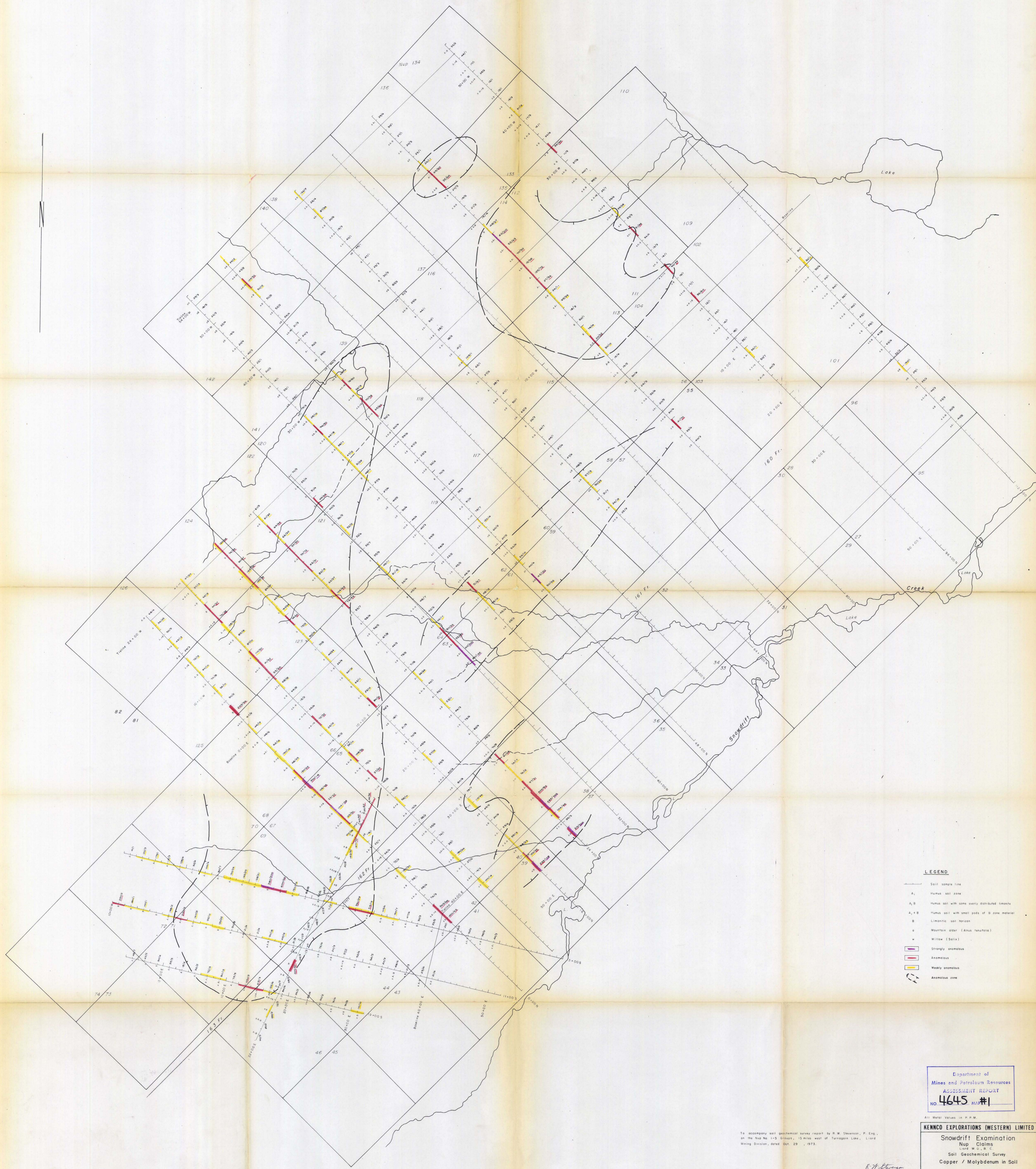
**KENCO EXPLORATIONS (WESTERN) LIMITED**  
Snowdrift Examination  
Nup Claims  
Soil Geochemical Survey  
Copper / Molybdenum in Soil

To accompany soil geochemical survey report by R.W. Stevenson, P. Eng.  
on the Nup No. 1-5 Groups, 15 miles west of Turquoise Lake, Lead  
Mining Division, dated Oct. 29, 1973.

4645 MI  
R.W. Stevenson  
Oct 29/73

DATE: R.W.S.	DATE: R.W.S.
SCALE: 1:10,000	DATE: Sept 72
PROJECT: 4645	DATE: 10/29/73
REVISION:	DATE:





- LEGEND**
- Soil sample line
  - A<sub>1</sub> Humus soil zone
  - A<sub>2</sub>B Humus soil with some evenly distributed limonite
  - A<sub>1</sub>+B Humus soil with small pods of B zone material
  - B Limonitic soil horizon
  - o Mountain silt (Alnus tenuifolia)
  - W Willow (Salix)
  - Strongly anomalous
  - Anomalous
  - Weakly anomalous
  - Anomalous zone

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 4645 MAP #1

All Metal Values in P.P.M.

**KENNCO EXPLORATIONS (WESTERN) LIMITED**

Snowdrift Examination  
Nup Claims  
Lard M.G., B.C.  
Soil Geochemical Survey  
Copper / Molybdenum in Soil

DATE: R.W.S. 1973  
DRAWN BY: 1478  
TOTAL SHEETS: 1478

To accompany soil geochemical survey report by R.W. Stevenson, P. Eng.,  
of the Nup No. 1-3 Claims, 10 miles west of Turquoise Lake, Lard  
Mining Division, dated Oct. 29, 1973.

R. Stevenson  
Oct 29/73





**LEGEND**

- Soil sample line
- A<sub>1</sub> Humus soil zone
- A<sub>2</sub> Humus soil with some evenly distributed limonite
- A<sub>2</sub>+B Humus soil with small odds of B zone material
- B Limonitic soil horizon
- o Mountain cedar (*Juniperus tenulifolia*)
- W Willow (Soils)
- Anomalous
- Weakly anomalous

7290/95  
280/40-289/44

**4645**

**M2**  
ASBESTOS  
ASSESSMENT REPORT  
NO. 4645 Map #2

KENNCO EXPLORATIONS (WESTERN) LIMITED

Snowdrift Examination  
Nup Claims  
Soil Geochemical Survey  
Zinc / Lead in Soil

To accompany soil geochemical survey report by R.W. Stevenson, P. Eng., on the Nup No. 1-5 Groups, 15 miles west of Turaggin Lake, Liard Mining Division, dated Oct. 29, 1973.

DATA BY: R.W.S. N.T.S. 1041-6 PL. NO. 2  
DRAWN BY: DATE: 10/29/73 SCALE: 1" = 400'  
TRACED BY: DATE: REVISIONS:

*R.W. Stevenson*  
Oct 29/73





- LEGEND**
- Soil sample line
  - A<sub>1</sub> Humus soil zone
  - A<sub>2</sub> Humus soil with some evenly distributed limonite
  - A<sub>1</sub>+B Humus soil with small pods of B zone material
  - B<sub>1</sub> Limonitic soil horizon
  - o Mountain alder (*Alnus tenuifolia*)
  - W Willow (*Salix*)
  - 748 Anomalous
  - 2.0-97 Weekly anomalous

**4645**  
**M3**

Department of  
Mines and Petroleum Resources  
**ASSESSMENT REPORT**  
NO. 4645 M. #3

All Metal Values in P.P.M.  
To accompany soil geochemical survey report by R.W. Stevenson, P. Eng.,  
on the Nup No. 1-5 claims, 15 miles west of Turgeon Lake, Lard,  
Mining Division dated Oct. 29, 1973.

**KENNCO EXPLORATIONS (WESTERN) LIMITED**  
Snowdrift Examination  
Nup Claims  
Lard M.D., B.C.  
Soil Geochemical Survey  
Silver in Soil

*R. W. Stevenson*  
Oct 29/73

DATE: R.W.S. 11/14/73  
DRAWN: 12/19/73  
SCALE: 1:50,000  
REVISIONS:





- LEGEND**
- Soil sample line
  - A<sub>1</sub> Humus soil zone
  - A<sub>2</sub>B Humus soil with some evenly distributed limestone
  - A<sub>2</sub>+B Humus soil with small pods of B zone material
  - B Limonitic soil horizon
  - o Mountain cedar (Atlas reticulata)
  - \* Willow (Salix)
  - Anomalous
  - Weekly anomalies

**4645  
M4**

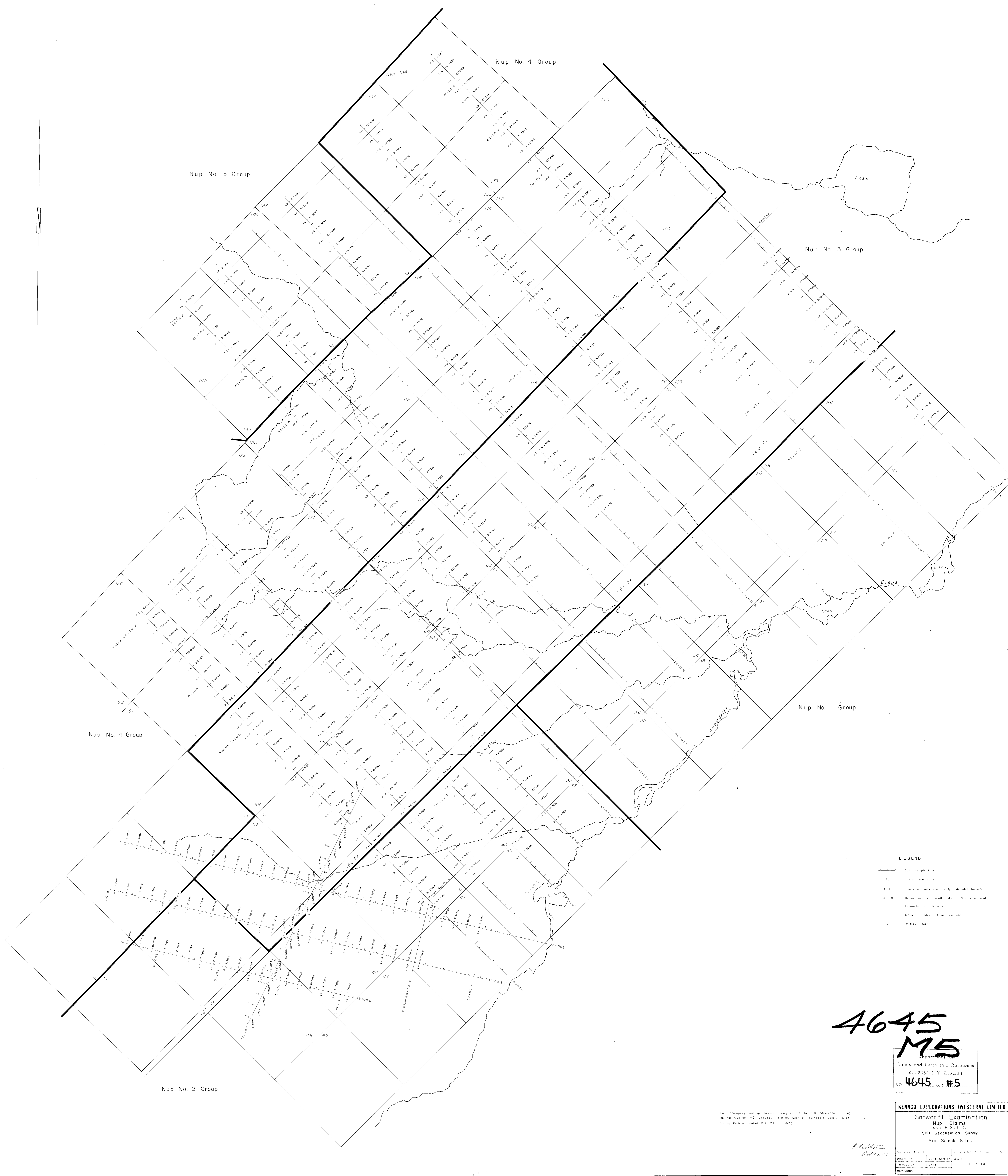
Department of  
Mines and Petroleum Resources  
**ASSESSMENT REPORT**  
NO 4645 MAP #4

All Metal Values in P.P.M.	
<b>KENCO EXPLORATIONS (WESTERN) LIMITED</b>	
Snowdrift Examination Nup Claims Lot 1-5 Group, 15 miles west of Turquoise Lake, Laird Mining Division, dated Oct. 29, 1973.	
DATA BY: R.W.S.	SCALE: 1" = 400'
DRAWN BY: [blank]	DATE: Sept 73
TRACED BY: [blank]	DATE: [blank]
REVISIONS: [blank]	

To accompany soil geochemical survey report by R.W. Stevenson, P. Eng., on the Nup No 1-5 Groups, 15 miles west of Turquoise Lake, Laird Mining Division, dated Oct. 29, 1973.

*R. Holtzman  
Oct 27/73*





**LEGEND**

- Soil sample line
- A<sub>1</sub> Humus soil zone
- A<sub>1</sub>+B Humus soil with some evenly distributed limonite
- A<sub>1</sub>+B+L Humus soil with small spots of limonite
- L Laminar soil horizon
- M Mountain order (Amus reniformis)
- W Willow (Saxi)

**4645**  
**M5**

Department of  
Mines and Petroleum Resources  
ACCESSIBILITY REPORT  
NO. 4645 #5

KENNCO EXPLORATIONS (WESTERN) LIMITED	
Snowdrift Examination Nup Claims Soil Geochemical Survey Soil Sample Sites	
DATE: 1-1-75	BY: R. W. STEVENSON
TRACED BY: [ ]	DATE: [ ]
REVISIONS:	

To accompany soil geochemical survey report by R. W. Stevenson, P. Eng., on the Nup No. 1-5 Groups, 15 miles west of Turquoise Lake, Laird Mining Division, dated Oct 29, 1973.