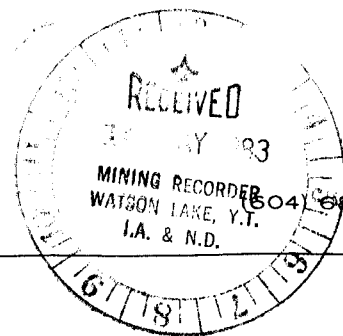
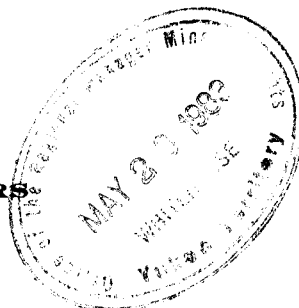


ARCHER, CATHRO

& ASSOCIATES (1981) LIMITED

CONSULTING GEOLOGICAL ENGINEERS

1016-510 WEST HASTINGS STREET
VANCOUVER, B. C. V6B 1L8



REPORT ON
GEOLOGICAL AND GEOCHEMICAL SURVEYS
CONDUCTED JULY 12 - AUGUST 17, 1982

TRANZ 1-14 CLAIMS - YA68631-YA68644
WATSON LAKE M.D., YUKON
CLAIM SHEET 95C/5
LATITUDE 60°28'N; LONGITUDE 125°56'W

JANUARY, 1983

R.J. CATHRO, P.Eng.

091459

This report has been prepared by
the Geological Survey of Canada
under contract to the Yukon Quartz
Mining Co. and is prepared as
representative work to the amount
of \$ 6,650 -.

R. Watson

for Director of Mines, Exploration and
Geological Services for Commissioner
of Yukon Territory.

TABLE OF CONTENTS

| | <u>PAGE</u> |
|-------------------------------------|-------------|
| Introduction | 1 |
| Property, Location and Access | 1 |
| Geomorphology | 2 |
| Stratigraphy | 2 |
| Structure | 6 |
| Mineralization | 7 |
| Geochemistry | 7 |
| Conclusions | 9 |

TABLE

| | |
|-------------------------------------|---|
| Table 1 - Table of Formations | 2 |
|-------------------------------------|---|

PLATE

FOLLOWING PAGE

| | |
|--|---|
| Plate 1 - Looking northeast to Beaver River and Tranz claims ... | 8 |
|--|---|

ILLUSTRATIONS

| <u>Figure No.</u> | | <u>Pocket</u> |
|-------------------|--|---------------|
| 1 | Tranz Property, Geology and Lead, Zinc, Copper and Silver Geochemistry | A |

APPENDICES

| |
|--|
| Appendix A - Statement of Qualifications |
|--|

INTRODUCTION

The Tranz property was staked by ZX Joint Venture (Chevron Canada Limited, Enterprise Exploration Limited and SMD Mining Co. Ltd.) in July, 1982 over a string of tufa and ferricrete gossans 1.5 km long that contains strongly anomalous amounts of zinc, nickel and cobalt. Geological mapping and geochemical sampling was conducted from July 12 to August 17, 1982. The program was managed by R.C. Carne and C.A. Main of Archer, Cathro & Associates (1981) Limited.

PROPERTY, LOCATION AND ACCESS

The property consists of 14 contiguous claims recorded in the name of Archer, Cathro & Associates (1981) Limited at the Watson Lake Mining Record's office, Yukon, as follows:

| <u>Claim Name</u> | <u>No. Claims</u> | <u>Mining District</u> | <u>Claim Sheet</u> | <u>Grant Numbers</u> | <u>Expiry Date</u> |
|-------------------|-------------------|------------------------|--------------------|----------------------|--------------------|
| Tranz 1-14 | 14 | Watson Lake | 95C/5 | YA68631-YA68644 | July 9/83 |

The Tranz property is located near the boundary of Northwest Territories with the Yukon Territory at 60°28'N latitude and 125°56'W longitude; 180 km northeast of Watson Lake, Y.T. Access in 1982 was by helicopter from a camp near the Alaska Highway at the Liard River crossing (Km 792), 160 km south of the property.

GEOMORPHOLOGY

The property is in an area of broad hills that rise to a uniform elevation of about 1400 m. Relief is occasionally steep in some narrow stream channels and along the Beaver River. In general, valleys are wide and drain to the southeast. Most of the area is heavily vegetated with treeline at about 1400 m. Forest fires have burned extensive sections, greatly impeding ground travel.

The distribution of glacial erratics and presence of glacial features such as eskers, terraces, lakes, lacustrine and glaciofluvial deposits indicate that most of the area was glaciated in the Pleistocene.

STRATIGRAPHY

Most of the geological information on the property is based on the results of detailed stratigraphic and structural mapping performed during 1982 by ZXJV geologists, particularly Randy Parrish, within this area of generally poor exposure. The geology of the belt is plotted at a scale of 1:10,000 on Figure 1, in pocket.

The following Table of Formations is representative of the belt.

TABLE 1: TRANZ PROPERTY, TABLE OF FORMATIONS

Ordovician

Os Sunblood Formation: this unit consists of grey to buff weathering, medium to light grey dolomite. Rare chert nodules have been observed only in the uppermost part of this unit, just west of the Tranz claims. The dolomite is sugary to dense and crystalline, thick bedded and rather homogeneous. The unit is over 300 m thick and no base was seen.

Ordovician and Silurian

OS_Q Well-bedded, gritty quartz sandstone and quartz pebble grit up to 100 m thick lies between Sunblood Formation dolomite and Road River shale and provides a very useful structural and stratigraphic marker in the area of the Tranz claims. Minor silty shale, siltstone and thin-bedded sandstone with black shale partings are also present. The silty rocks appear bioturbated and resemble turbiditic clastic rocks.

This unit in the area of the Tranz claims comprises gritty quartz sandstone, quartz pebble grit and minor silty shale, siltstone and thin-bedded sandstone with black shale partings.

Ordovician, Silurian and Devonian

OSD_{RR} The Road River Formation is fairly well exposed west of Spruce Lake (north of Figure 1) and consists of 350 to 600 m of black and, in part, blue-grey weathering, graptolitic shale and cherty shale, laminated, buff to medium brown dolomitic siltstone, black silty limestone and some minor coaly or carbonaceous black beds. This unit generally underlies the more resistant, laminated siltstone and calcareous rocks that form cliffs along the Beaver River. Straight monograptids and a curved, almost circular monograptid are common in the black shales to the point that their absence in a black shale probably indicates that it is not of Road River age.

Devonian

Dc Carbonates of middle Devonian age, based on the presence of crinoidal fragments with ossicles with twin axial canals, were observed southeast of the Tranz claims.

Devonian and Mississippian - Lower Earn Group

DM_E The Lower Earn Group dominantly consists of "gun-blue" weathering, siliceous to cherty, carbonaceous, jet-black shales. In contrast to other Paleozoic shale units, the Lower Earn Group rarely contains such distinctive lithologies as siltstones, carbonates or brown weathering clastic rocks. Thickness of the unit is variable, reaching a maximum of 650 to 900 m in the vicinity of the Tranz claims. To the north of the Tranz claims, the upper part of the unit contains distinctive orange weathering septarian nodules.

Fossils found in the Earn Group include vascular plant fragments up to 20 cm in length, "Y"-shaped sponge spicules up to 1 cm long and straight, tapered segmented cephalopods up to 10 cm long. None of these are found in the Road River Formation, nor are any graptolites found in the Earn Group and hence the presence of those fossil types is diagnostic of the respective lithologic units.

Carboniferous and Permian - Mattson Formation

CP_M Overlying the Lower Earn Group is the 200 m thick Mattson Formation. The lower part consists of a distinctive, resistant, buff-white, thick-bedded and massive quartz-arenite and quartzite that is about 30 m thick. This grades upwards into a more heterogeneous assemblage of quartz sandstone and grit (with white feldspar fragments), silty shale, soft fissile shale, impure sandstone and siltstone. Bedding in the quartz-arenite unit is often indistinct and is defined by a load-casted surface, which can appear pitted.

The boundary between the Mattson Formation and Lower Earn Group, which is quite distinctive and easily mapped from the air and on the ground, is a very useful marker horizon.

ANGULAR UNCONFORMITY

Tertiary(?)

Tcg Over 100 m of fluvial conglomerate with minor black shale and lithic sandstone occurs in an east-trending ridge south of the Tranz claims. Imbrication in clasts of quartzite, chert (probably derived from the Permian Fantasque Formation), rare porphyry and red weathering grit (m0cg), and minor shale indicate a fluvial origin. Clasts are generally well rounded, up to 30 cm in size, and are devoid of glacial striae. Minor lithic sandstone contains carbonized wood fragments. The rock is generally clast-supported and the presence of chert and especially distinctive red weathering grit indicates that similar middle Ordovician conglomerates were exposed during deposition of the Tertiary conglomerate (located to the southeast of Figure 1).

DISCONFORMITY(?)

T_b A small exposure of plagioclase-bearing basalt with well-developed columnar joints is fortuitously preserved in one locality south of the Tranz claims. It may be conformable to unit Tcg, although there could be some angular discordance on its lower contact.

STRUCTURE

The Tranz claims lie within one of the more westerly panels in a wide zone of moderately folded sediments bounded on the east by the Caribou Thrust. The geology and structure of the Tranz claims is shown in plan on Figure 1.

In general, the main thrust panel is folded into a broad antiform with a shallow central axial syncline, called the Spruce Lake Syncline by ZXJV. This antiform is most clearly exposed north of the Tranz claims, to the north of Figure 1. The main axis of the antiform lies west of the Tranz claims and west of Figure 1. The easterly limb of the antiform is bent into the Varley Monocline and the subsidiary Tranz Anticline farther to the east (both named by ZXJV).

The Varley Monocline steps down to the east and has nearly horizontal and steeply east-dipping limbs. This monocline is well exposed around the junction of Beaver River and Varley Creek but is poorly exposed to the north. The Tranz Anticline has a more rounded hinge than the Varley Monocline. Structures are abruptly terminated to the south against the crosscutting, northeast-trending Beaver Fault, a major regional structure which can be traced for over 300 km northeast of the Tranz claims and 70 km southwest (refer to GSC Map 1505A).

Middle Devonian carbonates, the shelf-facies equivalents of middle Devonian Lower Earn Group shales, are present on the east side of the Beaver Fault, just southeast of the Tranz claims. Some crinoidal fragments, mainly ossicles with twin axial canals, were observed in minor limestone interbeds within Lower Earn Group shales. This type of crinoid was restricted to the middle Devonian. Thus it appears that the Beaver Fault had an influence on the facies of middle Devonian rocks as a tectonic or basement control. It was apparently reactivated during Cretaceous-Tertiary time when Tertiary sediments and basalt were deposited in a narrow graben.

Within the graben sediments (unit Tcg), bedding dips about 10° to the south. Evidence for a graben is provided by the restricted extent of the sediments and basalt, which have not been reported in this general area. Approximately 10 to 20 km east of the Tranz claims, the Beaver Fault juxtaposes younger rocks on the north side against older units to the south, which indicates that the north side was dropped down.

MINERALIZATION

No sedex-type lead-zinc mineralization has been found on the Tranz claims. An exhalative unit containing barite and pyrite was found to the north by ZXJV in 1982 and was staked as two claim blocks, Mars and Rush.

GEOCHEMISTRY

Geochemical results for the Tranz area are plotted on Figure 1, in pocket. Results were generally disappointing.

The Tranz claims were staked on a cluster of ferricrete and calcrete spring gossans that contain anomalous metal response. A total of 67 soil, 11 gossan and 3 rock samples were collected. The best values, which range up to 27,400 ppm Zn, 6500 ppm Ni and 1500 ppm Co, were obtained from the iron-rich gossans. Most soil samples collected nearby gave low values. Some of these were probably collected from areas underlain by alluvial gravels and may not be representative of bedrock. Values ranged up to 45 ppm Pb, 10,000 ppm Zn, 43 ppm Cu and 0.7 ppm Ag.

Approximately 30 rock chip samples, each taken over 10 m intervals, were collected from the Road River shales along the river bank below the gossans and along a creek to the northwest. They were analyzed for Cu, Mo, Pb, Zn, Ag, Ni, Co and V. The results are plotted on Figure 1. Values of 86 ppm lead and 1650 ppm Zn from two rock chip samples are noteworthy although the overall results indicate that the shales have a fairly low metal content.

Three water samples were collected from the springs precipitating anomalous ferricrete along the upper contact of the Ordovician-Silurian quartzite unit on the alluvial terrace (see Plate 1 on following page). The spring water values were quite low, ranging from 120 to 180 ppm sulphate, 16 to 24 ppb iron, 56 to 250 ppb zinc, 4 to 8 ppb lead and less than 2 ppb copper. The origin of anomalous metals in the ferricrete is unknown but the source is most likely Road River Formation or Lower Earn Group shales.

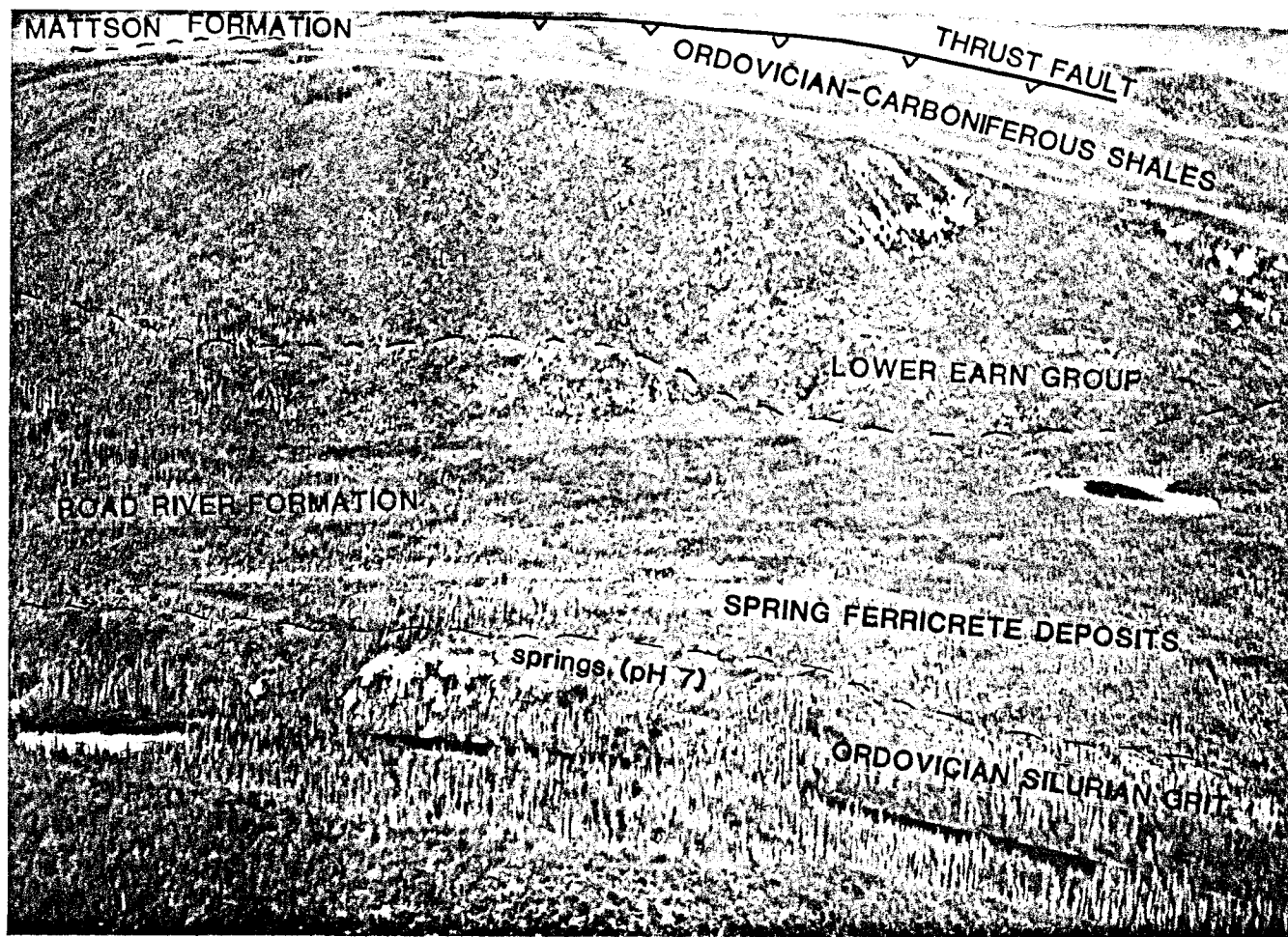


PLATE 3 - LOOKING NORTHEAST TO BEAVER RIVER AND TRANZ CLAIMS

CONCLUSIONS

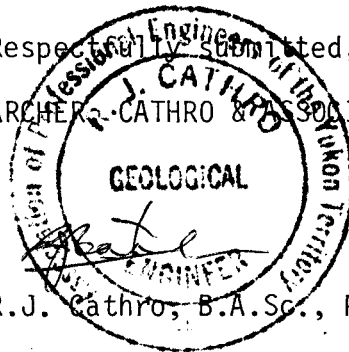
Shale units within the Tranz claims and nearby were exposed during 1982 and gave generally disappointing results as potential hosts for sedex mineralization.

The claims lie close to a middle Devonian carbonate shale facies change. Bedded barite and pyrite found to the north of the Tranz claims and along strike indicate that exhalative processes were active during deposition of shales assigned to the upper Devonian-Mississippian Lower Earn Group.

No sedex-type lead-zinc mineralization has been found on the Tranz claims. They were staked on geochemical anomalies consisting of strongly anomalous zinc, nickel and cobalt values precipitated from spring water into a ferricrete gossan. The source of the metals is difficult to predict because of overburden cover, although the springs appear to drain favourable Devonian shales.

The Tranz claims warrant further study, particularly more comparison of their geochemical response with case histories from other sedex deposits.

Respectfully submitted,
ARCHER-CATHRO & ASSOCIATES (1981) LIMITED



R.J. Cathro, B.A.Sc., P.Eng.

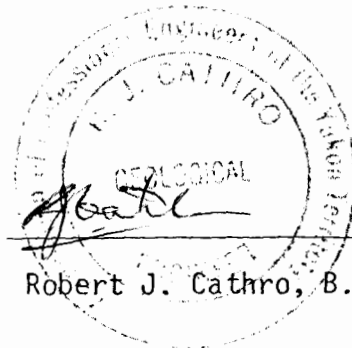
/mc

APPENDIX A - STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Robert J. Cathro, with business addresses in Whitehorse, Yukon Territory and Vancouver, British Columbia, and residential address in West Vancouver, British Columbia, do hereby declare:

1. I am a 1959 graduate of the University of British Columbia in geological engineering.
2. I have been engaged in geological engineering for over twenty years, the past seventeen of which have been as a consultant.
3. I am a registered professional engineer in British Columbia and in Yukon Territory.
4. I have supervised the work described in this report.



Robert J. Cathro, B.A.Sc., P.Eng.

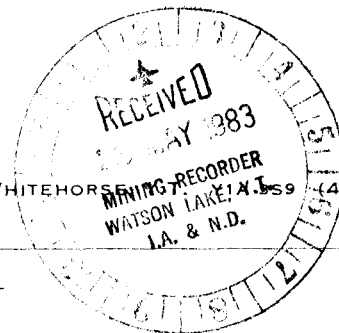
ARCHER, CATHRO

& ASSOCIATES LIMITED

CONSULTING GEOLOGICAL ENGINEERS

VANCOUVER, B.C. (604) 688-2568

Box 4127, WHITEHORSE (403) 667-4415



1016 - 510 WEST HASTINGS STREET
VANCOUVER, B.C. V6B 1L8

AFFIDAVIT

I, Joan Mariacher, of Vancouver, B.C. make oath and say:

That to the best of my knowledge the attached Statement of Expenditures for exploration work on the Tranz 1-14 mineral claims on Claim Sheet 95C/5 is accurate.

Joan Mariacher

Sworn before me at Vancouver, B.C.

this 17th day of

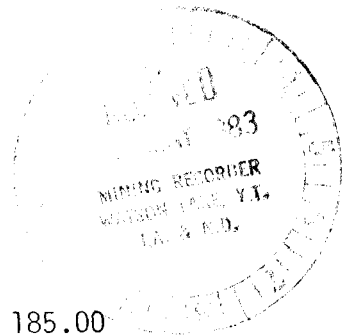
January, 1983

C. R. O.

Notary, Yukon Territory

091459

Statement of Expenditures
 Tranz 1 - 14 Mineral Claims
Field Work July 12 - August 17, 1982



Labour

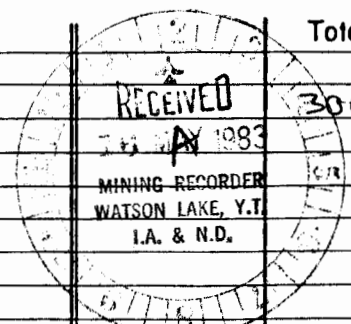
| | | |
|---|---------------|-------------|
| Z. Rebic (geologist) - August 9; 1 day at \$185/day | \$ 185.00 | |
| H. Oiye (geologist) - August 5; 1 day at \$185/day | 185.00 | |
| R. Parrish (geologist) - August 5,6,14,15,16,17; total 6 days at \$209/day | 1,254.00 | |
| M. Legassicke (field assistant) - July 12; 1 day at \$140/day | 140.00 | |
| W. Halleran (field assistant) - August 6; 1 day at \$119/day | <u>119.00</u> | \$ 1,883.00 |

Expenses

| | | |
|---|---------------|--------------------|
| Highland Bell contract Bell 206B helicopter - 22.1 hours at \$374/hour plus fuel at 22 gal/hr at \$3.50/gal delivered to site | 9,967.00 | |
| Camp and field costs - 10 mandays at \$45/day | <u>450.00</u> | <u>10,417.00</u> |
| | | <u>\$12,300.00</u> |

In Account with
 ZX JOINT VENTURE
 JULY 31, 1982

Project -
 Date --



MANAGEMENT

JULY

Total

LABOUR

Supervisory

Field

- ✓ R. CARNE - July 20, 25, 31 @ 3400
- ✓ C. MAIN - July 1-31 @ 3400
- ✓ Z. REBIC - July 1-31 @ 2400
- ✓ G. DENNETT - July 1-17 @ 2100
- ✓ B. HALLERAN - July 1-31 @ 1900
- ✓ W. PENNO - July 14-22 @ 2100
- ✓ R. PARNISH - July 27-31 @ 3400
- ✓ L. CARNE - July 1-31 @ 1250
- ✓ M. BREKKE - July 1, 4, 17-20 @ 1200
- ✓ J. DUKE - July 14-31 @ 1250

548.00
 3400.00
 2400.00
 1152.00
 1900.00
 610.00
 567.00
 1250.00
 334.00
 1016.00

3000

plus 50%

Casual

- J. Carne - July 20, absent ree. Watson Lake area
- M. BRASSIEK - July 1-14; 14 days @ 104

235.00
 1456.00

13,177.00
 6,588.50
 1691.00

EXPENSES

Accounting

JULY

550.00

Expediting

JULY

1400.00

Room & Board in Whse

Seven man/day @ \$45

315.00

total days at \$ /day

Field equipment from AC stock

Xerox copies, 339 copies at 25¢/copy

Radio rental 513 x 100 July 1-31

84.75
 400.00

Rental AC BLUE truck July 1-31

at \$40 /day

plus (27717 to 33465) 5745

kms at 25¢/km

2,676.25

Petty cash 4.60 C2; 4.80 D1; 7.80 D3; 3.95 D1; 3.63 C2; 2.80 D2; 42.90 D3; 32 D4

Telephone 10.00 D1; 10.39 D2; 20 D4; 31.65 D3; 10 D4; 17 D2

198.72

Blueprinting, 228 sq. ft. Ozalid at 30 c/ft plus

sq. ft. Dilar at \$ /ft.

68.40

Drafting, 42 hrs. at \$ 22 /hr.

924.00

draw return credits to QLP in ^{now} ~~then~~

352.00

sub-det 3.7 hr Bld 47 from QLP on July 20 at

\$290/hr plus 30.6 gal fuel @ \$5.41/gal

1201.55

rental Arco, Carter snow-blower - Honda generator July 1-31

@ 3.50/day

108.50

Postage

100.00

Telephone

167.50

Rental Ac Brown truck, 2 days @ \$40/day plus 350 kms @ 25¢

3.90

Northon Metals

14.50

Reissner General

27.71

Kits Marine

8542.2

32,998.1

Credit

sub-det C. MAIN, 20 days in July @ \$265

(5300.00)

Handwritten sub-det to Nevada (88970 kmtr + 2384.64 fuel)

(11,354.64)

G1

G3

(16,654.1)

Total

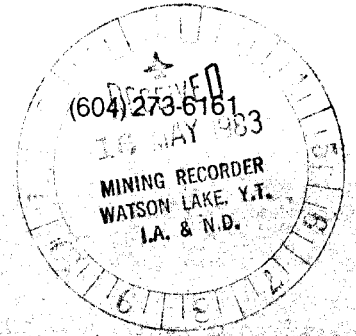
16,344.1

Project - ZX JOINT VENTURE
 Date -- AUG 31, 1982

| | | Total |
|----------------------|--|-----------|
| MANAGEMENT | | |
| August | | |
| LABOUR | | |
| Supervisory | M.P. Phillips - 1 hr review claim data | 37.50 |
| Field | 3 R. CARNE - AUG 1-2, 18, 24-31 @ 3400/mo. | 1206. |
| | - C. MAIN - AUG 1-3; 8-31 @ 3400/mo | 2962. |
| | 1 Z. REBIC - AUG 1-31 @ 2400/mo | 2400. |
| | - B. HALLERAN - AUG 1-31 @ 1900 | 1900. |
| | 1 L. CARNE - AUG 1-31 @ 1250 | 1250. |
| | - R. PARRISH - AUG 1-27 @ 3400 | 2834. |
| | 1 J. DUKE - AUG 1-5 @ 1750 | 282. |
| | 2 H. OIYE - AUG 1-31 @ 2400 | 2400. |
| | - J. DENNETT - AUG 26-31 @ 2100 | 406. |
| | - M. LOBLAW - AUG 5 @ 1400 | 47. |
| | - M. WONG - AUG 22-24 @ 1550 | 155. |
| | 3 W. DIENNU - AUG 12-26 @ 2100 | 1016. |
| | plus 50 % | 16,858 |
| Casual | 1 - A. GRILING - 2 1/4 DAYS CAMP MOBILIZATION AT \$180/DAY | 405. |
| EXPENSES | | |
| Accounting | Aug | 500.00 |
| Expediting | | 1400.00 |
| Room & Board in Whse | 12 MAN DAYS @ 45/d. | 540.00 |
| | total days at \$ /day | |
| | Field equipment from AC stock | 35.20 |
| | Xerox copies, 189 copies at 25¢/copy | 47.25 |
| | Radio rental SBX 100 for August | 400.00 |
| | Rental AC Blue truck Aug 1-31 at \$40 /mo. day | 2271.50 |
| | plus (33465 to 37591) 4126 kms at 25¢/km | 101.10 |
| | Petty cash 11.40 C2; 8.03; 69.02; 4.01; 8.70 D2 | 2.25 |
| | Telephone 2.25 | 2.10 |
| | Blueprinting, 7.0 sq. ft. Ozalid at 30¢/ft plus sq. ft. Dilar at \$ /ft. | 264.00 |
| | Drafting, 12 hrs. at \$ 22 /hr. | |
| | Water Lab Oil (QLP credit deducted from bill) | 177.00 |
| | Rental small AC Honda generator @ 7.50/day | 108.00 |
| | Rental AC brown van, 4 days @ \$40/day plus 1150 km @ 25¢/km | 447.50 |
| | Whiteline Trench | 146.33 |
| | Clones | 26.69 |
| | bits cones | 9.23 |
| | | 6,478.11 |
| | | 35,207.6 |
| CREDITS | | |
| | SUB-LET H. OIYE 1 DAY (AUG 8) @ 190 | (190.) |
| | SUB-LET C. MAIN AUG 1-3 (3 DAYS) @ 235 | (705.) |
| | SUB-LET HALLERAN, AUG 25 to 27 @ 124/day | (372.) |
| | Sub-let Blue van to GOV Aug 7 | (165.00) |
| | Place Dr; (#228 help; 858.10 Whiting) | (1086.10) |
| | Total | (2518.10) |
| | | 32,689.5 |

HIGHLAND HELICOPTERS LTD.

4240 Agar Drive, Vancouver Airport South, Richmond, B.C. V7B 1A3



IN ACCOUNT WITH
 ARCHER CATHRO & ASSOCIATES LTD.
 Box 4127
 WHITEHORSE, YUKON
 Y1A 3S9

DATE Aug. 12/8

INVOICE No. 25794

CUSTOMER P.O. # _____

| DATE | TICKET No. | FLIGHT TIME | RATE-HR. | CHARGE |
|------------|------------|------------------|-----------------|--------------------|
| Aug. 5/82 | 64841 | 5.9 Hrs. | | |
| Aug. 6/82 | 64842 | 5.6 Hrs. | | |
| Aug. 7/82 | 64843 | 7.4 Hrs. | | |
| Aug. 8/82 | 64844 | 4.7 Hrs. | | |
| Aug. 9/82 | 64847 | 4.0 Hrs. | | |
| Aug. 10/82 | 64848 | 1.0 Hrs. | | |
| Aug. 11/82 | 64850 | 3.8 Hrs. | | |
| Aug. 12/82 | 64851 | 1.2 Hrs. | | |
| | | <u>33.6 Hrs.</u> | <u>\$374.00</u> | <u>\$12,566.40</u> |

2X

Fuel supplied by customer

Handwritten notes:
 64841-64847
 64848-64851

RATE Class & Contract
 HHR
 35.6 EN
 230

Rate - Not to pay from interest account
 Interest - 5% per month will be
 charged on all unpaid accounts



Serving Western Canada since 1959

FLIGHT REPORT HIGHLAND HELICOPTERS LTD. VANCOUVER, B.C.

64815

CHARTERER Archer Cathro

ADDRESS _____

DATE July 12/82

REG. HHR TYPE _____

PILOT SIGNATURE Pat Rooney BASE Trout R / 7000 Nelson FUEL/LITRE CUST. HH _____

| DATE | HOTEL | MEALS | TRAVEL | TEL - TEL | TAXI | MISC. |
|------|-------|-------|--------|-----------|------|-------|
| | | | | | | |
| | | | | | | |

EXPLANATION

OPERATION REMARKS

Crew to Beaver Area

ZXJV

time 2.6

| TIME CLOCK READING from COLLECTIVE CONTROLS | | | |
|---|--------------|----------|--|
| | FLIGHT 1 | FLIGHT 2 | |
| END READING | <u>267 8</u> | | |
| START READING | <u>265 2</u> | | |
| TOTAL FLT. TIME | <u>26</u> | | |

INVOICE RATE C 4 7

CUSTOMER P.O. NO. 8225

ZONE AND/OR PROVINCE _____

AUTHORIZED BY CHARTERER REP.

Blata Rebr

| | |
|--------------|-----------|
| REVENUE HRS. | <u>26</u> |
| NON-REVENUE | <u>—</u> |
| CREW EX'S \$ | |

FLIGHT REPORT HIGHLAND HELICOPTERS LTD. VANCOUVER, B.C.

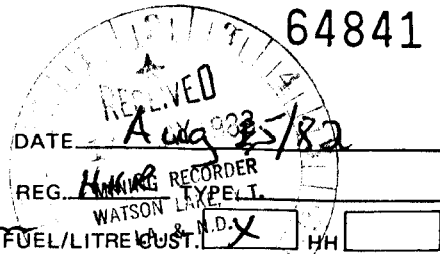
64841

CHARTERER Archer Cathro & Associates (1981) Ltd

ADDRESS Box 4127

Whitehorse, Y.T. YIA 359

PILOT SIGNATURE Pat Rooney BASE Trout R / 7th Nov



| DATE | HOTEL | MEALS | TRAVEL | TEL - TEL | TAXI | MISC. | EXPLANATION |
|------|-------|-------|--------|-----------|------|-------|-------------|
| | | | | | | | |
| | | | | | | | |

OPERATION REMARKS

Crew to Tranz claims
 Recon NE Coal R.
 ZXJV

~~Hours 2.0~~
 Hours 3.0

| TIME CLOCK READING from COLLECTIVE CONTROLS | | | |
|---|----------|----------|--|
| | FLIGHT 1 | FLIGHT 2 | |
| END READING | 317 | 0 | |
| START READING | 311 | 1 | |
| TOTAL FLT. TIME | 5 | 9 | |

INVOICE RATE 4 7

CUSTOMER P.O. NO. 8225

ZONE AND/OR PROVINCE

AUTHORIZED BY CHARTERER REP.

Blota Rebr

| | |
|--------------|----|
| REVENUE HRS. | 59 |
| NON-REVENUE | — |
| CREW EX'S \$ | |

FLIGHT REPORT, HIGHLAND HELICOPTERS LTD. VANCOUVER, B.C.

64842

CHARTERER Archer Sathro

ADDRESS _____

DATE Aug 6/82

REG. HR TYPE _____

PILOT SIGNATURE Pat Rooney BASE Trout R / Ft Nelson FUEL/LITRE CUST. HH

| DATE | HOTEL | MEALS | TRAVEL | TEL - TEL | TAXI | MISC. | EXPLANATION |
|------|-------|-------|--------|-----------|------|-------|-------------|
| | | | | | | | |
| | | | | | | | |

OPERATION REMARKS

Crews to Tranz claims
Recon/Sample N.E Coal R
EXJ/

Tranz 3.0

| TIME CLOCK READING from COLLECTIVE CONTROLS | | | |
|---|----------|----------|--|
| | FLIGHT 1 | FLIGHT 2 | |
| END READING | 322 | 6 | |
| START READING | 317 | 0 | |
| TOTAL FLT. TIME | 5 | 6 | |

INVOICE RATE 4 7

CUSTOMER P.O. NO. 8225

ZONE AND/OR PROVINCE _____

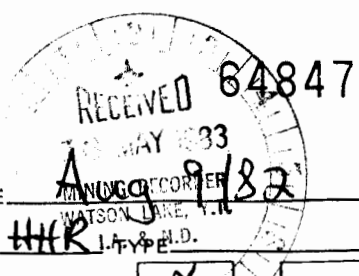
AUTHORIZED BY
CHARTERER REP. Zlata Rebric

| | |
|--------------|-----------|
| REVENUE HRS. | <u>56</u> |
| NON-REVENUE | <u>—</u> |
| CREW EX'S \$ | |

FLIGHT REPORT HIGHLAND HELICOPTERS LTD. VANCOUVER, B.C.

CHARTERER Archer Cathro

ADDRESS _____



DATE Aug 9/82
REG. HHR I.F. & H.D.

PILOT SIGNATURE Pat Rooney BASE Trout R/7th Nelson FUEL/LITRE CUST. X HH _____

| DATE | HOTEL | MEALS | TRAVEL | TEL - TEL | TAXI | MISC. | EXPLANATION |
|------|-------|-------|--------|-----------|------|-------|-------------|
| | | | | | | | |
| | | | | | | | |

OPERATION REMARKS

Crew to 95c/14, Trans claiming
stream sample Beaver River

ZX JV

mess 2.5
tang 1.5

| TIME CLOCK READING from COLLECTIVE CONTROLS | | | |
|---|----------|----------|--|
| | FLIGHT 1 | FLIGHT 2 | |
| END READING | 339 | 4 | |
| START READING | 335 | 4 | |
| TOTAL FLT. TIME | 40 | | |

| | | | |
|---|---------------------------------|--------------|----|
| INVOICE RATE <input checked="" type="checkbox"/> 4 <input type="checkbox"/> 7 | AUTHORIZED BY CHARTERER REP. | REVENUE HRS. | 40 |
| CUSTOMER P.O. NO. <u>8225</u> | <u>Blata Zebic</u> | NON-REVENUE | |
| ZONE AND/OR PROVINCE _____ | | CREW EX'S \$ | |

FLIGHT REPORT HIGHLAND HELICOPTERS LTD. VANCOUVER, B.C.

64853

CHARTERER Archer Cathro

ADDRESS _____

DATE Aug 14/82

REG. HHR TYPE _____

PILOT SIGNATURE Pat Rooney BASE Trout R / Fort Nelson FUEL/LITRE CUST. HH

| DATE | HOTEL | MEALS | TRAVEL | TEL - TEL | TAXI | MISC. | EXPLANATION | | | | | | | | | | | | |
|--------------------------------|----------|----------|--------|-----------|------|-------|---|--|----------|----------|-------------|-------|--|---------------|-------|--|-----------------|-----|--|
| OPERATION REMARKS | | | | | | | TIME CLOCK READING from COLLECTIVE CONTROLS <table border="1" style="margin: 5px auto;"> <thead> <tr> <th></th> <th>FLIGHT 1</th> <th>FLIGHT 2</th> </tr> </thead> <tbody> <tr> <td>END READING</td> <td>357 0</td> <td></td> </tr> <tr> <td>START READING</td> <td>351 0</td> <td></td> </tr> <tr> <td>TOTAL FLT. TIME</td> <td>6 0</td> <td></td> </tr> </tbody> </table> | | FLIGHT 1 | FLIGHT 2 | END READING | 357 0 | | START READING | 351 0 | | TOTAL FLT. TIME | 6 0 | |
| | FLIGHT 1 | FLIGHT 2 | | | | | | | | | | | | | | | | | |
| END READING | 357 0 | | | | | | | | | | | | | | | | | | |
| START READING | 351 0 | | | | | | | | | | | | | | | | | | |
| TOTAL FLT. TIME | 6 0 | | | | | | | | | | | | | | | | | | |
| Crews to Crow R / Miellaur R / | | | | | | | | | | | | | | | | | | | |
| Varley Cr. | | | | | | | | | | | | | | | | | | | |
| ZXJV | | | | | | | | | | | | | | | | | | | |
| Aug 3.0 | | | | | | | | | | | | | | | | | | | |

| | |
|--|---|
| INVOICE RATE C <input checked="" type="checkbox"/> 4 <input type="checkbox"/> 7 _____ CUSTOMER P.O. NO. <u>8225</u> ZONE AND/OR PROVINCE _____ | AUTHORIZED BY CHARTERER REP. _____ REVENUE HRS. <u>6 0</u> NON-REVENUE _____ CREW EX'S \$ _____ <i>Blaine Reber</i> |
|--|---|

FLIGHT REPORT HIGHLAND HELICOPTERS LTD. VANCOUVER, B.C.

64855

CHARTERER Archer Cathco

ADDRESS _____

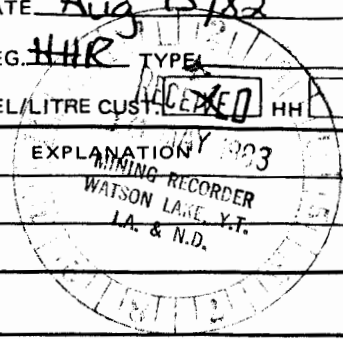
DATE Aug 15/82

REG. HR TYPE _____

PILOT SIGNATURE Pat Rooney BASE Troust R / 7000 Nelson

FUEL/LITRE CUST. RECEIVED HH _____

| DATE | HOTEL | MEALS | TRAVEL | TEL - TEL | TAXI | MISC. |
|------|-------|-------|--------|-----------|------|-------|
| | | | | | | |
| | | | | | | |



OPERATION REMARKS
Crew to Meilleur R / Mars / Spruce Lk
EX JV
Time 3.0

| TIME CLOCK READING | | | | |
|---------------------|----------|---|----------|--|
| from | | | | |
| COLLECTIVE CONTROLS | | | | |
| | FLIGHT 1 | | FLIGHT 2 | |
| END READING | 361 | 5 | | |
| START READING | 357 | 6 | | |
| TOTAL FLT. TIME | 3 | 9 | | |

INVOICE RATE 4 7
 CUSTOMER P.O. NO. 8225
 ZONE AND/OR PROVINCE _____

AUTHORIZED BY CHARTERER REP. Zlate Belic
 REVENUE HRS. 3 9
 NON-REVENUE —
 CREW EX'S \$ _____

FLIGHT REPORT HIGHLAND HELICOPTERS LTD. VANCOUVER, B.C.

64856

CHARTERER Archer Cathro

ADDRESS _____

DATE Aug 16/82

REG. HHR TYPE 1

PILOT SIGNATURE Pat Rooney BASE Troust R / 700⁰ ~~Delson~~

FUEL/LITRE CUST. HH

| DATE | HOTEL | MEALS | TRAVEL | TEL - TEL | TAXI | MISC. |
|------|-------|-------|--------|-----------|------|-------|
| | | | | | | |
| | | | | | | |

EXPLANATION ?

OPERATION REMARKS

Crew to Meilleur R / Mars
ZX JV

was from 3.0

| TIME CLOCK READING from COLLECTIVE CONTROLS | | | |
|---|------------|----------|--|
| | FLIGHT 1 | FLIGHT 2 | |
| END READING | <u>370</u> | <u>2</u> | |
| START READING | <u>362</u> | <u>8</u> | |
| TOTAL FLT. TIME | <u>7</u> | <u>4</u> | |

INVOICE RATE C 4 7

CUSTOMER P.O. NO. 8225

ZONE AND/OR PROVINCE _____

AUTHORIZED BY CHARTERER REP. Glato Belin

| | | |
|--------------|----------|----------|
| REVENUE HRS. | <u>7</u> | <u>4</u> |
| NON-REVENUE | <u>—</u> | |
| CREW EX'S \$ | | |

FLIGHT REPORT HIGHLAND HELICOPTERS LTD. VANCOUVER, B.C.

64858

CHARTERER Archer Cathro

ADDRESS _____

DATE Apr 2 17/82
 REG. HHR TYPE _____
 FUEL/LITRE COST RECORDER X 333
 MINING RECORD Y.T.
 EXPLANATION _____

PILOT SIGNATURE Pat Rooney BASE Trait R / Food Nelson

| DATE | HOTEL | MEALS | TRAVEL | TEL - TEL | TAXI | MISC. |
|------|-------|-------|--------|-----------|------|-------|
| | | | | | | |
| | | | | | | |
| | | | | | | |

OPERATION REMARKS

Crew to Tropical / Grayling R / Mars
ZXJV

TMA23 3.0

| TIME CLOCK READING from COLLECTIVE CONTROLS | | | |
|---|------------|----------|----------|
| | FLIGHT 1 | | FLIGHT 2 |
| END READING | <u>374</u> | <u>5</u> | |
| START READING | <u>370</u> | <u>2</u> | |
| TOTAL FLT. TIME | <u>4</u> | <u>3</u> | |

INVOICE RATE C 4 7

CUSTOMER P.O. NO. 8225

ZONE AND/OR PROVINCE _____

AUTHORIZED BY
CHARTERER REP.

Zlata Rebric

| | | |
|--------------|----------|----------|
| REVENUE HRS. | <u>4</u> | <u>3</u> |
| NON-REVENUE | | |
| CREW EX'S \$ | | |



WATSON LAKE OIL DISTRIBUTORS LTD.
 BOX 371, WATSON LAKE, YUKON TERR. Y0A 1C0
 PHONE 536-7467

PACIFIC PETROLEUMS LTD.

AGENT FOR THIS LOADING NO. METER READING FINISH

PREVIOUS READING NO. METER READING START SOLD TO

ARCHER CATHRO

ORDER NO. ZX 5 V
 DATE 22 6 82
 DAY MTH. YR.

TERMS Charge 13714

| NO. | SIZE | DESCRIPTION | QUANTITY | PRICE | AMOUNT |
|-------|------|---|----------|-------|--------|
| | | PREMIUM C <input type="checkbox"/> M <input type="checkbox"/> | | | |
| | | REGULAR C <input type="checkbox"/> M <input type="checkbox"/> | | | |
| | | UNLEADED C <input type="checkbox"/> M <input checked="" type="checkbox"/> | | | |
| | | DIESEL C <input type="checkbox"/> M <input type="checkbox"/> | | | |
| | | DOMESTIC * FURNACE OIL | | | |
| | | * STOVE OIL | | | |
| 5/205 | | J P 4 | 1025 | 47.0 | 481.75 |
| | | CARTAGE TO AIRPORT BC YUKON | | 40.00 | |
| 5/205 | | DRUMS TELFON | 5 | 35.00 | 175.00 |
| | | FEDERAL EXCISE TAX | | | |
| | | GASOLINE TAX | | 00.7 | 7.18 |
| | | FUEL OIL TAX | | | |
| | | PROVINCIAL SALES TAX | | | |

TAX LICENCE NUMBER ETC. TOTAL 703.93

RECEIVED THE ABOVE GOODS IN GOOD ORDER AND I/WE AGREE TO PAY THE ABOVE AMOUNT

CUSTOMER SIGNATURE R. Blaine BCYAS. 5-538

RECEIVED PAYMENT INTEREST OF 1 1/2% PER MONTH (18% PER YEAR) MAY BE CHARGED ON OVERDUE ACCOUNTS.

* UNLAWFUL TO USE FOR OTHER THAN LIGHTING AND HEATING PURPOSES.

THIS IS YOUR INVOICE



WATSON LAKE OIL DISTRIBUTORS LTD.
 BOX 371, WATSON LAKE, YUKON TERR. Y0A 1C0
 PHONE 536-7467

PACIFIC PETROLEUMS LTD.

AGENT FOR THIS LOADING NO. METER READING FINISH

PREVIOUS READING NO. METER READING START SOLD TO

ARCHER - CATHRO

ORDER NO. PROJECT-ZX
 DATE 23 06 82
 DAY MTH. YR.

TERMS CHARGE 13728

| NO. | SIZE | DESCRIPTION | QUANTITY | PRICE | AMOUNT |
|-----|------|---|----------|-------|---------|
| | | PREMIUM C <input type="checkbox"/> M <input type="checkbox"/> | | | |
| | | REGULAR C <input type="checkbox"/> M <input type="checkbox"/> | | | |
| | | UNLEADED C <input type="checkbox"/> M <input checked="" type="checkbox"/> | | | |
| | | DIESEL C <input type="checkbox"/> M <input type="checkbox"/> | | | |
| | | DOMESTIC * FURNACE OIL | | | |
| | | * STOVE OIL | | | |
| | | J P 4 | 7971 | 47.0 | 3746.37 |
| | | CARTAGE TO ZY ONE WAY | | | |
| | | DRUMS 145 MILES @ | 140 | | 203.00 |
| | | FEDERAL EXCISE TAX | | | |
| | | GASOLINE TAX | | 00.7 | 55.80 |
| | | FUEL OIL TAX | | | |
| | | PROVINCIAL SALES TAX | | | |

TAX LICENCE NUMBER ETC. TOTAL 4005.17

RECEIVED THE ABOVE GOODS IN GOOD ORDER AND I/WE AGREE TO PAY THE ABOVE AMOUNT

CUSTOMER SIGNATURE S-539

RECEIVED PAYMENT INTEREST OF 1 1/2% PER MONTH (18% PER YEAR) MAY BE CHARGED ON OVERDUE ACCOUNTS.

* UNLAWFUL TO USE FOR OTHER THAN LIGHTING AND HEATING PURPOSES.

THIS IS YOUR INVOICE



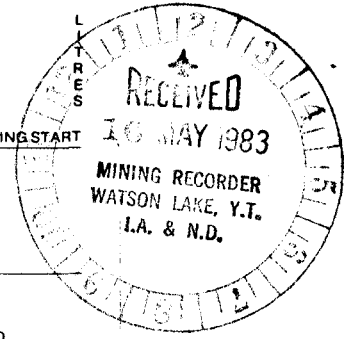
WATSON LAKE OIL DISTRIBUTORS LTD.

BOX 371, WATSON LAKE, YUKON Y0A 1C0

PHONE 536-7467

THIS LOADING NO. METER READING FINISH

PREVIOUS READING NO. METER READING START
SOLD TO



archer - cathro

Z X

ORDER NO.
DATE

53 7 29
YR MTH DAY

TERMS

charge

1083729

| NO. | SIZE | DESCRIPTION | QUANTITY | PRICE | AMOUNT |
|-----|------|--|-------------|-------------|----------------|
| | | PREMIUM C <input type="checkbox"/> M <input type="checkbox"/> | | | |
| | | REGULAR C <input type="checkbox"/> M <input type="checkbox"/> | | | |
| | | UNLEADED REGULAR C <input type="checkbox"/> M <input type="checkbox"/> | | | |
| | | DIESEL C <input type="checkbox"/> M <input type="checkbox"/> | | | |
| | | DOMESTIC * FURNACE OIL | | | |
| | | * STOVE OIL | | | |
| | | <i>5 P4 (BULK)</i> | <i>8275</i> | <i>47.0</i> | <i>3884.25</i> |
| | | <i>DRUMS cartage & HAND</i> | | | <i>420.50</i> |
| | | FEDERAL EXCISE TAX | | | |
| | | GASOLINE TAX | | <i>0.07</i> | <i>57.93</i> |
| | | FUEL OIL TAX | | | |
| | | PROVINCIAL SALES TAX | | | |

TAX LICENCE NUMBER ETC.

TOTAL

4,367.68

RECEIVED THE ABOVE GOODS IN GOOD ORDER AND I/WE AGREE TO PAY THE ABOVE AMOUNT

CUSTOMER SIGNATURE

SSSB

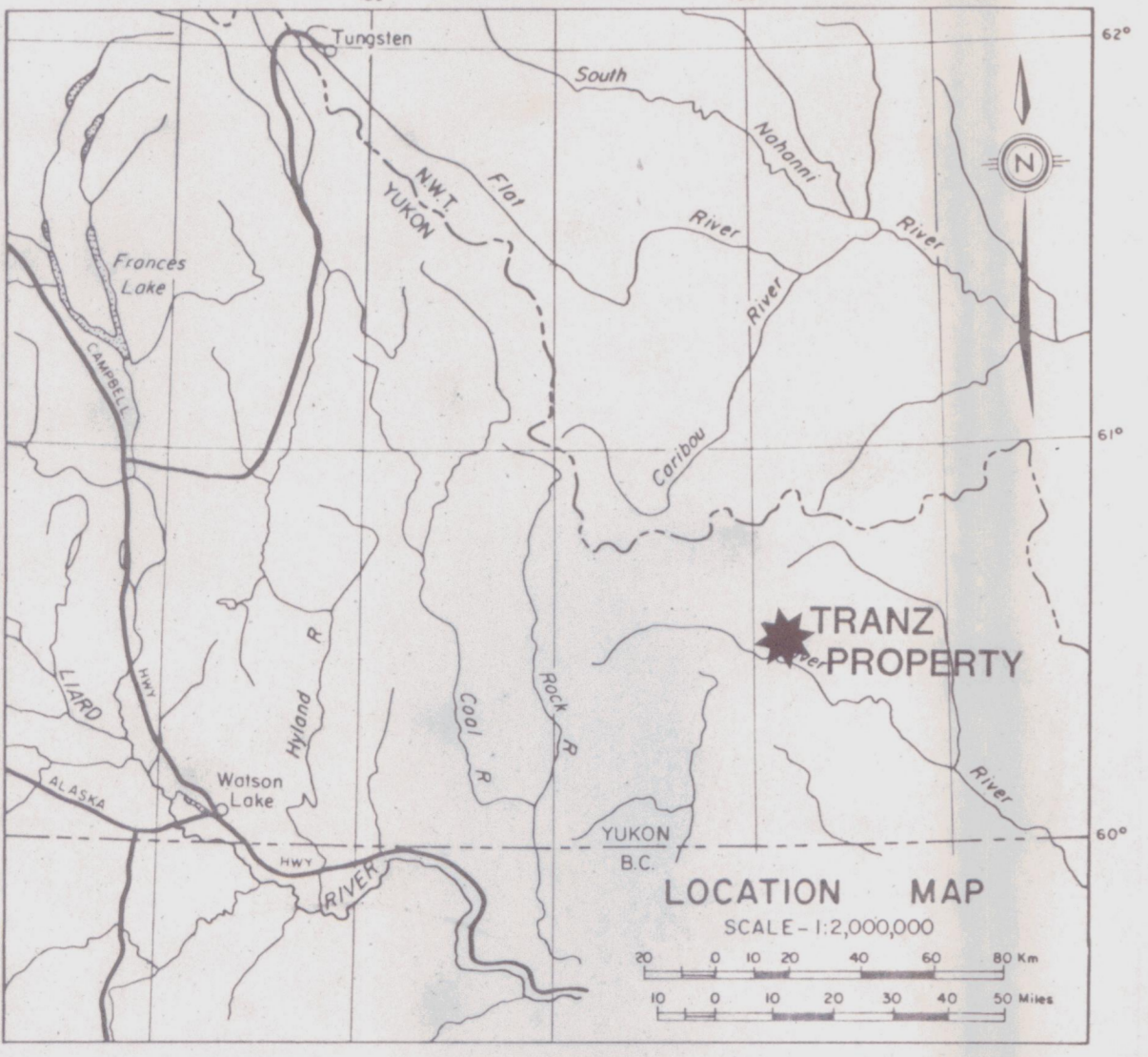
RECEIVED PAYMENT

INTEREST OF 1.75% PER MONTH (21% PER YEAR) MAY BE CHARGED ON OVERDUE ACCOUNTS.

* UNLAWFUL TO USE FOR OTHER THAN LIGHTING AND HEATING PURPOSES.

CUSTOMER INVOICE

6101 8007



- LEGEND - Includes units found off this map
- Tertiary (T)
 - Plagioclase porphyry basalt.
 - Fluvial conglomerate with minor black shales.
 - CARBONIFEROUS TO PERMIAN
 - MATTSON FORMATION - Thick-bedded, massive quartz-arenite, sandstone, siltstone.
 - MIDDLE DEVONIAN
 - Crinoidal carbonates.
 - MISSISSIPPIAN TO DEVONIAN
 - LOWER PARK GROUP - siliceous, carbonaceous shales.
 - Includes:
 - Soft non-siliceous shales.
 - Exhalite - siliceous, quartzite shale with barite.
 - SILURIAN TO DEVONIAN
 - Volcanic breccia and Feldspar quartz porphyry.
 - ORDOVICIAN TO SILURIAN
 - ROAD RIVER FORMATION - Blue-grey graphitic shale, dolomitic siltstone, silty limestone.
 - ORDOVICIAN TO SILURIAN
 - Gritty quartz sandstone and quartz pebble grit.
 - ORDOVICIAN
 - SUNNYSIDE FORMATION - buff weathering limestone.
 - Water sample site, see appendix A.
 - Soil sample site, values in ppm: Lead, Zinc, Copper, Silver.
 - Mineral occurrence.

Figure 1
 ARCHER, CATHRO & ASSOCIATES (1981) LIMITED
**GEOLOGY AND
 Pb, Zn, Cu AND Ag GEOCHEMISTRY**

TRANZ CLAIMS
 ZX JOINT VENTURE

