



GEOLOGICAL SURVEY AND DIAMOND DRILLING  
 REPORT ON RAM 1-10 CLAIMS (KRETT OPTION)  
 PRIMROSE LAKE AREA - WHITEHORSE MINING  
 DISTRICT - YUKON TERRITORY  
 LATITUDE: 60°12'N - LONGITUDE: 135°44'W  
 MAP SHEET: N.T.S. 105-D-4  
 Dates: June 10, June 16 - July 2, 1980  
 September 8, 12, 1981

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E. J. Debicki  
 District Geologist  
 B.C. and Yukon  
 Canadian Nickel Company Limited  
 December, 1981

09/1086

~~000000~~

CONFIDENTIAL

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This report has been examined by  
the Geological Survey Unit  
under Section 53 (4) Yukon Quartz  
Mining Act and is deemed as  
representative work in the amount  
of \$ ~~3200~~

*Walter cancelled  
Feb 4/82 RW*  
for Regional Manager, Exploration and  
Geological Services for Commissioner  
of Yukon Territory.

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## SUMMARY

The RAM 1-10 claim group is located approximately 44 miles southwest of Whitehorse, Yukon, on N.T.S. sheet 105-D-4. Access is by helicopter. The claims were optioned from Erwin Kreft to Canadian Nickel Company Limited on May 30, 1980.

The property covers a geological contact between northwest trending, pre-Mississippian Yukon Group limestone, siliceous schist-gneiss and small Tertiary quartz feldspar porphyry stock. Bordering the claim group, Cretaceous Coast Range intrusives are composed of hornblende-biotite granite.

Mineralization consists of lead-zinc-silver as sphalerite and galena disseminations, blebs or pods over an area of 900 feet by 600 feet within epidote-diopside-quartz-hydrogrossularite garnet carbonate skarn zones contained in the schist-gneiss near the intrusive contact. Anomalous lead, zinc, silver and copper values occur in a highly altered 600 foot by 400 foot portion of the Tertiary rhyolitic quartz feldspar porphyry stock.

The mineralization on the property was first discovered by E. Kreft in 1976. It was subsequently optioned to United Keno Hill Mines Ltd. during 1977-1979 who performed geological, geochemical and geophysical surveys and established seven trenches. Best chip-sample assays from the skarn zones were 8.04% Pb, 7.44% Zn, 1.87 oz/ton Ag over 3 feet (Occurrence I) and 1.49% Pb, 2.26% Zn, 1.08 oz/ton Ag over 10 feet (Occurrence H). Massive sphalerite at Occurrence A assayed up to 31.61% Zn and 0.43% Cd. These lenses do not exceed 50 feet in length. A coincident high Zn, minor Pb and Ag soil geochem. anomaly 2500 feet long by 400 feet wide was located over the mineralized zone. A limited geophysical survey located coincident I.P. and EM-16 anomalies parallel to strike which were attributed to graphite shears. No anomaly was located over the mineralization.

Work by Canadian Nickel Company Limited during 1980 consisted of re-establishing the UKHM grid, limited prospecting, and diamond drilling of one hole to a depth of 173 feet. A new, small mineralized skarn showing (Occurrence J) was located approximately 500 feet northwest of the known mineralization. A grab sample assayed 11.9% Pb, 11.2% Zn, 1.66 oz/ton Ag, 0.10% Cd and 0.12% W. Borehole 54321 undercut this mineralization as well as tested the I.P. anomaly. Best intersection was 15.9 feet of 3.73% Pb, 3.80% Zn, 0.74 oz/ton Ag within is contained an 8.2 foot section assaying 5.99% Pb, 6.40% Zn, 1.06 oz/ton Ag. A 1.8 foot section within the mineralized zone assayed 10.6% Pb, 10.4% Zn, 0.50 oz/ton Ag, 0.10% Cd and 0.126% WO<sub>3</sub>. All mineralization is hosted within an epidote-diopside-garnet-quartz carbonate skarn. The IP anomaly is attributed to graphite shears in the schist.

During 1981, detailed soil sampling was completed over the area of the known skarn showings. Results confirmed the UKHM anomalous results for lead, zinc, and copper. Tungsten values are negative and weakly anomalous molybdenum and cadmium values are randomly distributed. A 600 foot by 400

foot area of intense kaolinization, sericitization, carbonatization, silicification and shattering occurs within the Tertiary rhyolitic quartz feldspar porphyry. One sample ran 460 ppm Pb, 770 ppm Zn, 22.0 ppm Ag, and 4800 ppm Cu. The zone holds possible potential for epithermal vein stockwork Au-Ag deposits.

Further work in 1982 will consist of diamond drilling to test skarn Pb-Zn-Ag-Cd-W mineralization. The altered rhyolitic quartz feldspar porphyry will be evaluated by prospecting, detailed rock chip and soil sampling, geological mapping and diamond drilling to test the Au-Ag potential.

## INTRODUCTION

RAM 1-10 claims were acquired by Canadian Nickel Company Limited under an option agreement dated May 30, 1980 from owner Erwin Kreft. This followed a property examination on September 28, 1979 by the author who re-examined and resampled previously established trenches. During the latter part of 1979, samples collected were analysed, rock thin sections studied and geophysical data previously collected on the property re-evaluated. Following the optioning of the RAM 1-10 claims, one day was spent (June 10, 1980) re-establishing the grid and one 173 foot diamond drill hole was completed during the period June 16 - July 2, 1980. In 1981, two days were spent on the property completing a detailed soil grid over the area of the skarn mineralization and prospecting and rock-chip sampling the altered zone of the rhyolitic quartz feldspar porphyry. The results of 1980 and 1981 work are summarized in this report.

The RAM claims were formerly held under option by United Keno Hill Mines Ltd. during 1977-1979. A report by P. Watson and R. Joy dated January 25, 1979 filed for assessment, covers the exploration program by UKHM during their option. A summary of those results are included in this report.

Application for a Certificate of Work has been made only for the 1981 work. The 1980 work and results not filed for assessment credit, are included in this report.

## LOCATION AND ACCESS

The RAM claims (Map 1 and 2) lie approximately 44 miles southwest of Whitehorse, Yukon, and 2 miles northeast of Primrose Lake. They are situated at 60°12'N latitude and 135°44'W longitude on N.T.S. Sheet 105-D-4.

Access to the property is by helicopter from Whitehorse. Fixed-wing aircraft can land on Primrose Lake. Road access to within 20 miles east of the property is possible via the Annie Lake Road to the Wheaton River bridge.

During the course of the exploration the following helicopter companies were utilized to provide daily charter service from the Whitehorse airport to and from the property: LaVerendrye Helicopters, Buffalo Airways and Keystone Helicopters (1980) and Shirley Helicopters and Trans North Turbo Air (1981).

#### PROPERTY

The RAM claims consist of 10 contiguous claims (Map 2 and 3). The property lies within the Whitehorse Mining District. Owner of the property is Erwin Kreft, Takhini Hot Springs, P.O. Box 5150, Whitehorse, Yukon: phone (403) 633-2706.

<u>Claim Name</u>	<u>Grant Number</u>	<u>Record Date</u>	<u>Expiry Date</u>
RAM 1-2	YA8188 - YA8189	13 Sept. 1976	13 Sept. 1983
RAM 3-7	YA8220 - YA8224	28 Sept. 1976	28 Sept. 1983
RAM 8	YA19718	26 Aug. 1977	26 Aug. 1982
RAM 9-10	YA23042-YA23043	25 July 1978	25 July 1983

The claims are subject to an option agreement between Canadian Nickel Company Limited and Erwin Kreft dated May 30, 1980.

All ground surrounding the RAM claims is open.

#### PHYSIOGRAPHY

The claim group lies on the northern edge of the Coast Mountains. Local relief is about 2500 feet with elevations ranging from 3700 feet to 6000 feet. The mineralization is exposed at an elevation of about 5600 feet. The property is above tree-line, on a relatively smooth, gently-rolling upland surface. The valley wall on the southern portion of the claim group is steep, descending rapidly towards Primrose Lake.

#### HISTORY

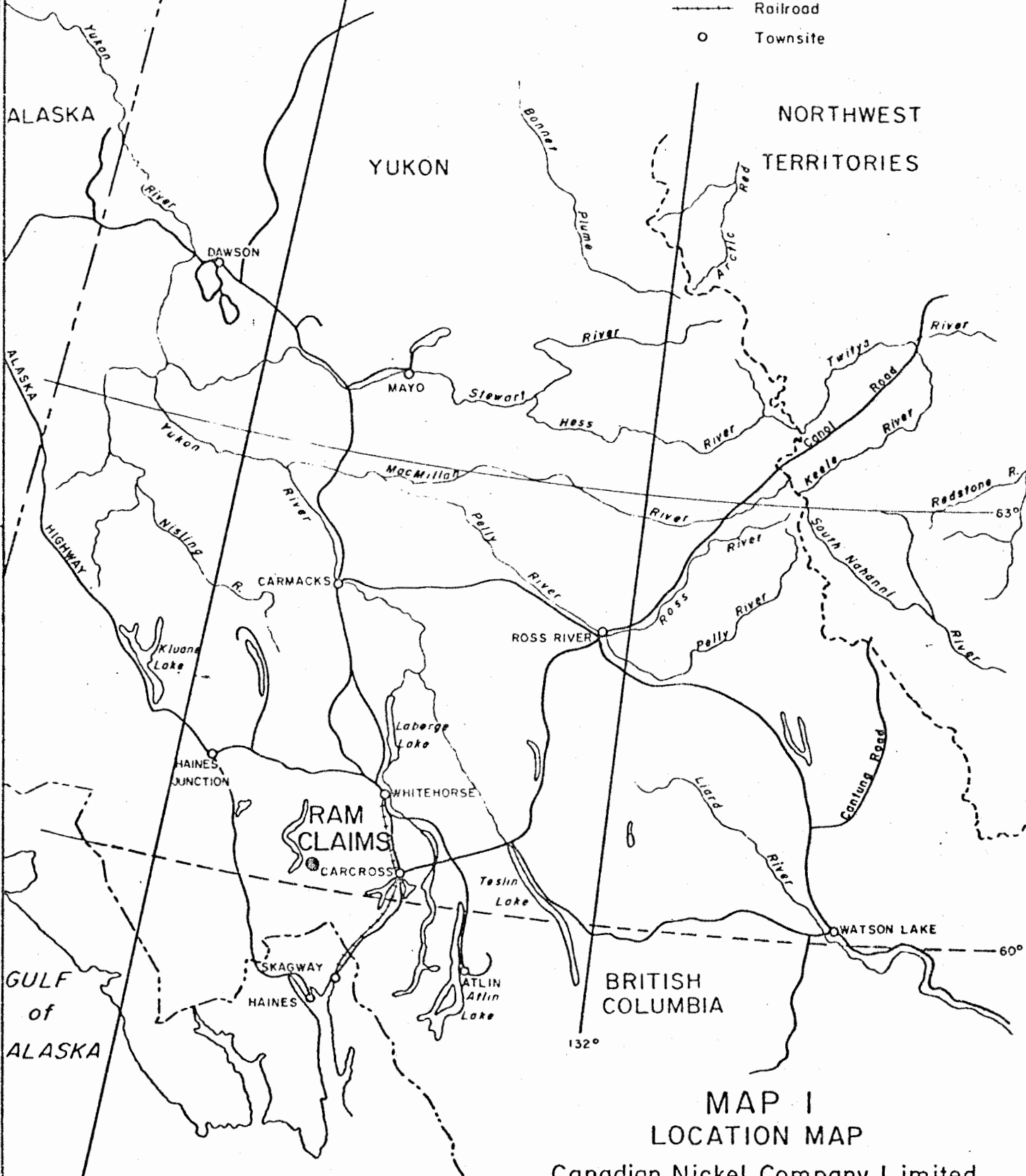
The mineralization on the RAM claims was discovered by Erwin Kreft in late August 1976 during a hunting expedition. RAM 1-2 claims were staked, with RAM 3-7 being staked several days later. Minor rock and soil geochemical sampling was completed by Kreft.

The claims were optioned to United Keno Hill Mines in July 1977 after initial field visits confirmed the presence of the lead-zinc-silver mineralization. During 1977 and 1978, UKHM carried out geological mapping, rock and soil geochemical sampling, limited I.P. and EM-16 geophysical surveys and seven trenches totalling 341 linear feet. The results of this exploration are contained in the UKHM assessment report dated January 25, 1979.

# SOUTHERN YUKON TERRITORY

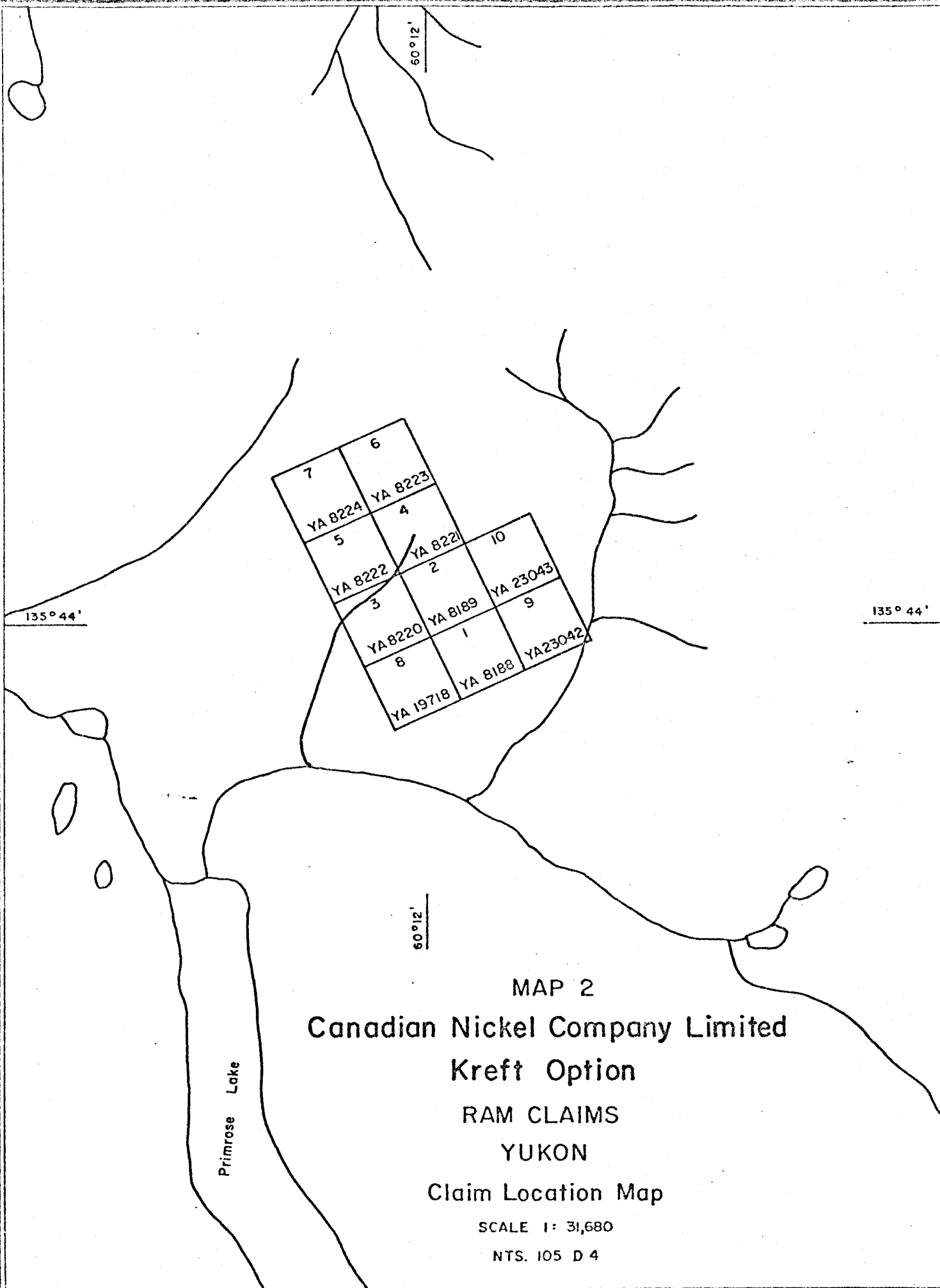
Scale 1 inch = 65 miles  
(~ 1:4,120,000)

- International Boundary
- - - - - Provincial Boundary
- Highway
- Railroad
- Townsite



MAP I  
LOCATION MAP

Canadian Nickel Company Limited  
RAM CLAIMS - KREFT OPTION - YUKON



MAP 2  
Canadian Nickel Company Limited  
Kreft Option  
RAM CLAIMS  
YUKON  
Claim Location Map

SCALE 1: 31,680

NTS. 105 D 4

Following a property examination on September 28, 1979, Canadian Nickel Company Limited optioned the RAM claims. Subsequent exploration consisted of grid re-establishment (12.4 km), limited prospecting and diamond drilling of one 173 foot hole in 1980. During 1981, a detailed soil sampling program, geological mapping and rock-chip sampling was completed.

#### GEOLOGY AND STRUCTURE

The regional geology of the area is summarized by G.S.C. Map 1093A, Geology Whitehorse, scale 1:253,400, and more recently by D.I.A.N.D. Open File EGS 1979-6, Metallogenic Map, Whitehorse Map Area, scale 1:253,440.

Geologically, the property is underlain by three main rock units: pre-Mississippian Yukon Group metasediments, Cretaceous Coast Range intrusives and late Tertiary intrusives. The Yukon Group metasediments consist of north-west-trending, steeply dipping siliceous schists and gneisses (Unit PLPsn) and limestone (Unit PLPc). Hornblende-biotite granodiorite of the Coast Range intrusives (Unit Mlgd) occurs in the southwest corner of the RAM claims. Late Tertiary intrusives (Unit lTgp) consists of (quartz feldspar rhyolitic) porphyry stocks and narrow dikes.

Detailed descriptions of each of the rock units are given in the UKHM report.

Recent work completed by P. H. Watson, has determined Rb-Sr whole rock age dates for foliated granite of the Coast Range intrusives at 143-200 Ma while K-Ar dates for hornblende and biotite from a granodiorite are  $106 \pm 4$  Ma and  $53.7 \pm 1.9$  Ma, respectively. An Eocene porphyritic microgranite stock (Tertiary quartz feldspar porphyry) yielded a Rb-Sr whole rock age date of 43 Ma and has probably reset the biotite K-Ar date in the Coast Range intrusive granodiorite.

The structure of the area as exemplified by the foliation is predominantly northwest-striking. Dips are variable but generally are steeply-dipping northeast and southwest on the RAM claims. Complex folding occurs in the metasediments. A mapped NW-SE striking anticlinal axis transects the claim group. Small faults or shears cross-cut the strike of the metasediments. Faults are best exposed in the creek beds where outcrop is abundant. The claims lie on a southwest-facing slope.

The contact between the Tertiary quartz feldspar porphyry and Yukon Group metasediments is sharp, steep and slightly irregular, with some brecciation. Only minor foliation was noted in the intrusive.

Map 3 - Compilation Map, scale 1 inch = 400 feet summarizes the geology, geological formations, structure and location of mineral occurrences and trenches on the property.

## MINERALIZATION

Two types of mineralization were noted on the RAM claims by the author. All exploration by Canico during 1980 and 1981 was confined to the immediate area of the showings.

### (a) Zinc-Lead-Silver

Zn-Pb-Ag mineralization is restricted to epidote-diopside-quartz-hydro-grossularite garnet carbonate skarn zones within two roughly parallel bands trending northwesterly in the Yukon Group metasediments. Occurrences A, B, D and G occur along contact between limestone (Unit PLPc) and biotite-quartz schist and biotite-quartz-feldspar gneiss (Unit PLPsn). Occurrences C, H and I occur within the more northerly zone in biotite-quartz schist and biotite-quartz-feldspar gneiss (Unit PLPsn). The mineralized occurrences cover an area approximately 900 feet in strike length and 600 feet in width. All occurrences are near the contact with the Tertiary quartz feldspar porphyry and Cretaceous Coast Range intrusive granodiorite.

Red-brown, coarse-grained sphalerite is the predominant sulphide with minor amounts of argentiferous galena. The mineralization occurs mainly as disseminations or blebs and massive lenticular pods parallel to the north-west foliation. Individual mineralized zones are narrow (less than 10 feet) and do not exceed 50 feet in length. Sphalerite is locally very massive, with grades up to 31.61% Zn and 0.43% Cd in grab sample (Trench VII, Occurrence A - Discovery Zone). Seven trenches tested the extent and grade of mineralization. Best assays from chip-sampling were 8.04% Pb, 7.44% Zn, 1.87 oz/ton Ag over 3 feet (Trench IV, Occurrence I) and 1.49% Pb, 2.26% Zn and 1.08 oz/ton Ag over 10 feet (Trench I, Occurrence H). A previously unreported occurrence (Occurrence J) was located on Section 33+00 NW at 3+85 NE, approximately 5 feet in front of the diamond drill hole collar which undercut this mineralization. Surface exposure consists of a 10 foot by 10 foot rubble crop containing skarn within the Unit PLPsn schist with bedded sphalerite and galena. Assay of a grab sample ran 11.9% Pb, 11.2% Zn, 1.66 oz/ton Ag, 0.10% Cd, and 0.52% Ba. The 1:1 Pb:Zn ratio with 1-2 oz/ton Ag is reminiscent of Yukon syngenetic shale-hosted lead-zinc-silver deposits. The texture is completely metamorphic.

Reports (personal communication) that a Union Carbide regional stream sediment geochemistry produced tungsten geochemical anomalies around the RAM claims, prompted analysis of the skarn samples for  $WO_3$  in 1980 and detailed soil sampling over the area of the mineralized skarn showings. Highest rock value was 0.12% W from Occurrence J. Soil results are discussed elsewhere in the report.

### (b) Gold-Silver

A Tertiary quartz feldspar porphyry stock outcrops along the south-facing steep valley wall on the south end of the RAM claim group. It is highly gossanous.

Within the quartz feldspar porphyry (QFP), a 600 foot by 400 foot zone of rhyolitic breccia is highly kaolinized (clay alteration) and sericitized. Locally the rhyolitic QFP is brecciated with fragments of microgranophyre, fine to medium grained albite phenocrysts, minor quartz, traces of biotite and devitrified glass commonly with spherulitic textures. The matrix consists of pulverized rock and mineral flour. Hydrous oxide patches and carbonate veinlets are abundant. Quartz veining and intense shattering (?) are common. The alteration in sharp contact with unaltered QFP, may potentially be associated with precious metals cauldron-related mineralization (epithermal vein-stockwork Au-Ag type) within a rim fracture of the Skukum cauldron complex. The cauldron is interpreted to be centred at Mt. Skukum, approximately 10 miles to the east.

Three rock chip sampling lines (lines A, B, C) were completed across the altered QFP. The location of the lines is plotted on Figure 3, Compilation Map. Lead, zinc, silver and copper values are anomalous and are tabulated in Appendix B. The highest values were associated with a malachite stained 10-12 foot wide fracture zone with manganese stain. Values are up to 460 ppm Pb, 770 ppm Zn, 22.0 ppm Ag and 4800 ppm Cu. Mo, W and Cd values were negative. Gold analyses are not available.

Approximately 1,000 feet topographically below the QFP alteration zone a blocky breccia consisting of chunks of amygdaloidal lava, feldsparphyric lava of dacite or andesite composition is caught up in a felsite matrix. About 100 feet lower down, the felsite noted above turns into a holocrystalline medium grained equigranular granite with the lava blocks losing their primary texture. This is interpreted as a volcanic throat with multiple hyabysal intrusions composed of an early QFP and later xenolithic granite blocking a dacite lava tube.

Soil geochemistry by UKHM over the quartz feldspar porphyry stock returned high values of 1260 ppm Cu, 14 ppm Mo and 520 ppm Cu, 17 ppm Mo from two sample sites. The highest Mo value was 36 ppm from a rock sample.

Analytical results of rock samples collected during the 1979 property examination and 1981 field program are attached as Appendix B. Thin section and polished section reports are attached as Appendix C. All analyses for samples tabulated in Appendix B were carried out by Bondar Clegg and Company Limited, Whitehorse, Yukon laboratory utilizing standard atomic absorption for geochemical analysis or XRF for assay analysis.

## SOIL GEOCHEMISTRY

### (a) Introduction

Soil geochemistry on a 100 x 100 foot or 200 x 200 foot grid, carried out by UKHM, delineated a soil geochemical anomaly trending northwest and paralleling foliation, 2500 feet long by 500 feet wide. The mineralization located in trenching occurs on the south end of the soil geochemical anomaly.

Maximum values are 5050 ppm Zn, 1160 ppm Pb and 9.5 ppm Ag. Pb, Zn and Ag are coincident with Zn displaced slightly downslope relative to Pb and Ag exhibiting random, sporadic highs within the anomalous zone.

During 1981, Canadian Nickel completed a detailed soil sampling survey over the area of the skarn Pb-Zn-Ag mineralization. The purpose of the survey was to evaluate the tungsten potential. Lead, zinc, silver, molybdenum, copper and cadmium were analyzed in addition to tungsten. One hundred soil samples were collected on lines at 200 foot intervals and one hundred foot spacing along each line. A detailed area 1400 feet by 1000 feet was covered. Soil samples were collected on fifty foot spaced lines and fifty foot spacing between 32+00NW - 34+00NW and 2+50NE - 5+00NE to cover the locality of Occurrence J.

The location of the soil samples is plotted on Map 4. Soil results for Pb, Zn, Cu, Ag, W, Mo and Cd are plotted as Maps 5a to 5g, respectively. UKHM soil results are also plotted on these maps for comparison purposes.

(b) Results

The lead, zinc, copper and silver values confirm and correlate with the UKHM results. Two distinct zones of anomalous results, trending roughly parallel to strike, indicate the two zones of skarn Pb-Zn-Ag mineralization, i.e. north zone - Occurrences J, H, I, and C and South zone - Occurrences G, B, A and D. Each zone is approximately 200 - 300 feet wide.

Lead values range from 10 to 1800 ppm with the high value coincident with Occurrence J.

Zinc values range from 60 to 6700 ppm with the high value also coincident with Occurrence J. A value of 6000 ppm Zn occurs immediately downslope from Occurrence A, a sphalerite-rich showing.

Copper values range from 18 to 470 ppm with the highest values over the south zone of mineralized occurrences. A value of 106 ppm Cu coincident with Occurrence J is the highest value in the north zone.

Anomalous Ag values distinguish the north and south zones. An isolated value of 16.0 ppm occurs approximately 200 feet south of occurrence C where no mineralization is known. A value of 4.5 ppm Ag occurs over Occurrence J. Lowest values on the grid were less than 0.1 ppm Ag.

Tungsten is not anomalous with a highest value of 12 ppm. Most of the values are below detection limits (less than 2 ppm). The survey failed to detect tungsten mineralization associated with Occurrence J.

Molybdenum shows a random distribution with a high value of 7 ppm.

Cadmium occurs primarily over the north and south zones of the mineralized occurrences. Values of 28 ppm Cd in the north zone and 112 ppm Cd in the south zone are coincident with Occurrences J and A, respectively. Most values were less than 1 ppm Cd.

The soil sample survey primarily carried out to determine the W distribution failed to detect the existing or additional tungsten mineralization.

## GEOPHYSICS

A limited amount of I.P. and EM-16 by UKHM, was run over the soil geochemical anomalous zone in an area of sparse outcrop and upslope from the known mineralization located in the trenches. The I.P. survey outlined a strong, trough-shaped, northwest-trending conductive zone 2000 feet long (open to the northwest) and 600 feet wide. The results of these surveys re-evaluated by Canico, concurred with the UKHM conclusions; namely:

- two parallel zones trending NW-SE, roughly parallel to foliation; the two zones represent the parallel limbs of an anticline with a parallel syncline to the NE.
- the SW anomaly has good correlation of I.P. and resistivity; the strongest part of the anomaly is between 32+00 NW and 38+00 NW (600 feet), is open to the NW and can be traced another 400 feet to the SE. Width of the strongest part of the anomaly is about 100 feet. A limited VLF survey by UKHM on lines 38+00 NW and 42+00 NW located a definite conductor which correlates with the I.P. anomaly. This anomaly was drill tested by Canadian Nickel and explained as graphite shears.
- the NE anomaly is weaker and not as well developed. It indicates a possible syncline and as a result the polarized material occurs at a shallower depth.

## DIAMOND DRILLING

### (a) Introduction

A Canadian Nickel Company Limited J. K. Smit Superwinkie diamond drill, drilled one 173 foot hole during the period June 16 - July 2, 1980. The hole was collared at 33+00 NW/3+80 NE to a depth of 173 feet. A Canico four man crew operated on two 10 hour shifts. Numerous delays were encountered due to mechanical problems, awaiting parts and stringing of additional water-line as spring run-off subsided downhill. The hole was drilled with AQ core size.

The drill was trucked from Whitehorse to the Wheaton River bridge on the Annie Lake Road. From here a helicopter slung the drill 16 miles to the property. Demobilization of the drill occurred under the same procedure but in reverse order. Crew changes were on a shift basis utilizing a helicopter from the Whitehorse base.

The diamond drill core was logged and sections for analysis split. Analysis for Pb, Zn, Ag, Cu, Cd and  $WO_3$  was carried out utilizing XRF techniques by the Canico Copper Cliff Exploration Assay Laboratory.

The diamond drill core (Borehole 54321) is presently stored at H. Bostock Core Library, a Department of Indian Affairs and Northern Development facility in Whitehorse.

(b) Results

Borehole 54321 was drilled to depth of 173 feet at a dip of  $50^\circ$  NE. The hole intersected Yukon Group (Lower Paleozoic) schist and gneiss of the PLPsn<sub>1</sub> unit with local sections of mineralized and unmineralized skarn. The UKHM southwestern I.P. anomaly was intersected and explained as graphite shears at 106.1 to 108.4 feet (35-40% graphite) and 169.9 to 170.0 feet (50-60% graphite). The skarn zones occur throughout the hole with the thickest at the top of the hole, being 15.9 feet and well mineralized. This quartz-diopside-garnet epidote-carbonate skarn contains variable amounts of red-brown sphalerite and galena. Assays of drill core returned a 15.9 foot section of 3.73% Pb, 3.80% Zn and 0.74% oz/ton Ag within which is contained a 8.2 foot section of 5.99% Pb, 6.40% Zn and 1.06 oz/ton Ag. These intersections are drill widths. The mineralization is a diamond drill undercut of a surface showing (Occurrence J) from which a grab sample assayed 11.9% Pb, 11.2% Zn and 1.66 oz/ton Ag. This occurrence is open in all directions although surface indications are restricted to a 10 foot by 10 foot rubble outcrop. Within the mineralized skarn zone a 1.8 foot section assayed 10.6% Pb, 10.4% Zn, 0.50 oz/ton Ag, 0.10% Cd and 0.126%  $WO_3$ .

A copy of the diamond drill log with assay results is attached as Appendix A. A borehole profile of section 33+00 NW is plotted on Figure 1.

CONCLUSIONS AND RECOMMENDATIONS

Mineralization on the RAM claims consists of two types. The first type is predominantly galena and sphalerite as disseminations, blebs and massive pods within epidote-diopside-garnet-quartz carbonate skarn lenses. These skarn lenses and bands are hosted by Yukon Group schists and gneisses, pre-Mississippian in age, near the contact with Tertiary quartz feldspar porphyry and Cretaceous granodiorite intrusions. Exploration to date has failed to locate economic proportions of lead and zinc in the surface exposures of the mineralized skarns which are generally less than 10 feet in width and 50 feet in length. However one diamond drill hole indicates that economic grade lead-zinc-silver with minor cadmium and tungsten occurs below surface to a vertical depth of at least twenty feet on Occurrence J. None of the the other seven mineralized skarn zones have been tested below surface. Best potential is considered to be Occurrence A (massive sphalerite) and J (galena, sphalerite with minor silver, cadmium and tungsten).

Diamond drill testing of the I.P. anomaly immediately north of the mineralization has been explained as graphite shears within the schist-gneiss. The anomalies are of no further interest.

The second type of mineralization consists of anomalous Pb, Zn, Ag and Cu values associated with a highly altered rhyolite breccia within the Tertiary quartz feldspar porphyry stock. This target is possibly related to a rim fracture of the Skukum cauldron. Potential exists for epithermal vein-stockwork precious metal (Au-Ag) mineralization.

Exploration in 1982 will consist of diamond drilling to test the skarn Pb-Zn-Ag-Cd-W mineralization. The altered rhyolitic quartz feldspar porphyry will be prospected, detail rock-chipped and soil sampled with subsequent geological mapping and diamond drilling to test the Au-Ag potential. The RAM claim block will be expanded to 58 claims to protect the remainder of the Tertiary quartz feldspar porphyry stock.

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APPENDIX A  
DIAMOND DRILL LOGS & ASSAYS  
BH 54321

## BOREHOLE RECORD

DATE PROCESSED OCT 11, 1980

\*\*\*\*\*

GRID

CHK'D.....

BOREHOLE# PROPERTY NTS# SH# ANGM# DEPTH AZIMUTH BEARING DIP ELEVATION LATITUDE DEPARTURE  
 54321-0 RAM CLAIMS 105 0 4 0C173 C30 00 045 00 -50 00 5460 N003300 E000300 DATE.....  
 LOGGED BY...E J DEBICKI STARTED...JUNE 16, 1980 COMPLETED...JULY 02, 1980 ASSAY FOR...PBZN1AGCUCDHO3

## INCLINATION AND TROPARI TESTS

DEPTH AZIMUTH DIP DEPTH AZIMUTH DIP DEPTH AZIMUTH DIP DEPTH AZIMUTH DIP

## COMMENTS

DRILLED AQ CANICO SUPERWINKIE CLSCN & KAITLA, 120 FEET SOUTH  
 AND 650 FEET WEST OF POST 1, RAM 2, GRANT NO. Y8189, 9 FEET NW  
 CASING LEFT IN HOLE

## SAMPLE ENTRIES

DEPTH	LENGTH	SAMPLE#	MNZN	ROCK	DESCRIPTION	ANG	PB	ZN	AG	CU	CD	W03
0000.0	0.0				COLLAR							
0006.0	6.0				AW CASING TO 9 FEET IN BROKEN BEDROCK							
0006.6	0.6		SCH		K, START OF CORE QUARTZ FELDSPAR MICA SERICITE SCHIST 45							
0014.3	7.7	FX029248	SKN		LIGHT GREY, FOLIATED, SLIGHTLY CALCAREOUS & SKARNIFIED, MINOR DIOPSIDE, QUARTZ, DIOPSIDE, MINOR GARNET, EPIDOTE, CARBONATE SKARN, WEAKLY FOLIATED 45	1.320	1.020	0.400	0.010	0.006	0.028	
0017.2	2.9	FX029249	MVW	SKN	URSTY HEMATIZED FRACTURES AS TO 14.3, 1-2% GALENA SPHALERITE AS EQUIGRANULAR BLEBS, SPHALERITE	5.510	5.770	0.500	0.085	0.031	0.086	
0019.0	1.8	FX029250	MW	SKN	RED-BROWN, TRACE SPECKS SCHEELITE 14.3-16.0 VERY RUSTY, HIGHLY BROKEN 16.5-16.8 8-10% GALENA SPHALERITE	10.600	10.400	0.500	0.056	0.100	0.126	
0022.5	3.5	FX029251	MVW	SKN	AS TO 14.3, 25-30% GALENA SPHALERITE AS EQUIGRANULAR BLEBS & CLOTS AVERAGING 0.1 TO 0.2 INCHES IN DIAMETER, SPECKS SCHEELITE UP TO 1%	50	4.020	4.970	1.800	0.016	0.045	0.034
0026.0	3.5	FX029252	GN		AS TO 14.3, 1-2% GALENA SPHALERITE E MAINLY AS SULPHIDE RICH BANDS PARALLEL TO FOLIATION, SECTION VERY RUSTY WITH SULPHIDE BLEBS VERY OXIDIZED, SPECKS SCHEELITE LESS THAN 1%	50	0.025	0.300	0.000	0.004	0.005	0.030
0035.9	9.9		GN		BANDED QUARTZ FELDSPAR SERICITE MICA GNEISS-SCHIST, LOCAL QTZ VEINS, SLIGHTLY CONTORTED FOLIATION, 50% LOST CORE, LOCAL SECTIONS GARNETIFEROUS, LOCAL SECTIONS MICA-RICH, MINOR FRACTURING.	75						
0038.1	2.2		QTZ		AS TO 26.0, LOCAL SECTIONS VERY GNEISSIC.							
0044.8	6.7		GN		QUARTZ VEIN, WHITE, MASSIVE, 50% LOST CORE	60						
0045.9	1.1	FX029253	SKN		AS TO 26.0	60						
0056.4	10.5		GN		AS TO 14.3, NON-CLACAREOLUS	50	0.017	0.056	0.100	0.004	0.001	0.021

DEPTH	LENGTH	SAMPLE#	MNZN	ROCK	DESCRIPTION	ANG	PB	ZN	AG	CU	CO	W03
0059.6	3.2			SCH	QUARTZ MICA SCHIST, MINOR QUARTZ RIC H LAMINATIONS & BANDS, STRONGLY SCHI	50						
					STOSE, LOCAL SECTIONS GRADING TO GNEISS, MINOR QTZ STOCKWORK							
0072.0	12.4			GN	AS TO 26.0, 64.4 TO 71.0, 80% LOST	65						
0087.5	15.5			SCH	CORE, LOCAL QUARTZ MICA SCHIST BANDS							
0087.9	0.4			QTZ	AS TO 59.6	65						
0105.1	17.2			GN	QUARTZ VEIN, WHITE, SUGARY							
					AS TO 26.0, FAULT 92.6 TO 93.3, QUAR TZ VEIN WITH MINOR SERICITE AT 96.9							
0106.1	1.0			GRDR	TO 97.1, CONTORTED FOLIATION, 101.3 TO 105.1 HIGHLY MICACEOUS							
					GRANODIORITE VEIN, QUARTZ FELDSPAR MUSCOVITE BIOTITE, LIGHT GREY, MASSI VE, SHARP CONTACTS							
0108.4	2.3			GN	AS TO 26.0, HIGHLY FRACTURED & SHEAR ED, 35-40% GRAPHITE							
0115.2	6.8			GN	QUARTZ, FELDSPAR, MINOR MICA, QUARTZ RICH AND MICA RICH BANDS, LIGHT GREY LOCALLY VERY SLIGHTLY CALCAREOUS, STRONGLY FOLIATED							
0115.7	0.5			GN	AS TO 26.0	65						
0122.5	6.3			GN	AS TO 115.2	60						
0123.1	0.6			GN	AS TO 26.0	60						
0127.1	4.0			GN	AS TO 115.2, WEAKLY DEVELOPED CARBO NATE SKARN BAND 126.0 TO 126.4	65						
0130.0	2.9			SCH	AS TO 59.6	60						
0130.6	0.6			GRDR	AS TO 106.1, SHARP CONTACTS, MASSIVE							
0144.2	13.6			GN	AS TO 26.0, LOCAL CONTORTED FOLIATIO N	65						
0145.7	1.5			GN	AS TO 115.2, LOCAL BIOTITE RICH BAND S	60						
0146.2	0.5			GN	AS TO 26.0	60						
0152.8	6.6			GN	AS TO 115.2	65						
0161.1	8.3			GN	AS TO 26.0, LOCAL RUSTY 1-2 INCH BULL QUARTZ VEINS	65						
0162.8	1.7	FX029254		SKN	QUARTZ EPIDOTE DIOPSIDE CARBONATE SKARN, MINOR GARNET, MASSIVE TO WEAKLY FOLIATED, UNIFORM APPEARANCE THROUGHOUT, SHARP CONTACTS	65	0.053	0.400	0.200	0.001	0.005	0.021
0163.7	1.1			GN	AS TO 115.2	70						
0165.1	1.2			GN	AS TO 26.0							
0169.9	4.8			SCH	AS TO 59.6, INCREASING GRAPHITIC LAMINAE TOWARDS BOTTOM OF ENTRY	70						
0170.0	0.1			SCH	GRAPHITE SCHIST, 50-60% GRAPHITE, SHEAR ZONE							
0170.5	0.5			SCH	AS TO 59.6	70						
0171.1	0.6			SCH	AS TO 59.6 WITH 50-60% GRAPHITE SCHI ST BANDS OVERALL GRAPHITE CONTENT 5-6% OF ENTRY	70						
0173.0	1.9			SCH	AS TO 59.6 FOOT OF HOLE HOLE INTERSECTED YLCON GROUP (LOWER PALAEZOIC) SCHIST AND GNEISS WITH LOCAL SECTIONS MINERALIZED (GALENA							

DEPTH	LENGTH	SAMPLE#	MNZN	ROCK	DESCRIPTION	ING	PB	ZN	AG	CU	CD	W03
					SPHALERITE SCHEELITE) AND UNMINERALI ZED SKARN ZONES ADJACENT TO CPETAGED US AND TERTIARY INTRUSIVES IP ANOMALY EXPLANATION* GRAPHITE SHEAR ZONES AT 106.1 TO 108.4, (35-40 %) AND 169.9 TO 170.0 (50-60%)							

FOR THIS HOLE, ASSAYS OF THE FOLLOWING ELEMENTS HAVE BEEN RECEIVED..AG, CD, CU, PB, W, ZN

BOREHOLE SUMMARY  
\*\*\*\*\*

FOCTAGE	MNZN	ROCK
0006.0		
0006.6		SCH
0014.3		SKN
0017.7	MYW	SKN
0019.0	MYW	SKN
0022.5	MYW	SKN
0025.9		GN
0038.1		QTZ
0044.8		GN
0045.9		SKN
0056.4		GN
0059.6		SCH
0072.0		GN
0087.5		SCH
0087.9		QTZ
0105.1		GN
0106.1		GRDR
0127.1		GN
0130.0		SCH
0130.6		GRDR
0161.1		GN
0162.8		SKN
0165.1		GN
0173.0		SCH

APPENDIX B  
ROCK SAMPLE ANALYTICAL RESULTS

## APPENDIX B

## ROCK SAMPLE ANALYTICAL RESULTS FOR SAMPLES

COLLECTED DURING SEPTEMBER 28, 1979 PROPERTY

## EXAMINATION

RX Sample Number	Location	Description	Results								
			Pb	Zn	Cu	Ag	Cd	Mo	Ba	W	Au
RX 17597	Trench I	Sphalerite rich, epidote-diopside-quartz-hydrogrossularite carbonite skarn. (Thin Section C-79-2479)	2.09%	4.40%	<0.01%	1.72 oz/ ton	0.04%			10 ppm	0.002 oz/ton
RX 17598	Trench IV	Quartz-plagioclase-biotite-sericite schist. (Thin Section C-79-2480)	2600 ppm	1200 ppm		5.3 ppm				<2 ppm	
RX 17599	Trench V	Medium-coarse grained augen-textured quartz-plagioclase-sericite-biotite gneiss. (Thin Section C-79-2481)	1900 ppm	700 ppm		3.4 ppm				<2 ppm	
RX 17600	Trench VI Occurrence B	Sphalerite-diopside-carbonate (minor epidote) skarn.	0.17%	28.8%	0.22%	0.55 oz/ ton	0.37%			<2 ppm	<0.002 oz/ton
RX 15442	3 <sup>+85</sup> <sub>3<sup>+00</sup></sub> NE/ NW Occurrence J	Medium-grained, sphalerite-rich, epidote-hydrogrossularite-quartz-diopside skarn (metamorphic).	11.9%	11.2%	0.01%	1.66 oz/ ton	0.10%	0.52%	>2000 ppm (0.12%)		0.002 oz/ton
RX 15443	850 Feet South of Occurrence A	Fine-grained granophyre.	6200 ppm	2740 ppm	3240 ppm	23.0 ppm		5 ppm		10 ppm	30 ppb
RX 15444	Approx. 1500 feet west of BH 54321	Quartz-biotite schist.	3300 ppm	900 ppm	7.0 ppm			170 ppm		<2 ppm	

ROCK SAMPLE ANALYTICAL RESULTS FOR  
SAMPLES COLLECTED SEPTEMBER 12, 1981

RX Sample Number	Location	Sample Type	Sample Interval	Elevation	Description	Results						
						Pb ppm	Zn ppm	Ag ppm	Cu ppm	Mo ppm	W ppm	Cd ppm
RX 37478	Line A	Chip	50'	5300'	Altered rhyolite porphyry, locally brecciated	108	145	3.5	220	4	2	1
RX 37479	"	"	"	5250'	" " " "	124	110	0.9	72	4	2	1
RX 37480	"	"	"	5200'	" " " "	68	60	1.0	46	2	2	1
RX 37481	"	"	"	5150'	" " " "	104	50	0.5	44	4	2	1
RX 37482	"	"	"	5100'	" " " "	30	30	0.2	12	4	2	1
RX 37483	"	"	"	5050'	" " " "	24	30	0.1	14	4	2	1
RX 37484	"	"	"	5000'	" " " "	12	20	0.1	8	5	2	1
RX 37485	"	"	100'	4940'	" " " "	8	15	0.2	2	4	2	1
RX 37486	Line B	Grab	-	5030'	Silicified rhyolite porphyry	6	55	0.1	4	1	2	1
RX 37487	"	"	-	"	Silicified, kaolinized, rhyolitic pebble dike 3' wide intruded into highly silicified competent quartz feldspar porphyry. Thin section No. C81-2461	144	90	1.3	20	13	4	1
RX 37488	"	Chip	30'	"	Silicified, kaolinized rhyolite	32	55	0.6	20	4	2	1
RX 37489	"	"	"	"	" " " ", gossanized, extreme shattering, thin Mn crust, pungent odour when smashed	24	340	0.2	60	6	2	12
RX 37490	"	"	"	"	Silicified, kaolinized rhyolite, slicken on sides, rounded qtz. porphyries	56	110	0.6	28	4	2	1
RX 37491	Line C	"	35'	5130'	Malachite stained (1%), intensely silicified & kaolinized rhyolite. Cu-bearing shear 10'-12' wide @ 024°/90°, weak Mn stain on surface, fine qtz. veinlets, 2-3 per 2" width. Thin Section No. C81-2462	460	770	22.0	4800	3	2	4
RX 37492	"	"	30'	"	Silicified, kaolinized, rhyolite	34	70	0.9	240	4	2	1
RX 37493	"	Grab	-	"	Manganese wad in silicified, kaolinized rhyolite	24	595	0.1	138	12	2	16
RX 37494	"	Chip	30'	"	Silicified, kaolinized rhyolite; intense fractures (one per cm), shattering. In contact with fresh rhyolite porphyry (qtz, feldspar) which is less shattered (one per 10-20 cm)	12	60	0.4	38	5	2	1
RX 37495	-	Grab	-	4800' (below RX37494 @ 056°)	Fresh qtz. feldspar porphyry, weakly silicified & kaolinized, bleached matrix Thin Section No. C81-2463	48	30	0.4	44	2	2	1

APPENDIX C  
THIN SECTION REPORTS

# INCO METALS COMPANY

ONTARIO DIVISION

TO E. J. Debicki DATE Nov. 22, 1979

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FROM E. F. Pattison

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SUBJECT YUKON TERRITORY Project: 495

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No. C-79-2477

Location: Yukon Territory, sheet 105 D4, Ram Claims, <sup>3180NE/33100NW (Occurrence J)</sup> 4+25NE/30+50NW, Assay No. RX15442

- Classification: TS. M.g. sphalerite rich, epidote-hydrogrossularite-quartz-diopside skarn. The texture of the rock is completely metamorphic. There is no possibility of determining original origin of the sulphides in this or any other of the submitted specimens.
- PS. As well as sphalerite, the rock contains about 5% f.g. galena. The association of sphalerite and galena in a metamorphosed calcareous rock is certainly suggestive of a syngenetic origin but by no means conclusive.

No. C-79-2478

Location: ditto 2477, south of trenches, Assay No. RX15443

- Classification: This rock is a f.g. granophyre consisting of small 'phenocrysts' of plagioclase and quartz set in a matrix of v.f.g. but very well developed micrographic intergrowth. In my opinion this rock probably represents a buchite or melted quartzo-feldspathic sediment rather than a porphyry. Sericitic alteration of plagioclase feldspar is weakly developed.

The rock contains no visible fresh sulphide.

No. C-79-2479

Location: ditto 2477, Trench #1, Assay No. RX 17597

- Classification: TS. Sphalerite rich, epidote-diopside-quartz-hydrogrossularite-carbonate skarn.

PS. This specimen contains 1-2% galena in addition to the obvious abundant sphalerite.

No. C-79-2480

Location: ditto 2477, Trench 4, Assay No. RX 17598

- Classification: Quartz-plagioclase-biotite-sericite schist.

No. C-79-2481

Location: ditto 2477, Trench 5, Assay No. RX17599

Classification: M-c.g. augen-textured quartz-plagioclase-sericite-biotite gneiss. The rock contains no visible sulphides.

No. C-79-2482

Location: ditto 2477, Trench 6, Assay No. RX17600

Classification: TS. Sphalerite-diopside-carbonate-(Minor epidote) skarn.

PS. Minor quantities (<1%) of galena and pyrite are associated with abundant sphalerite.

EFP/mm

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# INCO METALS COMPANY

ONTARIO DIVISION

TO E. J. Debicki

DATE November 3, 1981

FROM W. V. Peredery

SUBJECT RAM CLAIMS, YUKON

No. C-81-2461

Location: Ram Claims, Yukon, Field No. RX 374487

Classification: Rhyolite Breccia. Fragments are composed of microgranophyre, f-m.g. albite phenocrysts, minor quartz, traces of biotite, and devitrified glass commonly with spherulitic textures. The matrix consists of pulverized rock & mineral flour. Feldspars and glass show alteration to clay-like patches, and there are abundant hydrous oxide patches, but no apparent silicification (silicified, kaolinized rhyolite pebble dyke).

No. C-81-2462

Location: Ram Claims, Yukon, Field No. 37491

Classification: Rhyolite Breccia. Similar to 2461, but little or no devitrified glass in fragments which could be described as granophyre-rich quartz-feldspar porphyry. Pulverized matrix. Feldspars show alteration to clay & minor sericite, and there are abundant secondary patches & veinlets of carbonate. Fe - hydroxide staining. (malachite stained, silicified & kaolinized rhyolite).

No. C-81-2463

Location: Ram Claims, Yukon, Field No. RX 37495

Classification: Quartz-feldspar porphyry. Phenocrysts of quartz, albite & perthite in a f.g. granular matrix of quartz, perthite, granophyre & albite. Minor biotite & oxides. Feldspars commonly altered to clay & minor sericite. ('quartz porphyry').

APPENDIX D  
LIST OF PERSONNEL

APPENDIX D

Personnel employed during the course of the work covered by this report:

<u>Name</u>	<u>Address</u>
E. J. Debicki (1980, 1981)	41 Ketz Road Whitehorse, Yukon Y1A 3V3
G. Freibergs (1980)	177 Valleyview Whitehorse, Yukon Y1A 3C9
R. Malkiewicz (1980)	4 Baby Point Terrace Toronto, Ontario M6S 4S4
H. R. Butler (1981)	Canadian Nickel Co. Ltd. Copper Cliff, Ontario POM 1N0
W. O. Manson (1981)	19 Market Street Copper Cliff, Ontario POM 1N0
P. H. Watson (1981)	52 Pelly Road Whitehorse, Yukon Y1A 4M1

Diamond Drillers - Canadian Nickel Company Limited (1980)

O. Olsen	51 Main Street Box 683 Flin Flon, Manitoba R8A 1J7
K. Kaitila	5 Laura Street R.R. #1 Copper Cliff, Ontario POM 1N0
B. Nixon	21 Second Court Sudbury, Ontario P3C 4X1
M. Dermody	222 Pine Street Sudbury, Ontario P3C 1X5

Drafting - Canadian Nickel Company Limited

W. J. Saftic (1980, 1981)

1246 Gemmell Street  
Sudbury, Ontario

Bonnie Halbert

425 Wembley Drive  
Sudbury, Ontario

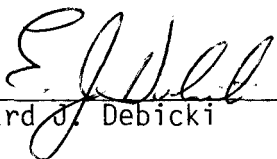
APPENDIX E  
CERTIFICATE OF QUALIFICATIONS

CERTIFICATE OF QUALIFICATIONS

I, EDWARD J. DEBICKI, of the City of Richmond in the Province of British Columbia, HEREBY CERTIFY:

1. THAT I reside at 11351 Seahurst Road, Richmond, British Columbia, V7A 3P3
2. THAT I am a graduate of McMaster University, Hamilton, Ontario, with a degree of Bachelor of Science (1971).
3. THAT I am District Geologist, B.C. and Yukon, with Canadian Nickel Company Limited (subsidiary of Inco Metals Company) of Copper Cliff, Ontario, POM 1N0
4. THAT I have practised my profession as a geologist since 1971, having worked in Ontario, Quebec, the Northwest Territories, Yukon Territory, and British Columbia.
5. THAT I visited the property discussed in this report and that the work described in this report was carried out under my supervision.
6. THAT I am an Associate Member of the Geological Association of Canada and a member of the Canadian Institute of Mining and Metallurgy.

DATED at Richmond, British Columbia, this 9th day of December, 1981

  
Edward J. Debicki

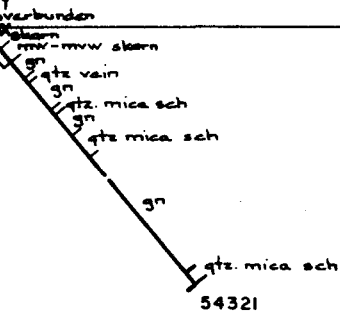
I.P. Conductor

RX 015442 Occurrence "J"  
11.9% Pb./ 11.2% Zn./ 1.66 oz./ton Ag.  
0.10% Cd./ 0.52% Ba./ 0.002 oz./ton Au.

ELEV. 5460'

Pb.	Zn	Ag
3.73	3.80	0.74

15.9'



091086

RAM CLAIMS (KREFT OPTION)  
NTS 105 D 4  
B.H. 54321  
WHITEHORSE AREA  
100 SCALE

FIGURE 1



GEOLOGICAL LEGEND			
AGE	COLOUR	UNIT	DESCRIPTION
Cenozoic	930	ITgp 8	quartz feldspar porphyry (rhyolitic)
		Int. 7	fine-medium granitic and pegmatitic dykes
Mesozoic	926	Mlgb 16	granodiorite
		ELPsn <sub>2</sub> 5	very fine grained, black siliceous schist (+/- graphite)
Paleozoic and/or Proterozoic	904	ELPsn <sub>1</sub> 4	biotite-quartz schist
		ELPc <sub>3</sub> 3	limestone skarn
Proterozoic	903	ELPc <sub>2</sub> 2	crystalline limestone with "felsite" intrusive
		PLPc <sub>1</sub> 1	crystalline limestone

**LEGEND**

- Creek with flow direction
- Claim Posts
- Claim Boundary
- Mineralized Occurrences (A-D, G-J)
- Trench and Trench Number (T1 to T7) (J1 B J2)
- Grid Lines and Grid Co-ordinates
- Elevation Contour (100' interval) (feet above sea level)
- Geological Contact
- Diamond Drill Location and Borehole Number
- Anticline
- Induced Polarization Anomaly Axis
- Edge of Outcrop
- OB Overburden (no outcrop)
- Zone of severe clay alteration

**Canadian Nickel Company Limited** Copper Cliff, Ontario  
POM 1N0

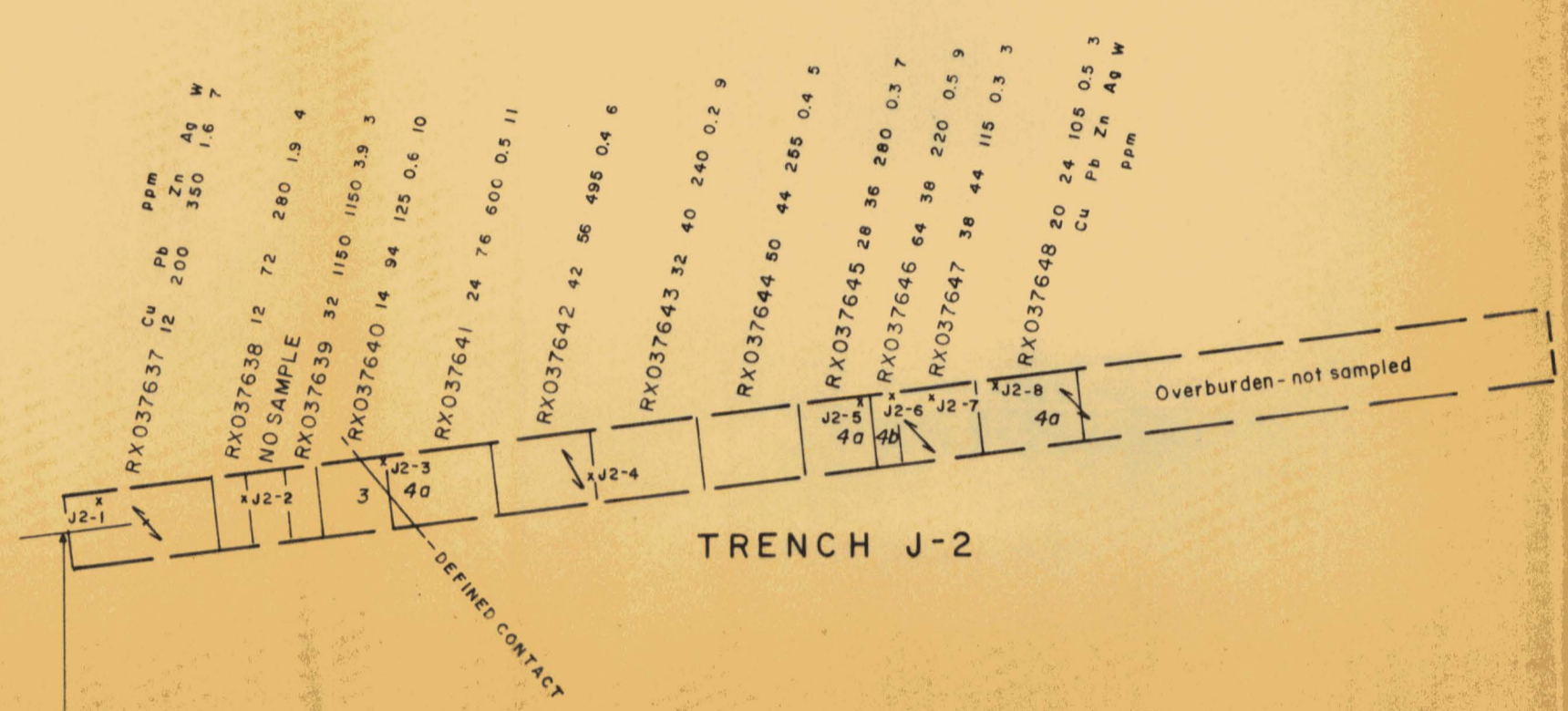
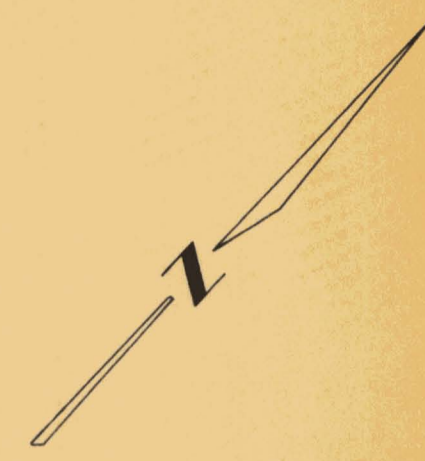
**KREFT OPTION COMPILATION MAP** 091086

Project: RAM Claims, Yukon Area: Primrose Lake

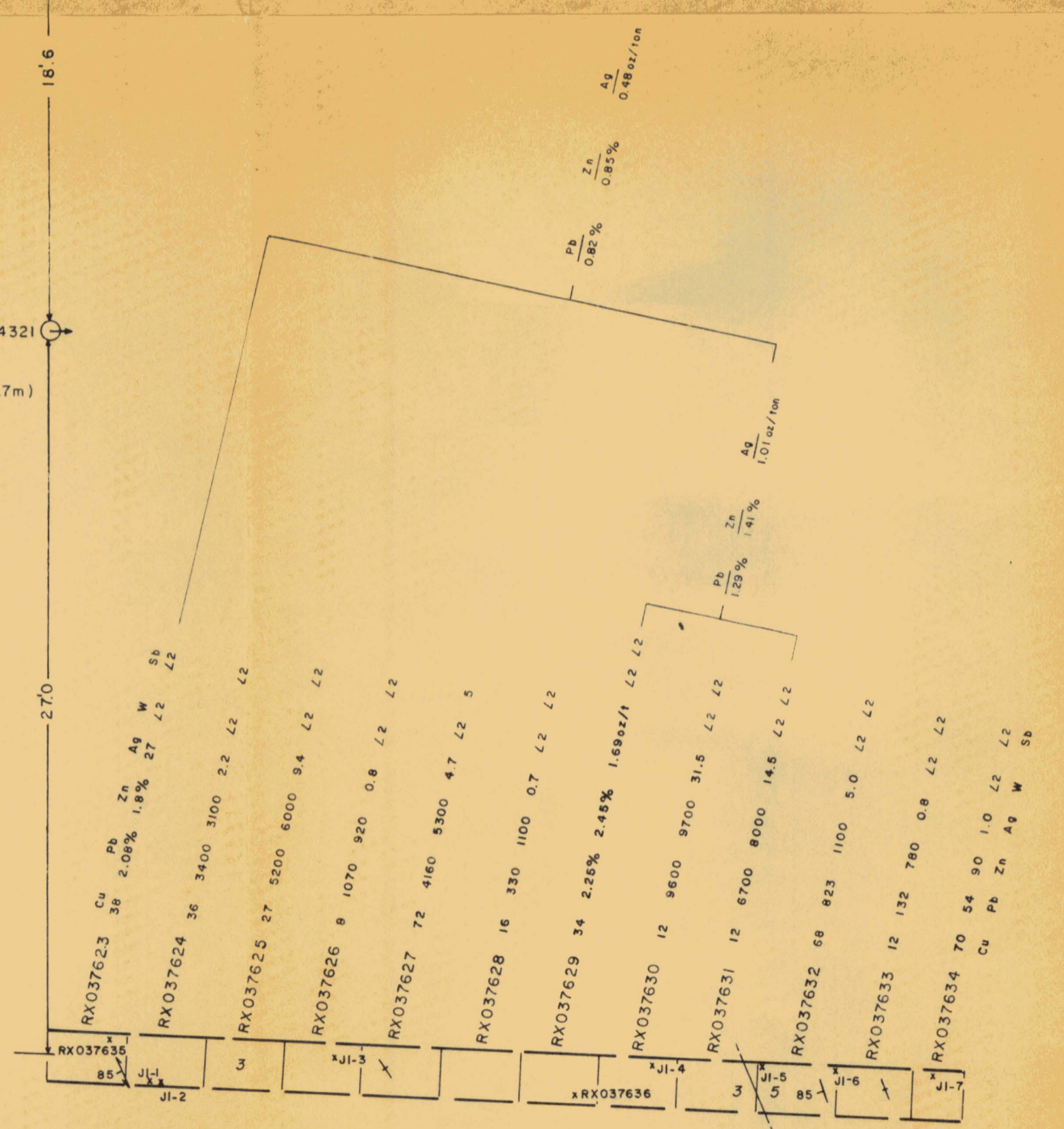
Supervisor: E.J. Debicki	Instrument:	Survey date:
Compiled by: E.J. Debicki *	Drawn by: W.J. Saffic	Date drawn: June /80
Scale: 1" = 400' (1:4800)	File:	Revised: Aug /82
		NTS: 105 D 4

SHEET **MAP 3**

\* Compilation based on work performed by United Keno Hill Mines Ltd. 1978, Canadian Nickel Co. Ltd. 1980, 1981, 1982



BH 54321  
 Azimuth 030°  
 Dip - 50°  
 Depth 173 feet (52.7m)



	Cu	Pb	Zn	Ag	W	Sb
GRAB SAMPLES: RX037635 -	152	8000	7000	8.5	L2	L2
RX037636 -	52	3.05%	2.94%	2.28oz/ton	L2	4

Results in ppm unless otherwise indicated

LITHOLOGY

AGE	COLOUR	UNIT	DESCRIPTION
Paleozoic and/or	915	EUP qte 5	Quartzite - moderately well banded
	936	EUP sn2 4b	Graphite schist - minor quartz veinlets
Proterozoic	942	EUP sn1 4a	Biotite-quartz schist
	904	EUP c3 3	Limestone skarn

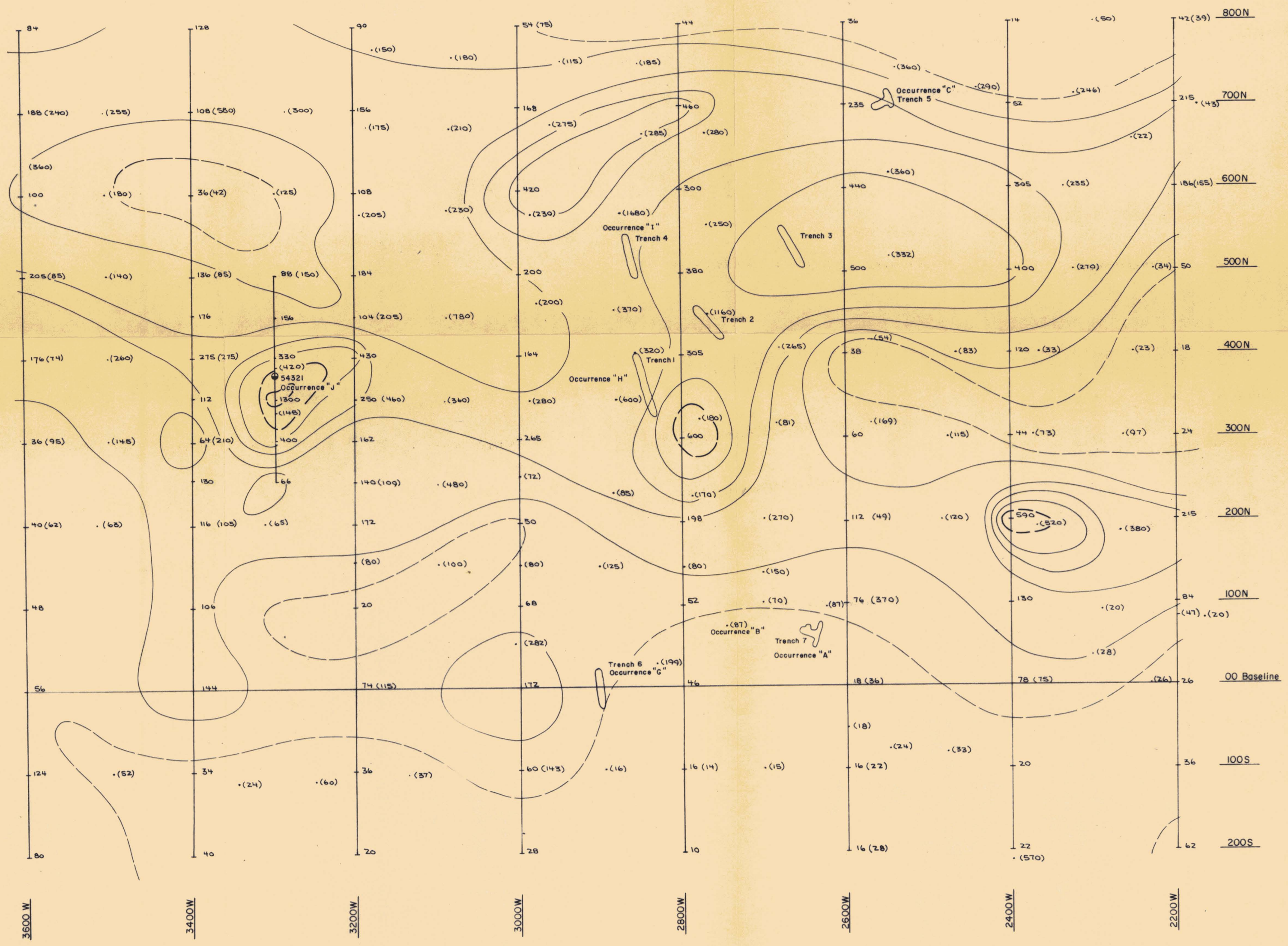
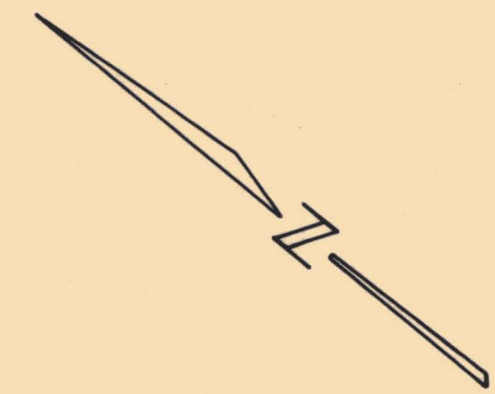
SYMBOLS

- 85° / / / Foliation (inclined, vertical, unknown)
- 85° / / Bedding (inclined, vertical)
- x J1-2 Reference sample location
- BH 54321 Diamond Drill Hole and Number



091086

Canadian Nickel Company Limited		Copper Cliff, Ontario POM 1NO	
TRENCH SAMPLING - CLAIM RAM 2		SHEET	MAP 4
Project: KREFT OPTION - 'J' SHOWING		Area: PRIMROSE LAKE, YUKON	
Supervisor: E. J. Debicki	Instrument:	Survey date: June, 1982	
Compiled by: W. O. Manson	Drawn by: W. E. Marsaw	Date drawn: July, 1982	Revised:
Scale: 1:60	File:	NTS 105D 4	



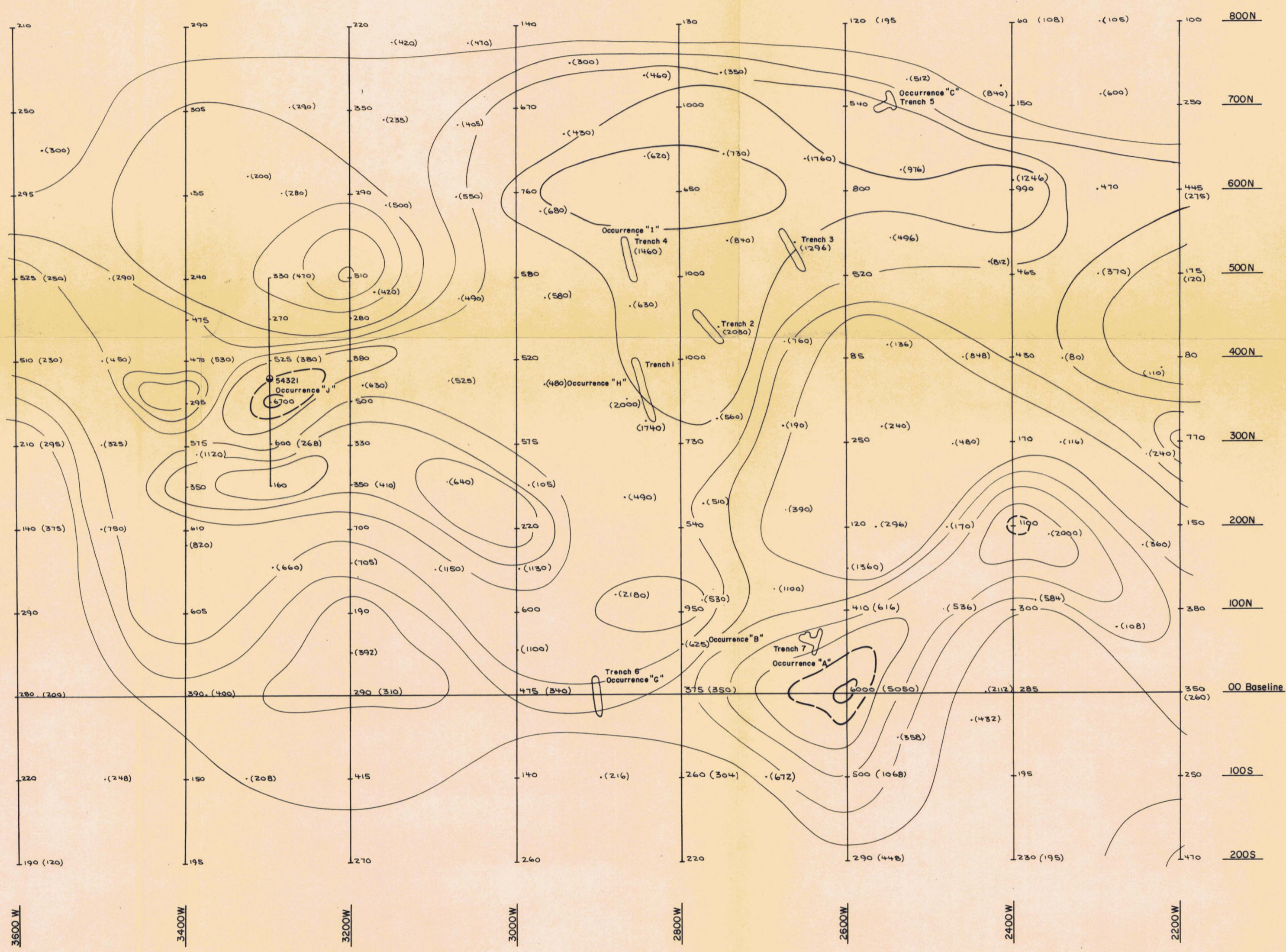
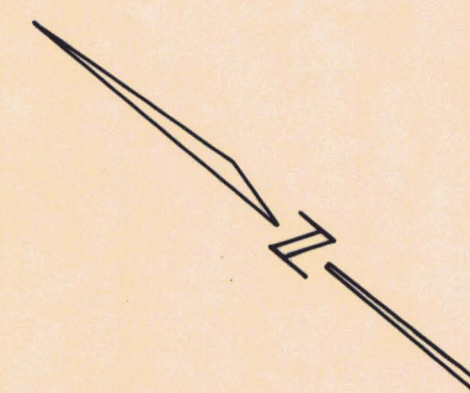
**LEGEND**

- 305 Soil sample location; result in ppm
- [ ] < 50 ppm
- [ ] 50-100 ppm
- [ ] 101-200 ppm
- [ ] 201-300 ppm
- [ ] 301-400 ppm
- [ ] 401-500 ppm
- [ ] 501-1000 ppm
- [ ] > 1000 ppm
- [ ] Occurrence "D"
- (-73) Soil sample taken by Keno Hill Ltd; result in ppm

Occurrence "D"

000059

Canadian Nickel Company Limited		Copper Cliff, Ontario POM 1NO	
KREFT OPTION LEAD (Pb)		SHEET 1	FIGURE 5a
Project: RAM Claims, Yukon	Area: Primrose Lake		
Supervisor: E. J. Debicki	Instrument:	Survey date: September 1981	
Compiled by: E. J. Debicki	Drawn by: B. Halbert	Date drawn: 1/82	Revised:
Scale: 1" = 100'	File:	N.T.S. 105 D 4	



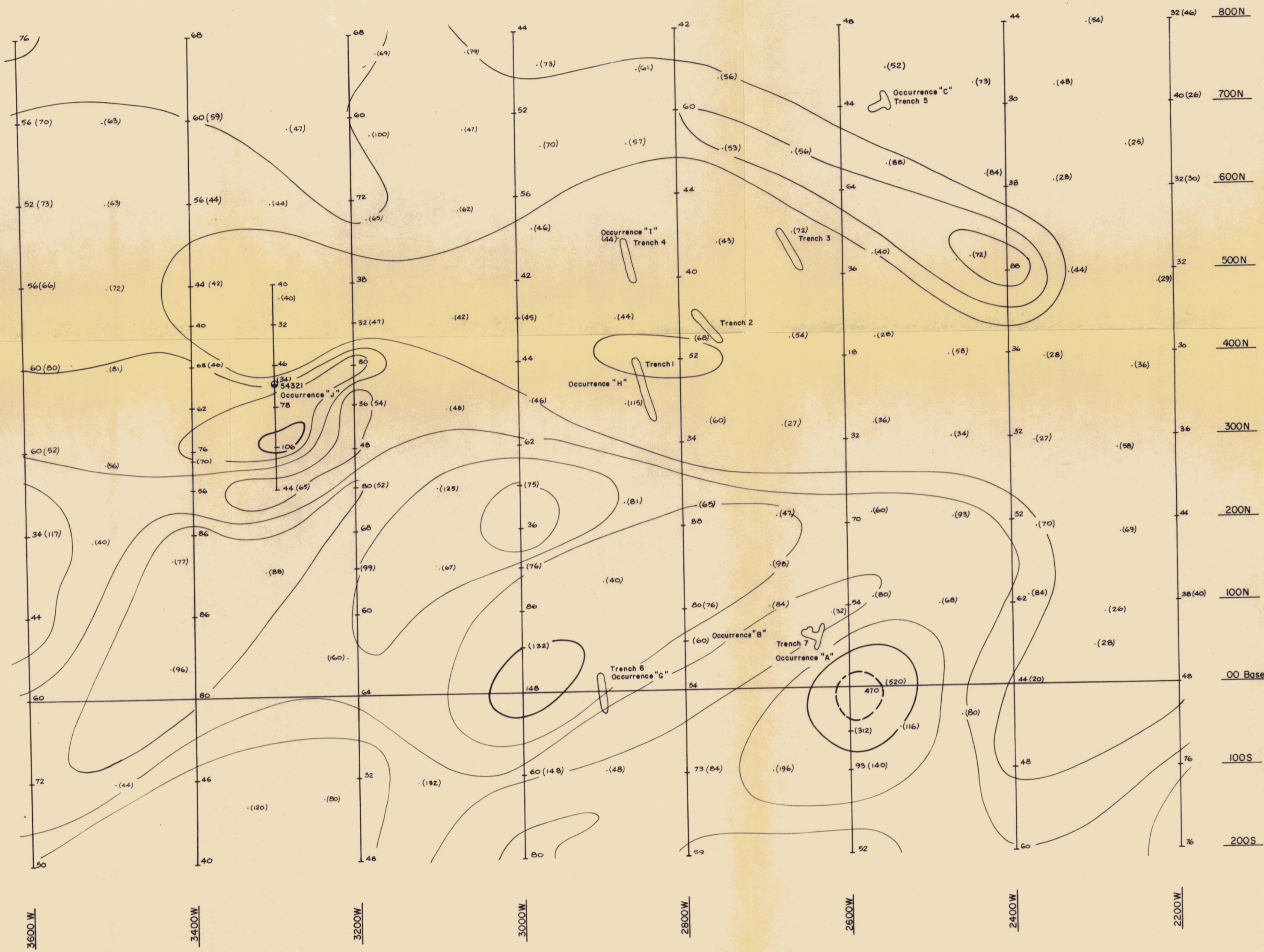
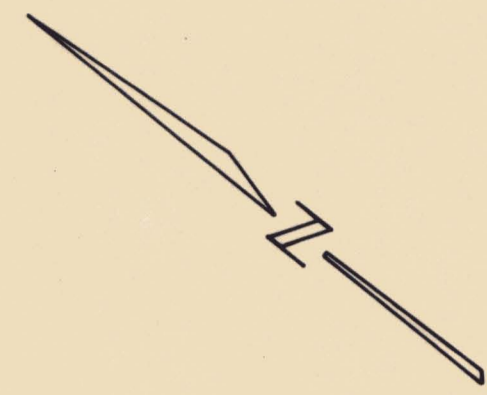
**LEGEND**

- 175 Soil sample location; result in ppm
- [Shaded box] <300 ppm
- [Shaded box] 300 - 400 ppm
- [Shaded box] 401 - 500 ppm
- [Shaded box] 501 - 750 ppm
- [Shaded box] 751 - 1000 ppm
- [Shaded box] 1001 - 5000 ppm
- [Shaded box] > 5000 ppm
- [Symbol] Occurrence "B"

-(124) Soil sample taken by Keno Hill Ltd; result in ppm

[Symbol] Occurrence "B"

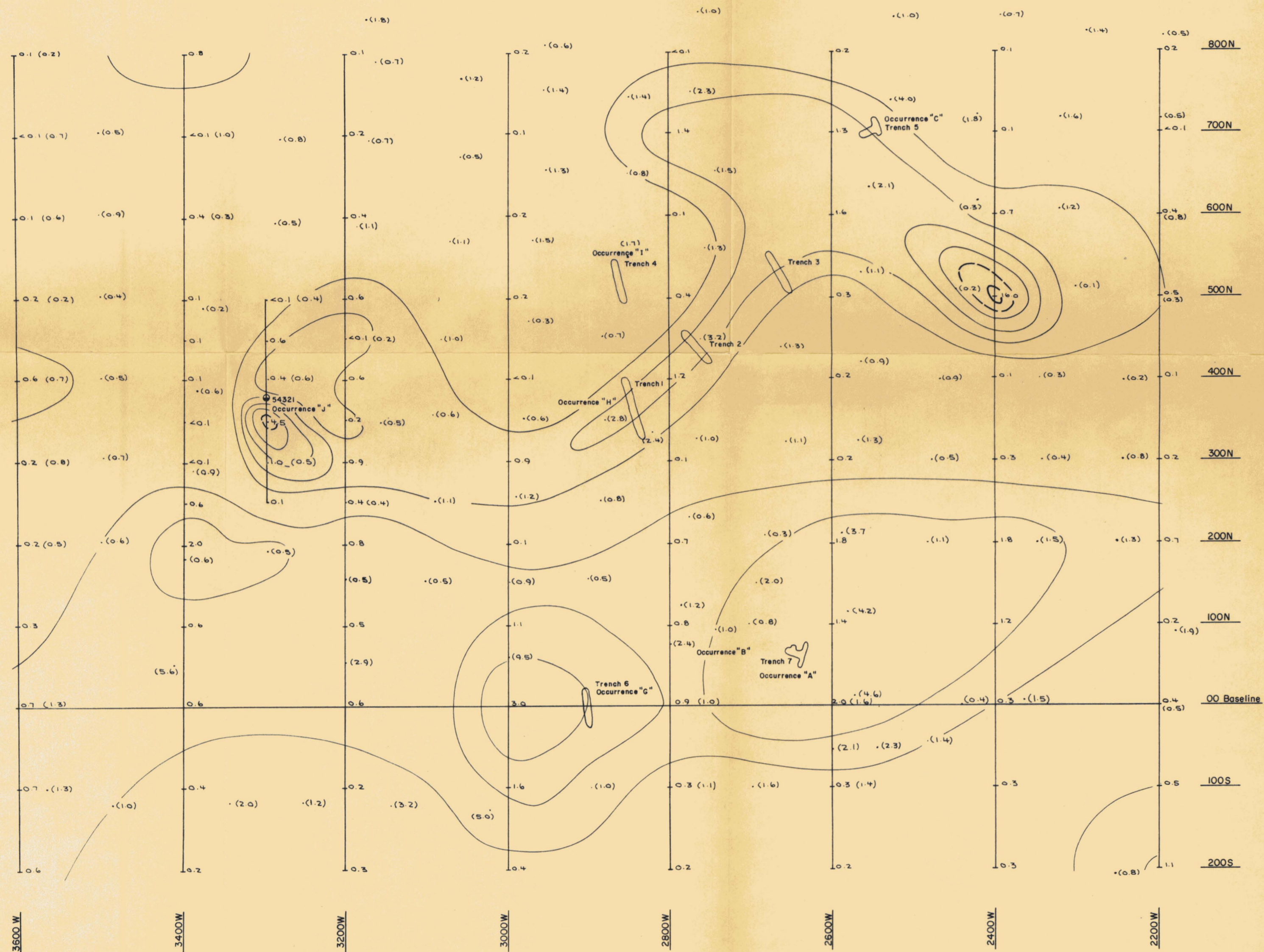
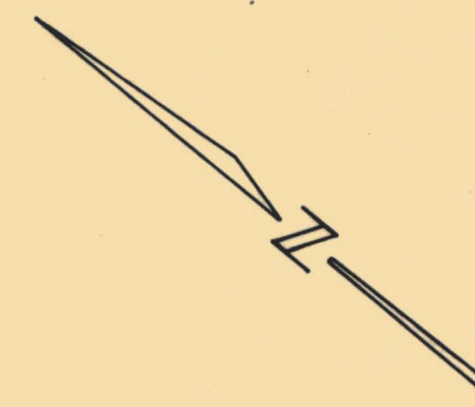
Canadian Nickel Company Limited		Copper Cliff, Ontario POM 1NO	
KREFT OPTION ZINC (Zn)		SHEET 1	FIGURE 5b
Project: RAM Claims, Yukon		Area: Primrose Lake	
Supervisor: E. J. Debicki	Instrument:	Survey date: September 1981	
Compiled by: E. J. Debicki	Drawn by: B. Halbert	Date drawn: 1/82	Revised:
Scale: 1" = 100'	File:	N.T.S. 105 D 4	



**LEGEND**

- 30 Soil sample location; result in ppm
- [Box] <50 ppm
- [Box] 50 - 60 ppm
- [Box] 61 - 75 ppm
- [Box] 76 - 100 ppm
- [Box] 101 - 200 ppm
- [Box] > 200 ppm
- ☞ Occurrence "D"
- (36) Soil sample taken by Keno Hill Ltd; result in ppm

Canadian Nickel Company Limited		Copper Cliff, Ontario POM 1NO	
KREFT OPTION COPPER (Cu)		SHEET 1	FIGURE 5c
Project: RAM Claims, Yukon		Area: Primrose Lake	
Supervisor: E. J. Debicki	Instrument:	Survey date: September 1981	
Compiled by: E. J. Debicki	Drawn by: B. Halbert	Date drawn: 1/82	Revised:
Scale: 1" = 100'	File:	N.T.S. 105 D 4	



**LEGEND**

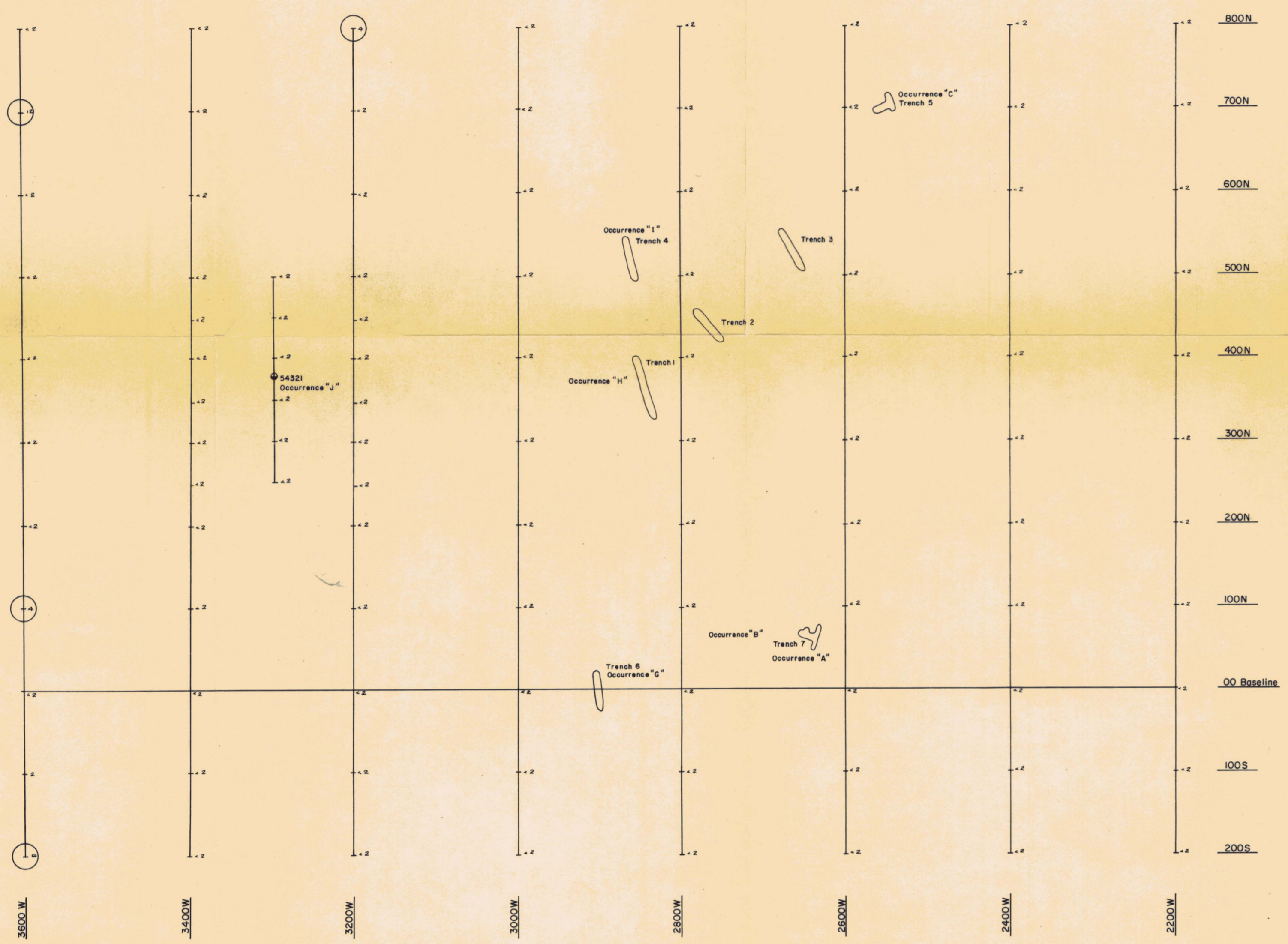
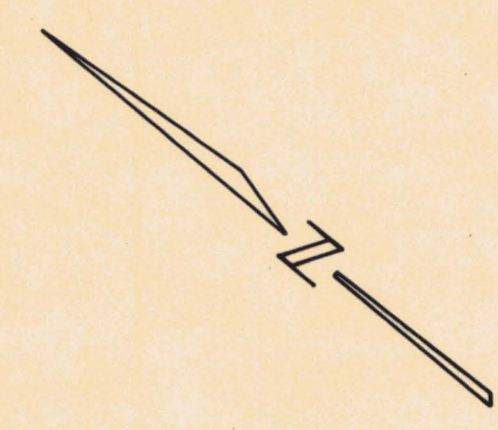
- 1.6 Soil sample location; result in ppm
- [Box] < 0.5 ppm
- [Box] 0.5 - 1.0 ppm
- [Box] 1.1 - 2.0 ppm
- [Box] 2.1 - 3.0 ppm
- [Box] 3.1 - 4.0 ppm
- [Box] 4.1 - 10.0 ppm
- [Box] > 10.0 ppm

Occurrence "D"

(0.1) Soil sample taken by Keno Hill Ltd., result in ppm

09-09-59

Canadian Nickel Company Limited		Copper Cliff, Ontario POM 1NO	
KREFT OPTION SILVER (Ag)		SHEET 1	FIGURE 5d
Project: RAM Claims, Yukon		Area: Primrose Lake	
Supervisor: E. J. Debicki	Instrument:	Survey date: September 1981	
Compiled by: E. J. Debicki	Drawn by: B. Halbert	Date drawn: 1/82	Revised:
Scale: 1" = 100'	File:	N.T.S. 105 D 4	

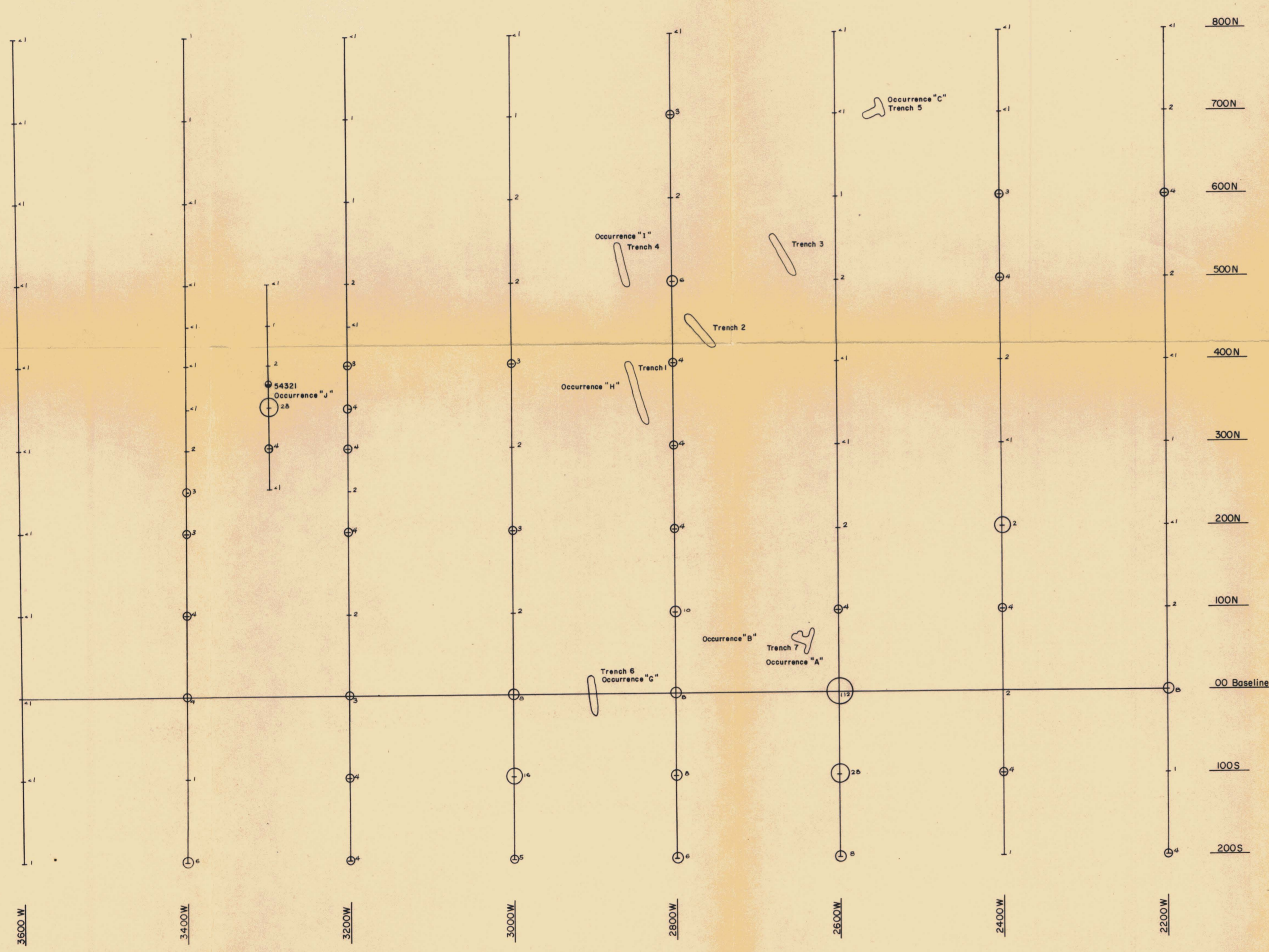
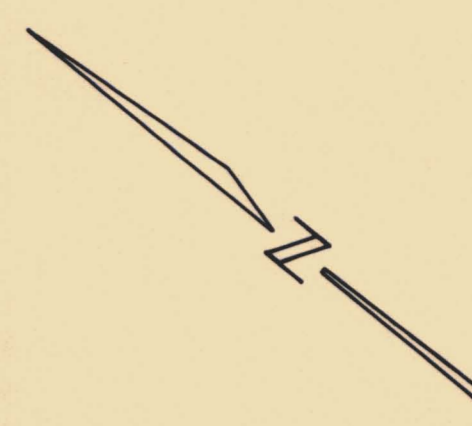


**LEGEND**

- Soil sample location; result in ppm
- Greater than 2 ppm
- ☆ Occurrence "D"

<b>Canadian Nickel Company Limited</b>		Copper Cliff, Ontario POM 1NO	
KREFT OPTION TUNGSTEN (W)		SHEET 1	FIGURE 5e
Project: RAM Claims, Yukon		Area: Primrose Lake	
Supervisor: E. J. Debicki	Instrument:	Survey date: September 1981	
Compiled by: E. J. Debicki	Drawn by: B. Halbert	Date drawn: 1/82	Revised:
Scale: 1" = 100'	File:	N.T.S. 105 D 4	





**LEGEND**

-2 Soil sample location; result in ppm

- (large) greater than 50 ppm
- (medium) 21-50 ppm
- (small) 11-20 ppm
- (very small) 6-10 ppm
- (tiny) 3-5 ppm

~~000050~~

Canadian Nickel Company Limited		Copper Cliff, Ontario POM 1NO	
KREFT OPTION CADMIUM (Cd)		SHEET 1	FIGURE 5g
Project: RAM Claims, Yukon		Area: Primrose Lake	
Supervisor: E. J. Debicki	Instrument:	Survey date: September 1981	
Compiled by: E. J. Debicki	Drawn by: B. Halbert	Date drawn: 1/82	Revised:
Scale: 1" = 100'	File:	N.T.S. 105 D 4	

# Canadian Nickel Company Limited

80 - 10551 Shellbridge Way, Richmond, B.C. V6X 2W8 • (604) 278-4238

March 31, 1982



**CONFIDENTIAL**

Mr. J.A. Morin  
Chief Geologist  
Dept. of Indian Affairs & Northern Development  
200 Range Road  
Whitehorse, Yukon  
Y1A 3V1

Dear Jim:

Re: RAM Claims - N.T.S. 105-D-4

Enclosed is a copy of the RAM claims assessment report. This report was not accepted as it did not fall within the conditions of Section 53 (4) of the Yukon Quartz Mining Act. Part of the report contains a diamond drill log for Borehole 54321. It would be advantageous if your department retained the report for internal use only as the core is stored in the H.S. Bostock Core Library.

I plan to be back in the Yukon in late May or early June and will look forward to seeing you at that time.

Yours truly,

CANADIAN NICKEL COMPANY LIMITED

E.J. (Ed) Debicki  
District Geologist  
B.C. and Yukon

EJD:jb  
x.c. J.F. Church  
Enclosure

*General*

~~ASSESSMENT REPORTS~~

WHITEHORSE M.D.

MAP No.

105 D4

TYPE OF WORK:

GEOLOGICAL, GEOCHEMICAL AND  
DIAMOND DRILLING

REPORT FILED UNDER	Canadian Nickel Co. Ltd.
DATE PERFORMED	June, 1980, Sept. 1981      DATE FILED: Feb. 1, 1982
LOCATION - LAT.	60°12'N
LONG.	135°44'W
CLAIM Nos.	RAM 1-10
	<b>CONFIDENTIAL</b>
	<i>internal use only</i>
WORK DONE BY	E.J. Debicki
WORK DONE FOR	Canadian Nickel Co. Ltd.
REMARKS	A mineralized skarn was drilled and assayed by Canadian Nickel Co. Ltd. Pb, Zn, Ag, Cd and W mineralization were found to assay to ore grades if combined, but the continuity and width do not justify further work.



TRENCHING REPORT ON  
RAM 1-10 CLAIMS (KREFT OPTION)  
PRIMROSE LAKE AREA

WHITEHORSE MINING DISTRICT - YUKON TERRITORY

**091086**

LATITUDE:  $60^{\circ}12'N$  - LONGITUDE:  $135^{\circ}44'W$

MAP SHEET: 105-D-4

DATES: JUNE 8, 1982 - JUNE 14, 1982

E. J. Debicki  
District Geologist  
B.C. and Yukon  
Canadian Nickel Company Limited  
80 - 10551 Shellbridge Way  
Richmond, B.C.  
V6X 2W8

August, 1982

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Map 1 - Location Map, Scale 1:4,120,000

Map 2 - Claim Location Map, Scale 1:31,680

(Back Pockets)

Map 3 - Compilation Map, Scale 1" = 400 (1:4,800)

Map 4 - Trench Sampling - Claim RAM 2, Scale 1:60

## SUMMARY

The RAM 1-10 claim group is located approximately 44 miles (70 km) southwest of Whitehorse, Yukon on NTS sheet 105-D-4. Access is by helicopter. The claims were optioned from Erwin Kreft by Canadian Nickel Company Limited on May 30, 1980.

The property covers a geological contact between northwest trending pre-Mississippian Yukon Group limestone, siliceous schist-gneiss and a small Tertiary quartz feldspar porphyry stock. Bordering the claim group, Cretaceous Coast Range intrusives are composed of hornblende-biotite granite.

Mineralization consists of lead-zinc-silver as galena and sphalerite disseminations, blebs or pods over an area 900 feet by 600 feet (275 m by 185 m) within epidote-diopside-quartz-hydrogrossularite garnet-carbonate skarn zones contained in the schist-gneiss near the intrusive contact.

The mineralization on the property was first discovered by E. Kreft in 1976. It was subsequently optioned to United Keno Hill Mines Ltd. during 1977-1979 who performed geological, geochemical and geophysical surveys and established seven trenches. Best chip-sample assays from the skarn zones were 8.04% Pb, 7.44% Zn, 1.87 oz/ton (64.1 g/tonne) Ag over 3 feet (1 m) (Occurrence I) and 1.49% Pb, 2.26% Zn, 1.08 oz/ton (37.0 g/tonne) Ag over 10 feet (3 m) (Occurrence H). Massive sphalerite at Occurrence A assayed up to 31.61% Zn and 0.43% Cd. These lenses do not exceed 50 feet (15.2 m) in length. A coincident high Zn, minor Pb and Ag soil geochem. anomaly 2500 feet long by 400 feet (765 m by 125 m) wide was located over the mineralized zone. A limited geophysical survey located coincident I.P. and EM-16 anomalies parallel to strike which were attributed to graphite shears. No anomaly was located over the mineralization.

Work by Canadian Nickel Company Limited during 1980 consisted of re-establishing the UKHM grid, limited prospecting, and diamond drilling of one hole to a depth of 173 feet (52.7 m). A new, small mineralized skarn showing (Occurrence J) was located approximately 500 feet (150 m) northwest of the known mineralization. A grab sample assayed 11.9% Pb, 11.2% Zn, 1.66 oz/ton (56.9 g/tonne) Ag, 0.10% Cd and 0.12% W. Borehole 54321 undercut this mineralization as well as tested the I.P. anomaly. Best intersection was 15.9 feet (4.9 m) of 3.73% Pb, 3.80% Zn, 0.74 oz/ton (25.4 g/tonne) Ag within which is contained an 8.2 foot (2.5 m) section assaying 5.99% Pb, 6.40% Zn, 1.06 oz/ton (36.3 g/tonne) Ag. A 1.8 foot (0.5 m) section within the mineralized zone assayed 10.6% Pb, 10.4% Zn, 0.50 oz/ton (17.1 g/tonne) Ag, 0.10% Cd and 0.125%  $WO_3$ . All mineralization is hosted within an epidote-diopside-garnet-quartz-carbonate skarn. The IP anomaly is attributed to graphite shears in the schist.

During 1981, detailed soil sampling was completed over the area of the known skarn showings. Results confirmed the UKHM anomalous results for lead, zinc, and copper. Tungsten values are negative and weakly anomalous molybdenum and cadmium values are randomly distributed.

During 1982, two trenches (J1 and J2) totalling 78 lineal feet (23.8 m) in length were established 27 feet (8.2 m) and 18.6 feet (5.7 m) on either side of Borehole 54321. Geological mapping and sampling were completed. Trench J1 encountered extensive skarn with bands of galena-sphalerite mineralization returning values from 0 to 27 feet (0 m to 8.2 m) of 0.82% Pb, 0.86% Zn and 0.48 oz/ton (16.5 g/tonne) Ag, including a section from 18 feet to 21 feet (5.5 m to 6.4 m) grading 2.25% Pb, 2.45% Zn and 1.69 oz/ton (57.9 g/tonne) Ag. Trench J2, did not extend far enough south to test the western strike length continuation of the mineralized horizon.

Magnetometer and gravity surveys over the area of the soil anomaly and skarn lead-zinc-silver mineralization are recommended for 1983.

## INTRODUCTION

RAM 1-10 claims were acquired by Canadian Nickel Company Limited under an option agreement dated May 30, 1980 from owner Erwin Kreft. This followed a property examination on September 28, 1979 by the author who examined and resampled previously established trenches. During the latter part of 1979, samples collected were analysed, rock thin sections studied and geophysical data previously collected on the property re-evaluated. Following the optioning of the RAM 1-10 claims, one day was spent (June 10, 1980) re-establishing the grid and one 173 foot (52.7 m) diamond drill hole was completed during the period June 16 - July 2, 1980. In 1981, two days were spent on the property completing a detailed soil grid over the area of the skarn mineralization. The 1982 program consisted of contract trenching consisting of two trenches on Occurrence J totalling 78 lineal feet (23.8 m).

During September 1981, RAM 11-58 claims were staked contiguous to the RAM 1-10 claims to cover several zones of intense kaolinization, sericitization, carbonatization, silicification and shattering within the Tertiary rhyolitic quartz feldspar porphyry. These zones hold possible potential for epithermal vein-stockwork Au-Ag deposits. Details of this program are covered in an assessment report to be filed during October 1982. As a result no mention of this aspect of the exploration program covering the RAM claims is covered by this report.

The RAM claims were formerly held under option by United Keno Hill Mines Ltd. during 1977-1979. A report by P. Watson and R. Joy dated January 25, 1979 filed for assessment, covers the exploration program by UKHM during their option. Work performed by Canadian Nickel Company Limited during 1980 - 1981 is covered in company reports by the writer dated March 1981 and December 1981.

## LOCATION AND ACCESS

The RAM claims (Map 1 and 2) lie approximately 44 miles (70 km) southwest of Whitehorse, Yukon, and 2 miles (3.2 km) northeast of Primrose Lake. They are situated at 60°12'N latitude and 135°44'W longitude on NTS Sheet 105-D-4.

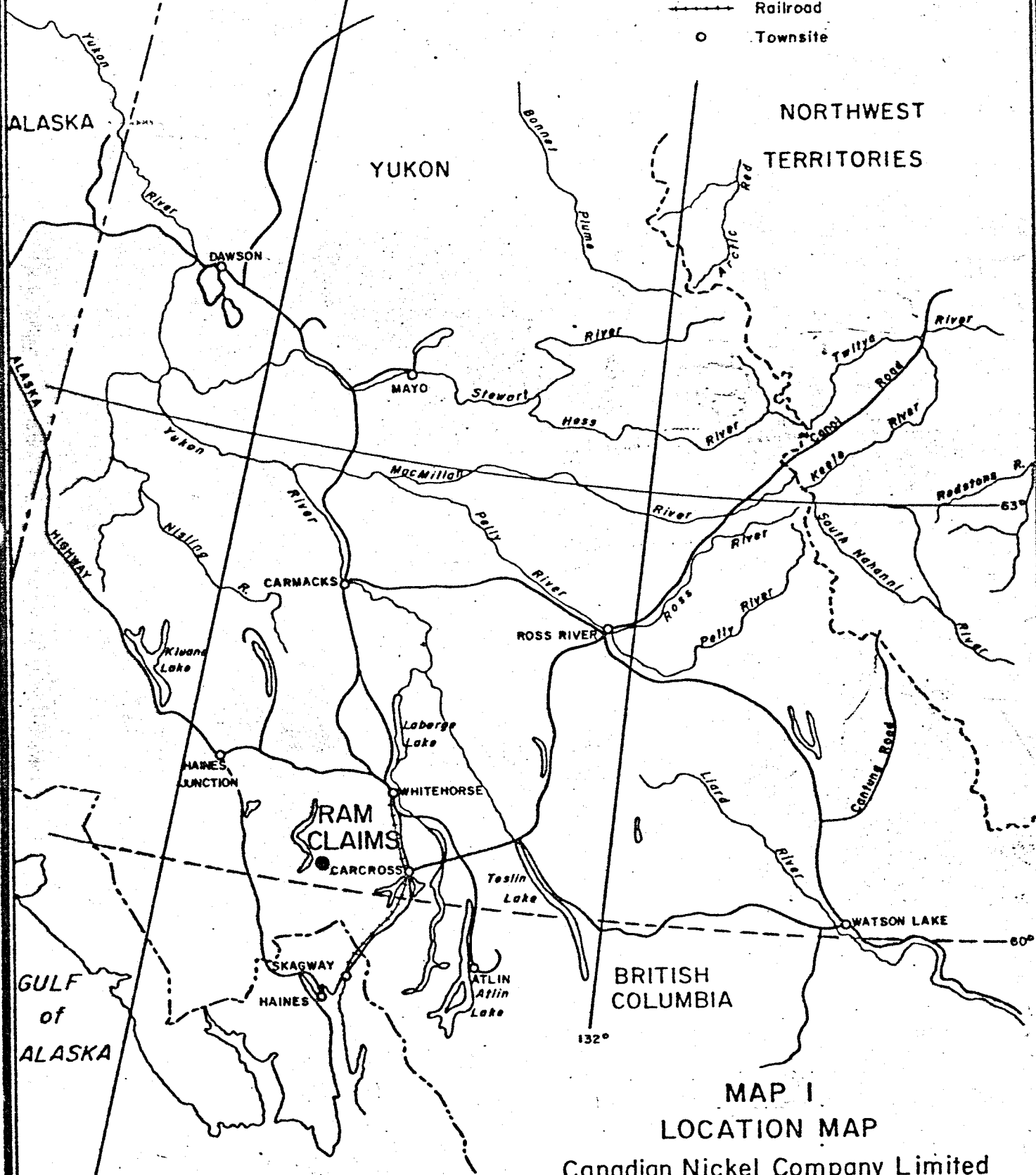
Access to the property is by helicopter from Whitehorse. Fixed-wing aircraft can land on Primrose Lake. Road access to within 20 miles (32 km) east of the property is possible via the Annie Lake Road to the Wheaton River bridge.

During the course of the exploration, a Bell Jet Ranger 206-B helicopter on contract from Trans North Air, Whitehorse, Yukon was utilized for access to the property.

# SOUTHERN YUKON TERRITORY

Scale 1 inch = 65 miles  
 (~ 1:4,120,000)

- International Boundary
- Provincial Boundary
- Highway
- +——— Railroad
- Townsite



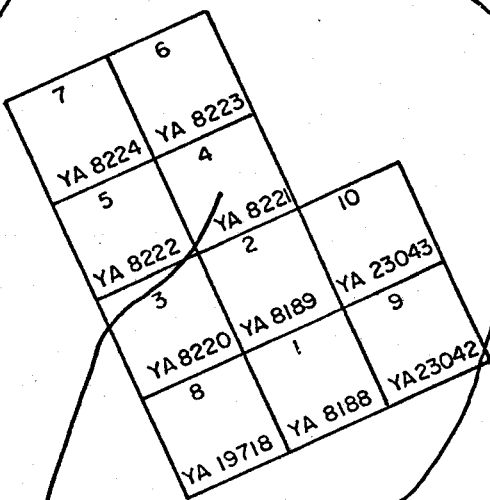
## MAP I

### LOCATION MAP

Canadian Nickel Company Limited

RAM CLAIMS - KREFT OPTION - YUKON

138°



60°12'

135°44'

135°44'

60°12'

Primrose Lake

**MAP 2**  
**Canadian Nickel Company Limited**  
**Kreft Option**  
**RAM CLAIMS**  
**YUKON**  
**Claim Location Map**

SCALE 1: 31,680

NTS. 105 D 4

### PHYSIOGRAPHY

The claim group lies on the northern edge of the Coast Mountains. Local relief is about 2500 feet (765 m) with elevations ranging from 3700 feet (1125 m) to 6000 feet (1825 m). The mineralization is exposed at an elevation of about 5600 feet (1705 m). The property is above tree-line, on a relatively smooth, gently-rolling upland surface. The valley wall on the southern portion of the claim group is steep, descending rapidly towards Primrose Lake.

### PROPERTY

The RAM claims consist of 10 contiguous claims (Map 2). The property lies within the Whitehorse Mining District. Owner of the property is Erwin Kreft, Takhini Hot Springs, P.O. Box 5150, Whitehorse, Yukon: phone: (403) 633-2706.

<u>Claim Name</u>	<u>Grant Number</u>	<u>Record Date</u>	<u>Expiry Date</u>
RAM 1-2	YA8188 - YA8189	13 Sept. 1976	November 6, 1987
RAM 3-7	YA8220 - YA8224	28 Sept. 1976	November 6, 1987
RAM 8	YA19718	26 Aug. 1977	November 6, 1987
RAM 9-10	YA23042-YA23043	25 July 1978	November 6, 1987

The claims are subject to an option agreement between Canadian Nickel Company Limited and Erwin Kreft dated May 30, 1980.

The RAM 11-58 claims contiguous to the RAM 1-10 claims were staked on October 24, 1981 and recorded on November 6, 1981. All ground surrounding the RAM 1-58 claims is open.

### HISTORY

The mineralization on the RAM claims was discovered by Erwin Kreft in late August 1976 during a hunting expedition. RAM 1-2 claims were staked, with RAM 3-7 being staked several days later. Minor rock and soil geochemical sampling was completed by Kreft.

The claims were optioned to United Keno Hill Mines in July 1977 after initial field visits confirmed the presence of the lead-zinc-silver mineralization. During 1977 and 1978, UKHM carried out geological mapping, rock and soil geochemical sampling, limited I.P. and EM-16 geophysical surveys and seven trenches totalling 341 linear feet (102 m). The results of this exploration are contained in the UKHM assessment report dated January 25, 1979.

Following a property examination on September 28, 1979, Canadian Nickel Company Limited optioned the RAM claims. Subsequent exploration consisted of grid re-establishment (12.4 km), limited prospecting and diamond drilling of one 173 foot hole (53.7 m) in 1980. During 1981, a detailed soil sampling program, geological mapping and rock-chip sampling was completed. The 1982 program consisted of two trenches being established 27 feet (8.2 m) and 18.6 feet (5.7 m) on either side of BH 54321 drilled in 1980. Trenching totalled 78 lineal feet (23.8 m). Each trench was mapped and sampled.

#### GEOLOGY AND STRUCTURE

The regional geology of the area is summarized by G.S.C. Map 1093A, Geology Whitehorse, scale 1:253,400, and more recently by D.I.A.N.D. Open File EGS 1979-6, Metallogenic Map, Whitehorse Map Area, scale 1:253,440.

Geologically, the property is underlain by three main rock units; pre-Mississippian Yukon Group metasediments, Cretaceous Coast Range intrusives and late Tertiary intrusives. The Yukon Group metasediments consist of north-west trending, steeply dipping siliceous schists and gneisses (Unit PLPsn) and limestone (Unit PLPc). Hornblende-biotite granodiorite of the Coast Range intrusives (Unit Mlgd) occurs in the southwest corner of the RAM claims. Late Tertiary intrusives (Unit lTgp) consist of (quartz feldspar rhyolitic) porphyry stocks and narrow dikes.

Detailed descriptions of each of the rock units are given in the UKHM report, Watson and Joy, January 25, 1979.

Recent work completed by P. H. Watson, et al, 1981, has determined Rb-Sr whole rock age dates for foliated granite of the Coast Range intrusives at 143-200 Ma while K-Ar dates for hornblende and biotite from a granodiorite are  $106 \pm 4$  Ma and  $53.7 \pm 1.9$  Ma, respectively. An Eocene porphyritic microgranite stock (Tertiary quartz feldspar porphyry) yielded a Rb-Sr whole rock age date of 43 Ma and has probably reset the biotite K-Ar date in the Coast Range intrusive granodiorite.

The structure of the area as exemplified by the foliation is predominantly northwest striking. Dips are variable but generally are steeply-dipping northeast and southwest on the RAM claims. Complex folding occurs in the metasediments. A mapped NW-SE striking anticlinal axis transects the claim group. Small faults or shears cross-cut the strike of the metasediments. Faults are best exposed in the creek beds where outcrop is abundant. The claims lie on a southwest-facing slope.

The contact between the Tertiary quartz feldspar porphyry and Yukon Group metasediments is sharp, steep and slightly irregular, with some brecciation. Only minor foliation was noted in the intrusive. Much of the Tertiary quartz feldspar porphyry weathers to a distinctive bright orange gossanous colour.

Map 3 - Compilation Map, scale 1" = 400' (1:4,800) summarizes the geology, geological formations, structure, location of mineral occurrences and trenches on the property.

### MINERALIZATION

Two types of mineralization were noted on the RAM claims by the author, namely zinc-lead-silver and gold-silver. The latter is not discussed in this report but is covered in assessment report to be filed in October 1982.

#### (a) Zinc-Lead-Silver

Zn-Pb-Ag mineralization is restricted to epidote-diopside-quartz-hydro-grossularite garnet carbonate skarn zones within two roughly parallel bands trending northwesterly in the Yukon Group metasediments. Occurrences A, B, D and G occur along contact between limestone (Unit PLPc) and biotite-quartz schist and biotite-quartz-feldspar gneiss (Unit PLPsn). Occurrences C, H and I occur within the more northerly zone in biotite-quartz schist and biotite-quartz-feldspar gneiss (Unit PLPsn). The mineralized occurrences cover an area approximately 900 feet (275 m) in strike length and 600 feet (185 m) in width within a soil geochemical anomaly 2500 feet (765 m) long by 400 feet (125 m) wide. All occurrences are near the contact with the Tertiary quartz feldspar porphyry and Cretaceous Coast Range intrusive granodiorite.

Red-brown, coarse-grained sphalerite is the predominant sulphide with minor amounts of argentiferous galena. The mineralization occurs mainly as disseminations or blebs and massive lenticular pods parallel to the northwest foliation. Individual mineralized zones are narrow (less than 10 feet (3 m)) and do not exceed 50 feet (15 m) in length. Sphalerite is locally very massive, with grades up to 31.61% Zn and 0.43% Cd in grab sample (Trench VII, Occurrence A - Discovery Zone). Seven trenches tested the extent and grade of mineralization. Best assays from chip-sampling were 8.04% Pb, 7.44% Zn, 1.87 oz/ton (64.1 g/tonne) over 3 feet (1 m) (Trench IV, Occurrence I) and 1.49% Pb, 2.26% Zn and 1.08 oz/ton (37.0 g/tonne) Ag over 10 feet (3 m) (Trench I, Occurrence H). A previously unreported occurrence (Occurrence J) was located on Section 33+00 NW at 3+85 NE, approximately 5 feet (1.5 m) in front of the diamond drill hole collar which undercut this mineralization. Surface exposure consists of a 10 foot by 10 foot (3 m by 3 m) rubble crop containing skarn within the Unit PLPsn schist with bedded sphalerite and galena. Assay of a grab sample ran 11.9% Pb, 11.2% Zn, 1.66 oz/ton (56.9 g/tonne) Ag, 0.10% Cd, and 0.52% Ba. The 1:1 Pb:Zn ratio with 1-2 oz/ton (34.3 - 68.6 g/tonne) Ag is reminiscent of Yukon syngenetic shale-hosted lead-zinc-silver deposits. The texture is completely metamorphic.

The geology, mineralization and results of Trenches J1 and J2 on Occurrence J are discussed in the section on Trenching. Reports (personal communication) that a Union Carbide regional stream sediment geochemistry

survey produced tungsten geochemical anomalies around the RAM claims, prompted analysis of the skarn samples for  $WO_3$  in 1980 and detailed soil sampling over the area of the mineralized skarn showings. Highest rock value was 0.12% W from Occurrence J.

## TRENCHING

### Introduction

The 1982 program on the RAM 1-10 claims consisted of establishing two trenches on Occurrence J on the RAM 2 claim for a total of 78 lineal feet (23.8 m).

Table 1 - Trenches J1 and J2

<u>Trench No.</u>	<u>Location</u> (Relative to BH 54321)	<u>Feet</u>	<u>Metres</u>
J1	27 ft. (8.2 m) East	35.5	10.8
J2	18.6 ft. (5.7 m) West	<u>42.5</u>	<u>13.0</u>
	Total:	78	23.8

Each trench was approximately 2 feet (0.6 m) wide and to a depth of 2 feet (0.6 m) to bedrock. Approximately 170 cubic feet (5 cubic metres) of material was excavated in the two trenches. Outcrop exposure in both trenches consists of shattered and fractured rubble crop. Geological mapping and sampling was completed in Trenches J1 and J2 before slumping filled in the bottoms of each trench. Only the southern 29 feet (8.8 m) of Trench J2 was mucked out and sampled.

The trenching was completed by a two man crew under contact from M. J. Moreau Enterprises Ltd., Whitehorse, Yukon, during the period June 8 - 14, 1982. The work was carried out from a fly camp established on the claim group.

The location of Trenches J1 and J2 are plotted on Map 3 (back pocket).

### (b) Results

Trenches J1 and J2 were geologically mapped and rock chip sampled at 3 foot (1 m) intervals. Samples were analyzed for Cu, Pb, Zn, Ag, W and Sb by Bondar Clegg and Company Limited, Whitehorse, Yukon. The results of the mapping and sampling are included as Map 4 (back pocket). Lead-zinc-silver mineralization consisting of narrow 1-2 foot (0.3 - 0.7 m) galena-sphalerite bands hosted by limestone skarn (epidote-quartz-garnet-diopside-carbonate) within a lower Paleozoic to upper Proterozoic Yukon Group bitote-quartz schist/gneiss, graphite schist and quartzite sequence trending  $292^\circ$  in Trench J1 and  $276^\circ$  in Trench J2.

Trench J1, 27 feet (8.2 m) east of Borehole 54321 encountered skarn from 0 feet to 27 feet (0 m to 8.2 m). Within this section, rock chip sampling at 3 foot (1 m) intervals returned the following analytical results:

Table 2 - Analytical Results, Trench J1

<u>Footage</u>	<u>Metres</u>	<u>Analytical Results</u>			
		<u>Pb</u> %	<u>Zn</u> %	<u>Ag</u> oz/ton	<u>g/tonne</u>
0'-27' (27')	0m-8.2m (8.2 m)	0.82	0.85	0.48	16.5
Including 18'-27' ( 9')	5.9m-8.2m (2.3 m)	1.29	1.41	1.01	34.6
Including 18'-21' ( 3')	5.9m-6.4m (0.5 m)	2.25	2.45	1.69	57.9

A grab sample (RX 37636) within the 18'-21' (5.9 m - 6.4 m) sampled section ran 3.05% Pb, 2.94% Zn and 2.28 oz/ton (78.17 g/tonne) Ag.

Trench J2, 18.6 feet (5.7 m) west of Borehole 54321 exposed skarn in the southern 9 feet (2.7 m) of the trench. No visible galena-sphalerite mineralization was noted. Highest analytical values from a 1 foot (0.3 m) rock chip sample from 6 feet to 7 feet (1.8 m - 2.1 m) ran 0.12% Pb, 0.12% Zn and 0.11 oz/ton (3.9 g/tonne) Ag. The northern portion of the trench consists of interbanded biotite-quartz schist/gneiss and graphite schist. The mineralized skarn zone in Trench J1 and Borehole 54321, trends at approximately 276° - 292° from Trench J1 past the southern end of Trench J2. This may explain why Trench J2 failed to encounter the mineralized skarn horizon. It is also possible the mineralized skarn horizon has pinched out west of Borehole 54321.

Copper, tungsten and antimony results were not anomalous. Sample descriptions and analytical results covering Trenches J1 and J2 are attached as Appendix D.

CONCLUSIONS AND RECOMMENDATIONS

Mineralization on the RAM 1-10 claims consists of galena and sphalerite as disseminations, blebs and small massive pods within epidote-diopside-garnet-quartz-carbonate skarn lenses. These skarn lenses are hosted by Yukon Group schists, gneisses and quartzites, pre-Mississippian in age, near the contact with Tertiary quartz feldspar porphyry and Cretaceous granodiorite intrusions. Exploration to date has not uncovered economic proportions of lead and zinc in the surface exposures of the mineralized skarns which are generally less than 10 feet (3 m) in width and 50 feet (15 m) in length. The skarn mineralization has been traced over an area 900 feet by 600 feet (275 m by 185 m) within a soil geochemical anomaly 2500 feet (765 m) long by 400 feet (125 m) wide. One diamond drill hole (BH 54321) encountered lead-zinc-silver with traces of cadmium and tungsten

occurs at an intersected vertical depth of 20 feet (6.1 m) on Occurrence J. Other mineralized skarn zones have not been tested below surface. Best mineralization exposed at surface is on Occurrence A (massive sphalerite) and Occurrence J (galena, sphalerite with minor silver, cadmium and tungsten).

Exploration in 1983 is proposed to consist of magnetometer and gravity surveys over the zone of skarn mineralization to determine whether economic pods of galena-sphalerite occur below surface. Defined targets would be proposed for diamond drilling in 1984.

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8. Debicki, E. J., March 1981: Geological Survey and Diamond Drilling Report on RAM 1-10 Claims (Kreft Option), Primrose Lake Area, Whitehorse Mining Division, Yukon Territory; Company Report.
9. Debicki, E. J., December 1981: Geological Survey and Diamond Drilling Report on RAM 1-10 Claims (Kreft Option) Primrose Lake Area, Whitehorse Mining Division, Yukon Territory, Company Report.



APPENDIX A

STATEMENT OF EXPENDITURES

Statement of Expenditures

RAM 1-10 Claims

Salaries and Fringes

Geologist & Assistant: Field 2 days @ \$306	\$612	
Office 1 day @ 306	<u>306</u>	\$ 918.00

Personnel Expenses

Subsistence: 6 man days @ 20/day	120	
Accommodation: 6 days @ 40/day	<u>240</u>	360.00

Transportation

Helicopter 3.2 hrs. @ 510/hr.	1,632	
Truck 1 day @ 35	<u>35</u>	1,667.00

Supplies

Food (Contract Trenching Crew)	229.50	
Dynamite & Fuse	<u>638.78</u>	868.28

Analytical

Geochemical - Rock 26 @ 11		286.00
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Contract Trenching

7 days @ 475/day		<u>3,325.00</u>
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Total:		\$7,424.28
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W. Manson  
July 22, 1982



APPENDIX B

LIST OF PERSONNEL

APPENDIX B

Personnel employed during the course of the work covered by this report:

Name

E. J. Debicki (Report)	11351 Seahurst Road Richmond, British Columbia V7A 3P3
W. O. Manson (Geologist)	19 Market Street Copper Cliff, Ontario POM 1N0
S. Anderson (Geol. Assist.)	553 King George Highway New Castle, New Brunswick E1V 1N2

Contractors

Helicopter:	Trans North Air P.O. Box 4338 Whitehorse, Yukon Y1A 3T6
Trenching:	M. J. Moreau Enterprises Ltd. P.O. Box 5282 Whitehorse, Yukon Y1A 4Z2

Drafting - Canadian Nickel Company Limited



APPENDIX C

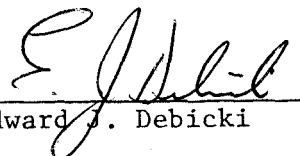
CERTIFICATE OF QUALIFICATIONS

AUTHOR'S QUALIFICATIONS

I, EDWARD J. DEBICKI, of the City of Richmond, in the Province of British Columbia, HEREBY CERTIFY:

1. THAT I reside at 11351 Seahurst Road, Richmond, British Columbia, V7A 3P3
2. THAT I am a graduate of McMaster University, Hamilton, Ontario, with a degree of Bachelor of Science (1971).
3. THAT I am District Geologist, B.C. and Yukon, with Canadian Nickel Company Limited (subsidiary of Inco Limited) of Copper Cliff, Ontario, POM 1NO.
4. THAT I have practised my profession as a geologist since 1971, having worked in Ontario, Quebec, the Northwest Territories, Yukon Territory and British Columbia.
5. THAT the work described in this report was carried out under my supervision on behalf of Canadian Nickel Company Limited.
6. THAT I am a Associate Member of the Geological Association of Canada and a member of the Canadian Institute of Mining and Metallurgy.

DATED at Richmond, British Columbia, this 23rd day of August, 1982.

  
Edward J. Debicki



APPENDIX D

TRENCH SAMPLE DESCRIPTIONS AND ANALYSES

TRAVERSE NUMBER Trench J-1

PROJECT RAM Claims, Yukon

GEOLOGIST(S) W. O. Manson

N.T.S. 105-D-4

AREA Primrose Lake

DATE June, 1982

SAMPLE NUMBER	SAMPLE TYPE			SAMPLE LENGTH, WIDTH, AREA	LATITUDE, LONGITUDE and/or U.T.M.	SAMPLE DESCRIPTION Rock type, lithology, character of soil, stream silt, etc. Formation Mineralization, etc.	RESULTS (ppm. / % / oz. per ton)								
	RX Rock, Talus	SX Stream Silt, Soil	Grab, Chip, Channel				Cu ppm	Pb ppm	Zn ppm	Ag ppm	W ppm	Sb ppm			
						Trench J-1, Azimuth 050° Started: 06/08/82 Completed: 06/11/82 Trenched by M.J. Moreau Enterprises Ltd. Southwest End of Trench									
RX 37623	Rock		Chip	0'-3'		Skarn-massive to vaguely foliated, diopside skarn. Galena-sphalerite disseminated 5-7%. Weathering appears to produce epidote after diopside? Numerous rust spots in weathered rock but no obvious iron minerals in the fresh rock. Strike: 120 degrees, Dip: 85 degrees southwest.	38	2.08	18,200			27	<2	<2	
RX 37624	Rock		Chip	3'-6'		Skarn-as above at 3.0'. Rare speck of galena. Locally siliceous bands up to 0.1 feet.	36	3400	3100			2.2	<2	<2	
RX 37625	Rock		Chip	6'-9'		Skarn-diopside. Fine-med. grained massive to vaguely banded. Generally grey-green- weathers grey-brownish with clots and patches of chocolate brown staining or alteration. Rare band to 2-3 metres are siliceous.	27	5200	6000			9.4	<2	<2	
RX 37626	Rock		Chip	9'-12'		Skarn-as above at 9.0'. Strike: 105 degrees. Dip: 90 degrees.	8	1070	920	0.8		<2		5	
RX 37628	Rock		Chip	15'-18'		Skarn-as above at 9.0'. No sulphides observed.	16	330	1100			0.7	<2	<2	
RX 37629	Rock		Chip	18'-21'		Skarn-as above at 9.0'. Splashes & blebs of galena 19.6' to 20.1'. Galena 10%.	34	2.25	1.69	oz/ton		<2	<2		
								%	2.45%						

TRAVERSE NUMBER Trench J-1  
 N.T.S. 105-D-4

PROJECT RAM Claims, Yukon  
 AREA Primrose Lake

GEOLOGIST(S) W.O. Manson  
 DATE June 1982

SAMPLE NUMBER	SAMPLE TYPE			SAMPLE LENGTH, WIDTH, AREA	LATITUDE, LONGITUDE and/or U.T.M.	SAMPLE DESCRIPTION Rock type, lithology, character of soil, stream silt, etc. Formation Mineralization, etc.	RESULTS (ppm. / % / oz. per ton)						
	RX Rock, Talus	SX Stream Silt, Soil	Grab, Chip, Channel				Cu ppm	Pb ppm	Zn ppm	Ag ppm	W ppm	Sb ppm	
RX 37630	Rock		Chip	21'-24'		Skarn-diopside - as at 9.0'. Disseminated specks galena at 23.9' 2-3%	12	9600	9700		31.5	<2	<2
RX 37631	Rock		Chip	24-27'		Skarn-diopside - as at 9.0'. Weathered portions have a dark brown to black mineral not evident in fresh rock.	12	6700	8000		14.5	<2	<2
RX 37632	Rock		Chip	27'-29.7'		Quartzite-dark grey, very fine grained, well foliated. Up to 30% as vein quartz parallel to foliation. Darker portions have very fine grained biotite. May be a highly metamorphosed argillaceous quartz sandstone. No sulphide observed. Foliation strike: 115 degrees, dip: 85 degrees southeast.	68	823	1100		5.0	<2	<2
RX 37633	Rock		Chip	29.7'-32'		Quartzite-very fine grained, pale grey to grey. Weakly to moderately banded. No sulphides observed. Strike: 110 degrees, Dip: 85 degrees southeast.	12	132	780	0.8		<2	<2
RX 37634	Rock		Chip	32'-35.5'		Quartzite-dark grey to rusty on weathered zones. Well banded with a well developed cleavage parallel to foliation. Minor quartz vein to 1 inch.	70	54	90	1.0		<2	<2
RX 37635	Rock		Grab	Within 0'-3'		Skarn-with galena and sphalerite	152	8000	7000		8.5	<2	<2
RX 37636	Rock		Grab	Within 18'-21'		Skarn-with galena and sphalerite.	52	3.05	2.28	oz/ton	% 2.94%	<2	4

TRAVERSE NUMBER Trench J-2  
 N.T.S. 105-D-4

PROJECT RAM Claims, Yukon  
 AREA Primrose Lake

GEOLOGIST(S) W.O. Manson/S. Anderson  
 DATE June, 1982

SAMPLE NUMBER	SAMPLE TYPE			SAMPLE LENGTH, WIDTH, AREA	LATITUDE, LONGITUDE and/or U.T.M.	SAMPLE DESCRIPTION Rock type, lithology, character of soil, stream silt, etc. Formation Mineralization, etc.	RESULTS (ppm. / % / oz. per ton)							
	RX Rock, Talus	SX Stream Silt, Soil	Grab, Chip, Channel				Cu ppm	Pb ppm	Zn ppm	Ag ppm	W ppm			
						Trench J-2 Azimuth: 040° Started: 06/08/82 Completed: 06/14/82 Trenched by: M.J. Moreau Enterprises Ltd.								
RX 37637	Rock		Chip	0'-4'		Southwest End of Trench Skarn-diopside. Strongly foliated, banded Quartz layers up to 2mm. Dark pale green bands weathering chocolate brown to white. Very fine grained, very siliceous with minor mafics (biotite) disseminated through- out; possible metasediment. No apparent mineralization	12	200	350	1.6	7			
RX 37638	Rock		Chip	4'-5'		Skarn-massive. White grey in colour. Upper zone shows moderate amounts of alteration; yellowish to green epidote after diopside; highly siliceous; altered zone gradational with calcareous zone; no apparent mineralization	12	72	280	1.9	4			
No sample				5'-6'		Frozen ground								
RX 37639	Rock		Chip	6'-7'		Skarn-highly siliceous, fine grained to crystalline greenish grey to brownish- white; crystalline quartz vugs present in one zone; becoming quartz rich toward north end; massive; no apparent mineralization	32	1150	1150	3.9	3			

TRAVERSE NUMBER Trench J-2

PROJECT RAM Claims, Yukon

GEOLOGIST(S) W.O. Manson/S. Anderson

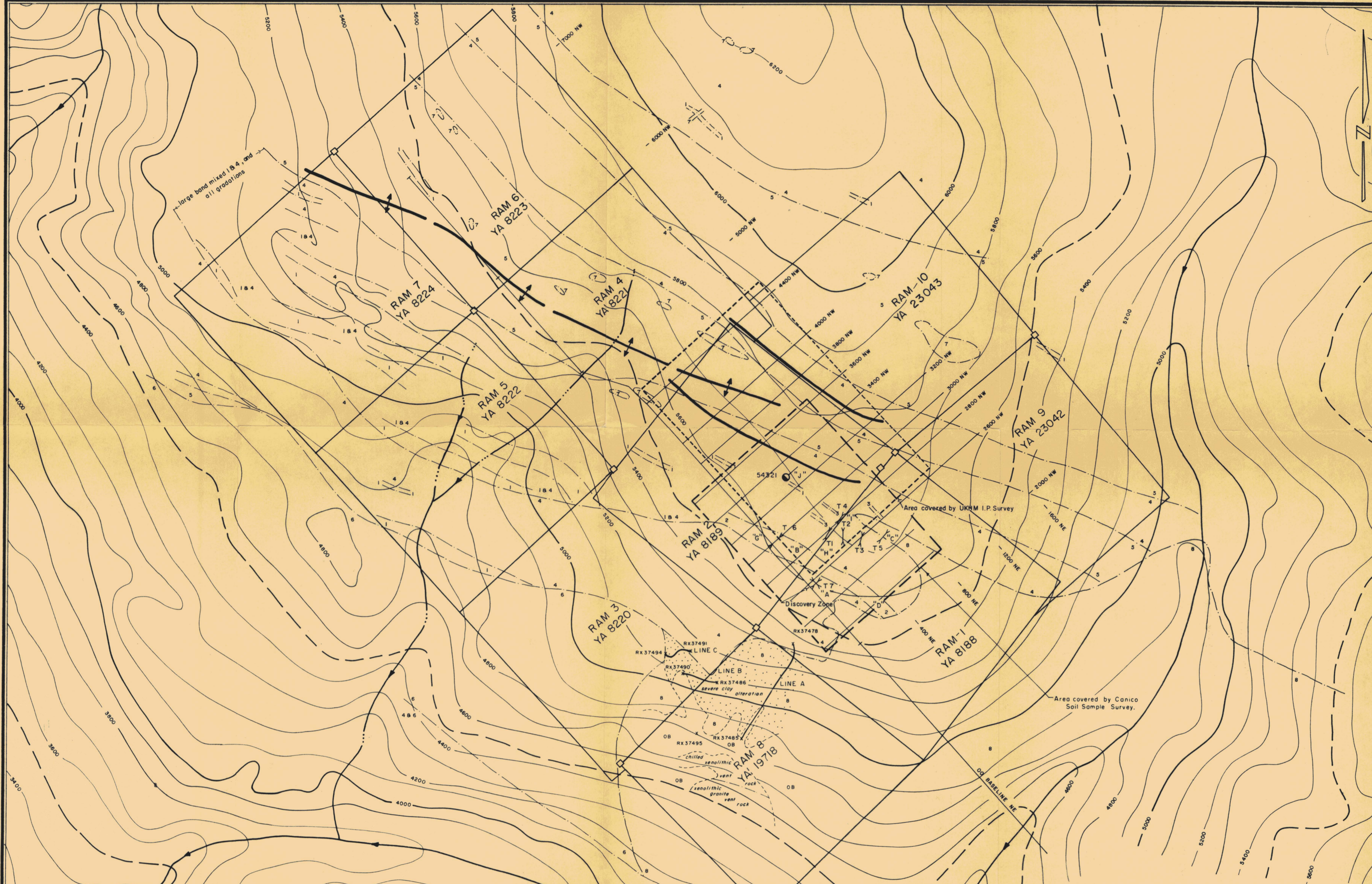
N.T.S. 105-D-4

AREA Primrose Lake

DATE June 1982

SAMPLE NUMBER	SAMPLE TYPE			SAMPLE LENGTH, WIDTH, AREA	LATITUDE, LONGITUDE and/or U.T.M.	SAMPLE DESCRIPTION Rock type, lithology, character of soil, stream silt, etc. Formation Mineralization, etc.	RESULTS (ppm. /% /oz. per ton)						
	RX Rock, Talus	SX Stream Silt, Soil	Grab, Chip, Channel				Cu ppm	Pb ppm	Zn ppm	Ag ppm	W ppm		
RX 37640	Rock		Chip	7'-9'		Quartz vein-contact. Quartz vein intruded along contact/foliation approx. 2-3 inches wide trending 097 degrees. Dip measurement not possible. Massive white-grey minor quartz veinlets visible; random orientation in contact with greenish calcareous siliceous rock; no mineralization.	14	94	125	0.6	10		
RX 37641	Rock		Chip	9'-12'		Schist-quartz biotite. Slightly contorted in places; qtz. bands up to 0.5 cm; fine to med. grained; weathering rust to black.	24	76	600	0.5	11		
RX 37642	Rock		Chip	12'-15'		Schist - same as previous sample	42	56	495	0.4	6		
RX 37643	Rock		Chip	15'-18'		Schist - same as RX 37641. Quartz stringers up to 2 cm with rust yellow alteration, flecked with biotite; biotite stringers massive.	32	40	240	0.2	9		
RX 37644	Rock		Chip	18'-21'		Schist - same as RX 37643	50	44	255	0.4	5		
RX 37645	Rock		Chip	21'-23'		Schist-same as RX 37643. In contact with graphite schist.	28	36	280	0.3	7		
RX 37646	Rock		Chip	23'-23.7'		Schist-graphite. Massive, moderately foliated with minor quartz blebs concentrated along foliation; contact has 0.5 cm quartz vein associated; slight alteration associated; quartz veinlets also found cross-cutting foliation; very fine grained.	64	38	220	0.5	9		





GEOLOGICAL LEGEND			
AGE	COLOUR	UNIT	DESCRIPTION
Cenozoic	930	ITgp	8 quartz feldspar porphyry (rhyolitic)
		Int.	7 fine-medium granitic and pegmatitic dykes
Mesozoic	926	Mlgb	6 granodiorite
		EUPsn <sub>2</sub>	5 very fine grained, black siliceous schist (+/- graphite)
Paleozoic and /or	942	EUPsn <sub>1</sub>	4 biotite-quartz schist
		EUPc <sub>3</sub>	3 limestone skarn
Proterozoic	903	EUPc <sub>2</sub>	2 crystalline limestone with "felsite" intrusive
		PUPc <sub>1</sub>	1 crystalline limestone

LEGEND	
	Creek with flow direction
	Claim Posts
	Claim Boundary
	"A" Mineralized Occurrences (A-D, G-J)
	Trench and Trench Number (T1 to T7)
	Grid Lines and Grid Co-ordinates
	Elevation Contour (100' interval) (feet above sea level)
	Geological Contact
	Diamond Drill Location and Borehole Number
	Anticline
	Induced Polarization Anomaly Axis
	Edge of Outcrop
	OB Overburden (no outcrop)
	Zone of severe clay alteration

**Canadian Nickel Company Limited**  
Copper Cliff, Ontario  
POM 1NO

**KREFT OPTION  
COMPILATION MAP**

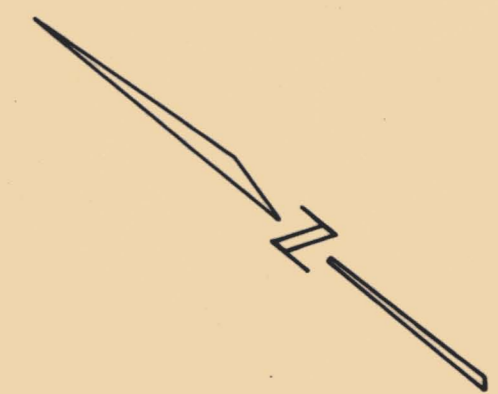
SHEET **3** FIGURE

Project: RAM Claims, Yukon      Area: Primrose Lake

Supervisor: E.J. Debicki	Instrument:	Survey date:
Compiled by: E.J. Debicki *	Drawn by: W.J. Sattic	Date drawn: June / 80
Scale: 1" = 400'	File:	Revised: Dec. / 81

N.T.S. 105 D 4

\* Compilation based on work performed by United Keno Hill Mines Ltd. 1978, Canadian Nickel Co. Ltd. 1980, 1981.



**LEGEND**

- Sx068361 Soil sample location number
- Trench locations
- Location of occurrence
- Diamond drill location and borehole number

000959

<b>Canadian Nickel Company Limited</b>		Copper Cliff, Ontario POM 1NO	
<b>KREFT OPTION SOIL SAMPLE LOCATION MAP</b>		SHEET <b>1</b>	FIGURE <b>4</b>
Project: <b>RAM Claims, Yukon</b>	Area: <b>Primrose Lake</b>		
Supervisor: <b>E. J. Debicki</b>	Instrument:	Survey date: <b>September 1981</b>	
Compiled by: <b>E. J. Debicki</b>	Drawn by: <b>B. Halbert</b>	Date drawn: <b>1/82</b>	Revised:
Scale: <b>1" = 100'</b>	File:	N.T.S. 105 D 4	