

EXPLORATION REPORT-YEAR 1980  
ON THE BEAR RIVER PROPERTIES  
WIND RIVER AREA  
MAYO MINING DISTRICT, YUKON



IRON MINERAL CLAIMS	1 to 14 & 17 to 30
ADUB MINERAL CLAIMS	1 to 18
HAIL MINERAL CLAIMS	1 to 12
JUDY MINERAL CLAIMS	1 to 2
SNOWSTAR MINERAL CLAIMS	1 to 8

CLAIM SHEETS - 106 D-16

LOCATION:

090868

Report by:

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Exploration Manager

ZELON ENTERPRISES LTD.  
904-510 West Hastings Street  
Vancouver, B.C.  
V6B 1L8

Exploration Program Conducted  
Between May 28th and August 20th, 1980.

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

\$ 20,400.<sup>00</sup>

~~Resident Geologist or  
Resident Mining Engineer~~

~~Considered as representation work under  
Section 53 (4) Yukon Quartz Mining Act.~~

*Ruth Debicki* *Sept 30/81*

for  
Commissioner of Yukon Territory

808000

FROM: Mining Recorder at MAYO

TO: Supervising Mining Recorder at Whitehorse, Y.T.

FOR ACTION ARE:

NEW APPL'N for PLACER LEASE to PROSPECT: Name: \_\_\_\_\_ Lease No. \_\_\_\_\_

RENEWAL APPL'N PLACER LEASE to PROSPECT: Name: \_\_\_\_\_ Lease No. \_\_\_\_\_

AFFIDAVIT of EXPENDITURE on PLACER LEASE. Name: \_\_\_\_\_ Lease No. \_\_\_\_\_

ASSIGNMENT of PLACER LEASE No. \_\_\_\_\_  
From: \_\_\_\_\_ To: \_\_\_\_\_

GROUPING APPL'N UNDER SEC. 52(2) PLACER MINING ACT.  
Owner: \_\_\_\_\_

DIAMOND DRILL LOGS:  
Claims: \_\_\_\_\_ Claim sheet no: \_\_\_\_\_

QUARTZ ASSESSMENT REPORT:  
Claims: IRON; ADUB; HAIL;  
JUDY & SNOWSTAR  
Type of report: GC; GP; PHYSICAL  
Claim sheet no: 106-D-16  
Submitted by: LEMON ENTERPRISES LTD

Cls. work performed on: \_\_\_\_\_

\$ Req. for ren. application  
\$ 20400.00

[Signature]  
Signature

REPLY ACTION:

Date Ret. \_\_\_\_\_

000868

090868

Signature

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I. SUMMARY

Zelon Enterprises has conducted a uranium exploration program for Texaco Canada Resources Ltd., covering 20,000 square miles in North Central Yukon Territory. Airborne radiometrics and geological prospecting outlined areas ( 500 square miles) that are prime for detailed follow-up exploration:

- a) The Bear River-Bonnet Plume-Dolores Creek area; 92 claims, covering 4750 acres, have been staked.
- b) The Bond Creek area.

Prospecting traverses has defined zones from which grab samples<sup>assay</sup> as high as (0.5%  $U_3O_8$ ), along with gold, silver, cobalt and copper.

The Ogilvie Mountain area has been given low priority due to a lack of radioactive enrichment and low responses on airborne radiometric surveys.

Recommendations for further exploration include:

- 1) Staking of 100 claims in the Spring of 1981 at a cost of \$35,000.

- 2) Proceeding with one month of detailed exploration, at a cost of \$200,000 with emphasis on the two main areas.

To aid in exploration and to increase the probability for success, we further recommend geochemical and petrographic studies of 200 rock samples. These will result in genetic models based upon the distinct styles of mineralization in areas a) and b),

- a) Productive breccias with uranium mineralization
- b) Shear zones with uranium - gold enrichment

## II. INTRODUCTION

Zelon Enterprises conducted a uranium exploration program in North Central Yukon Territory for Texaco Canada Resources Ltd., of Calgary. Field work was done between May 28th and August 20th, 1980.

The program initially covered 20,000 square miles. It began with reconnaissance airborne radiometrics and progressed to selection of target areas, based upon follow-up ground reconnaissance prospecting. The radiometric survey consisted of an Urtec UD-256 cubic inch NaI crystal, coupled to two spectrometres, an Urtec UG-140 and a Scintrex GAM-1, each connected to an analogue recorder (Fig. 5). This was all mounted on the rear compartment of a Hughes 500C helicopter. Surveying mainly consisted of contour flying, as well as close inspection of fractures, outcrop areas etc. Techniques used were able to define mineralization in a short period of time and allowed a rapid progression from regional reconnaissance, to definition of areas and to land acquisition. Subsequently geologic prospecting, geochemical sampling and excavation using dynamite was performed on the acquired claims.

This report covers the results of the more detailed work directly relating to the claims acquired. Of the total summer expenditure, in excess of \$350,000, at least \$<sup>39,200</sup>~~158,918~~35 (See Appendix I) was expended on the sixty-eight mineral claims covered by this report which is being submitted to the Mining Recorder with an application to record Assessment Work under the Yukon Quartz Mining Act.

REGIONAL YUKON URANIUM EXPLORATION



FIGURE 1 PROJECT LOCATION MAP

(Scale: 1:250,000)

### III. PROPERTY AND OWNERSHIP

The Bear River properties consist of sixty-eight (68) mineral claims recorded in the name of Zelon Enterprises Ltd., and are registered in the Mayo Mining District, Yukon Territory.

The property list of claims is as follows:

<u>Claim Names</u>	<u>Date Recorded</u>	<u>Number</u>	<u>Expiry Date</u>
Iron 1-8	Jul 7/80	YA41857-YA41864	Jul 7/81
Iron 9-14,17-22	Jul 14/80	YA41872-YA41883	Jul 14/81
Iron 23-30	Aug 13/80	YA42301-YA42308	Aug 13/81
Adub 1-16	Jul 21/80	YA41897-YA41912	Jul 21/81
Adub 17-18	Aug 13/80	YA42317-YA42318	Aug 13/81
Hail 1-4	Jul 28/80	YA42025-YA42028	Jul 28/81
Hail 5-12	Aug 13/80	YA42309-YA42316	Aug 13/81
Judy 1-2	Aug 12/80	YA42299-YA42300	Aug 12/81
Snowstar 1-8	Aug 8/80	YA42082-YA42089	Aug 8/81

Application is herewith made to the Mining Recorder to record this year's representation work to a common anniversary date of July 7.

#### IV. LOCATION AND ACCESS

##### 1. Area Location and Logistics

Uranium exploration was focused in the Wernecke Mountains and Southern Ogilvie Mountains.

An area of 10,000 square miles, was flown in detail along an arcuate belt of Proterozoic sediments within the Wernecke Mountains Supergroup. Minor emphasis was given to the western part covering the Ogilvie Mountains region.

A base camp was established at Elliott Lake ( $64^{\circ} 29'$  latitude,  $135^{\circ} 33'$  longitude) from June 5th to August 16th, 1980, 65 air miles north of the town of Mayo.

Graham's General Store in Mayo did the camp expediting. Fuel purchases were made from Whitepass, Mayo and Whitehorse offices and distributed over six refuelling points.

##### 2. Access and Physiography

Road access to the town of Mayo and McQuesten Lake is good. The road stops 35 air miles south of Elliott Lake but is extended by a Winter cat road along the Wind and Bear River to the

Iron Claim Group. The Ogilvie Mountains are accessible by the all weather Dempster Highway going north from Dawson City to Inuvik.

Single engine Otter and Beaver float planes were chartered from Air North-Mayo to service the camp and the refuelling lakes; Margaret-Tex, Pinquicula-Bonnet Plume, Elliott Lake and Chapman Lake on the Dempster Highway.

There are four airstrips suitable for use by small aircraft with only the Bear River runway in good enough condition for the landing of <sup>I<sub>3</sub></sup> ~~High~~landers and DC-3 aircraft. The most practical means of access is by helicopter. A Hughes 500D is preferred due to its versatility and overall performance. The estimated flying time to maximize each man day production is 150 hours per month.

### 3. General Physiography

Topography of the Wernecke Mountains is characterized by irregular, jagged ridges incised with numerous cirques. The peaks are generally about 5000 feet in elevation with some exceeding 7500 feet in elevation. The ridges are composed of resistant Precambrian argillites, dolomites and early Paleozoic carbonates.

The region has a continental climate with Winters that last from November until March. The precipitation is variable but is directly influenced by the proximity to the west coast. Break-up of the larger lakes generally occurs in late May or early June, with

those at higher elevations not breaking up until late June.

The major valleys are "U" shaped as a result of glaciation or possible geological deformation and thus the main drainages have gentle gradients and are slow moving.

V. PERSONNEL

The following took part in the summer program on the Bear River Properties of Zelon Enterprises Ltd. Camp was established at Elliott Lake June 2nd, and evacuated on August 16th, 1980.

J.H. Hajek	Party Chief	4440 Regency Place, W. Van., B.C.
F.S. Daley	Geologist	752 Smith Ave., Coquitlam, B.C.
G.B. Keep	Geologist	1270 W. King Edward, Van., B.C.
T. Bruland	Geologist	904-510 W. Hastings St., Van., B.C.
D. Javorsky	Prospector	Princeton, B.C.
C. Tapp	Prospector/Cook	General Delivery, Mayo, Y.T.
J. Graham	Expeditor	Box 36, Mayo, Y.T.
L. McLoughlin	Expeditor	Box 36, Mayo, Y.T.
T. Moore	Pilot	c/o Transwest, Pitt Meadows, B.C.

R.J. Munday	Research Assoc.	Texaco Canada Resources Ltd.
S.B. Coldwell	Research Assoc.	Texaco Canada Resources Ltd.

Some 450 man days were expended on this exploration project during 1980.

## VI. EXPLORATION DURING 1980

Exploration on claims in the Bear River area during 1980 consisted of helicopter supported prospecting, mapping, rock geochemical sampling, excavation with dynamite, stripping of overburden to expose boulders and bedrock and a detailed ground scintillometre survey (Fig. 6).

### 1. Prospecting and Mapping

Prospecting consisted of one or two man crews each equipped with hand held scintillometers. Geological mapping took place at the same time.

### 2. Rock Geochemical Sampling

Rock samples were collected at various locations throughout the properties and chemically assayed. Results are tabulated in Appendix II and located (Fig. 3).

### 3. Excavation and Trenching

Three pits were excavated through rock using hand drilling and dynamite, then pick and shovel.

VII. Details of Work performed and Costs Estimates, Iron, Adub, Hail, Snowstar, Judy Claims

1. Iron Claims (Fig. 3)

Iron 1-8	Recorded 07/07/80
Iron 9-14, 17-22	Recorded 07/14/80
Iron 23-30	Recorded 08/13/80

Work Details:

These claims cover a magnetite/hematite concentration which had been previously tested as a potential iron deposit. Prospecting by R.J. Munday and J.H. Hajek on (June 20, 1980) indicated:

- Steel Creek cutting a breccia mineralized by chalcopyrite
- Also the hematite breccia to the west as being radioactive to several times background, suggesting the area could host an uranium mineralized breccia.

Claims Iron 1-8 were consequently staked, Iron 9-14 and 17-22 added a few days later.

Detailed prospecting over the period of July 5 to August 14, by all members of the exploration crew revealed several radioactive zones (Fig. 5D in exploration report - now Fig. 6).

A total of 3 pits were blasted by dynamite: their locations are illustrated on Fig. 3.

Pit A is 1 ~~metre~~ m<sup>3</sup>

Pit B is 1 ~~metre~~ m<sup>3</sup>

Pit C is 1 metre wide x 2 metres long x 1 metre deep.

(Note: These are approximate figures only as the pits are cuts into a steep hillside)

Pit A was grab sampled by RM104-0.04% U<sub>3</sub>O<sub>8</sub>

SB 1 -0.04% U<sub>3</sub>O<sub>8</sub>

Pit B was grab sampled by RM105 0.045%  $U_3O_8$   
 SB 2 0.035%  $U_3O_8$

Pit C was chip sampled by RM106 0.17%  $U_3O_8$  over/m  
 RM107 0.11%  $U_3O_8$  over/m  
 JH 94 0.09%  $U_3O_8$  over/m  
 JH 95 0.09%  $U_3O_8$  over/m

All samples are of feldspathized brecciated pelitic material. The mineralization is believed to be finely disseminated brannerite.

Prospecting the claims south of Bear River, including clearing out some old pits, revealed veins that <sup>more</sup> ~~most~~ of the radioactive feldspathized pelite. Several boulders and small outcrop areas run in excess of fifteen times background radioactivity. Assays returned values in the 0.1%  $U_3O_8$  range (Fig. 3-4).

#### Work Cost

For work certification purposes, the claims are grouped:

Iron (NE): Iron 1-14, Iron 17-18 (Total 16 claims)

Iron (SE): Iron 19-30 (Total 12 claims)

A total of 12 man days (4 men each day for 3 days) was spent working the Iron (NE) group. This includes the trenching, radiometric surveying and general prospecting.

Hence total expenditure claimed are:

#### Iron NE:

12 man days x \$350	\$ 4200.00
Helicopter times, from Elliott	
Lake base Camp:	
1½ hrs. (135 miles @ 90mph) x 3 x 2 x \$390=	3510.00
Assays 9 x \$20/each	<u>150.00</u>
	\$ 7890.00

A total of 6 man days (3 men each day for 2 days,) was spent working the Iron (SW) group, which includes prospecting the steep valley opposite to Steel Creek, gravels in the Bear River, and the hillsides.

Hence total expenditure-claimed is:

Iron (SW):

6 man day x \$350	\$ 2100.00
Helicopter time from Elliott Lake base camp	
1½ hrs (135 miles x 90mph) x2x2x\$390=	2340.00
Assays 3 x \$20/each	<u>60.00</u>
	\$ 4500.00

Note: For the purpose of estimating costs of exploration work performed on the Claim Group described in the following Report by J.H. Hajek of Zelon Enterprises Ltd., Vancouver, B.C., certain averages have been calculated.

For Man days, the total of Zelon employees salaries, together with mobilization costs, camp costs, geophysical equipment costs, drafting expenses and Zelon's office overhead were ~~summarized~~<sup>←</sup>, and then divided by 450 which represents the best estimate of the actual man days spent by Zelon personnel on this project. This gives a per deum rate of \$350.

For Helicopter cost, the actual billing rate, which includes helicopter hours as well as liability insurance and related cost connected with pilots expenses were summed together with White Pass jet fuel expenses, and then divided by 321.3 hours which represents the total hours flown by the helicopter including mobilization and demobilization from Vancouver. This averages at \$390/hr.

Each claim for the cost of work performed on any claim group represents a combination of a per deum rate, as well as the cost

flying the men to and from the base camp at Elliott Lake, hence whether the men went blasting, prospecting or mapping, they are charged at the same rate. It is appreciated that a considerable expense was incurred on helicopter travel, but this was inevitable as Zelon had no former knowledge of where it would finally stake claims on the Wernecke Mountains, Elliott Lake seemed a reasonable place to establish base.

### 2. Adub Claims

Adub 1-16	Recorded 07/21/80
Adub 17-18	Recorded 08/13/80

### Work Details

Prospecting the NE extension of the Steel Creek fault of the Iron Claims (Fig. 3) revealed feldspathized iron impregnated breccia material in a cirque (protected by Adub #3) and along the NW wall of the valley (protected by Adub 9-16).

Consequent to staking, three pits were blasted on Adub #3, each of some  $1\text{m}^3$  and a  $1\text{m} \times 2\text{m} \times 1\text{m}$  trench was blasted on Adub 12.

Prospectors also checked the discovery cirque, and talus plus outcrop along the main valley walls.

Assay results are tabulated in Appendix II and indicate less than 0.0%  $\text{U}_3\text{O}_8$  from samples of outcrop. However sample of iron rich breccia (JH133) ran 2.5 ppm gold and JH132 ran 310 ppm cobalt. These are from a series of rock chips. (JH130-133) collected at the top of the talus slope on claims Adub 10 and 12.

### Work Cost

For work certification purposes, the claims grouped:

Adub (S); Adub 1-8, 17, 18	Total 10 Claims
----------------------------	-----------------

Adub (N); Adub 9-16

Total 8 claims

A total of 6 man days were spent working on the Adub (S) group, which includes blasting the three small pits on Adub #3.

Hence, total expenditure claimed is:

Adub (SE)

Seven man days x \$350	\$ 2450.00
Helicopter time from Elliott Lake base camp	
1.66 hours (150 miles x 90 mph) x \$390 x 2x2=	2600.00
Assays 4 x \$20	<u>80.00</u>
	\$ 5130.00

A total of 6 man days were spent prospecting the Valley walls of the Adub (NW) group, which includes a close in airborne radiometric survey of the group, and trenching on Adub 12.

Hence total expenditure claimed is:

Adub (N)

Six man days x \$350	\$ 2100.00
Helicopter time from Elliott Lake Base Camp	
1.66 hours (150 miles x 90mph) x\$390x2x2	2600.00
Helicopter radiometric survey 1 hr x \$390	390.00
Assays 6 x \$20	<u>120.00</u>
	\$ 5210.00

**3. Hail Group**

Hail 1-4, Date Recorded	07/28/80
Hail 5-12, Date Recorded	08/13/80

Work Details

Prospecting by D. Javorsky revealed a frost disturbed outcrop of uranium mineralized iron enriched pelitic breccia high on a ridge along the same general fault trend as the Iron and Adub groups.

A zone some 100 metres in diameter was anomalous to the airborne radiometric system, and consequent detailed prospecting on Hail 4 revealed a frost disturbed zone at least 100 metres wide, which was in excess of 25 times background radioactivity. Float from this showing has slumped easterly down the vally, but appears to be distinct from the radioactive boulders in Hail 9 and 10. The latter represents radioactivity along sealed fractures in pelite. Assays of grab samples and chips from the Hail 4 showing ran in the 0.2 to 0.5%  $U_3O_8$  range (See Appendix II and Fig. 3).

Work Costs:

A total of 10 man days were spent examining the showing on Hail 4 and prospecting for other showings and boulders on the adjacent ridges and valleys.

Hence total expenditures claimed are:

10 man days x \$350/day	\$ 3500.00
Helicopter time from Elliott Lake base camp	
2 hrs (180 milesx90 mph) x 4x2x\$390=	6240.00
Assays 20 samples x \$20/each	<u>400.00</u>
	\$10,140.00

4. Snowstar Claims

Snowstar, Date Recorded 8/8/80

Work Details

Routine prospecting by Fred Daley of a gossan high on a ridge

(now covered by Snowstar claims) returned a radioactive outcropping of intensively brecciated and iron impregnated pelitic rock.

The claim group was staked and recorded, then consequent prospecting revealed a boulder radioactive to 40 times background (breccia) on Snowstar 5, and boulders of radioactive breccia on Snowstar 4 and 6.

Only one radioactive grab sample was assayed (JH121, 0.01%  $U_3O_8$ ).

Work Costs;

A total of 6 man days were spent working the Snowstar Group.

Hence, total expenditure claimed is

six man days x \$350	\$ 2,100.00
Helicopter travel from Elliott Lake base camp	
2 hrs (200 miles x 90mph) twice, plus 2 hrs	
local flying moving prospectors.	
\$390 x (2+2+1) =	1,950.00
Assays 1 sample x \$20	<u>20.00</u>
	\$ 4,470.00

5. Judy Claims

Judy 1,2 Recorded 8/12/80

Work Details

Prospecting by Dave Javorsky in a cirque to the SE of Adub and Hail claims revealed an iron impregnated breccia with local outcrop areas running in excess of 20 times background radioactivity. Two claims were staked over the showing. Consequent prospecting by D. Javorsky failed to reveal more significant mineralization.

Work Costs:

A total of two man days were spent prospecting on July 1,2.

Hence, expenditures claimed:

2 man days x \$350/day	\$ 700.00
Helicopter travel from Elliott Lake	
Base Camp, 2 hrs (200 miles 90mph) x2x\$390	<u>1560.00</u>
	\$ 2260.00

## VIII. MINERALIZATION AND MINERAL SHOWINGS

These descriptions are the author's opinions based on field observations and literature search (1979-1980). Specular hematite outcrops related to radioactive minerals, chalcopyrite associated with breccia bodies have been found on the Iron, Adub, Hail, Judy and Snowstar claim groups.

### 1. Mineralization Wernecke Supergroup Breccias

Iron-uranium-gold and copper-cobalt-silver mineralization is associated with large and abundant breccia bodies intruding Helikian and Aphebian sedimentary rock units. Breccias cut a folded and metamorphosed early Proterozoic sequence referred to as the Wernecke Terrane (Fig. 2). The Wernecke Terrane in the Bonnet Plume River region is overlain unconformably by Paleozoic strata on the west and by the Mackenzie Terrane on the east. Potassium-argon age dating done by C.I. Godwin at the University of British Columbia on biotite sampled from a breccia alteration zone indicated an age of  $1500 \pm 60$  m.y. This suggests that the Wernecke Terrane could be Aphebian and that uplift and erosion may have taken place during the Elsonian Orogeny -1370 m.y. (Hajek, 1980).

### 2. Breccias Classification

The breccia bodies in the Bonnet Plume-Wind River region are important due to:

- their relatively large size (some are over 3000 metres in diameter) and abundance (over 100 known breccia bodies of which 50 were investigated).
- their association to uranium mineralization within a highly

radioactive host rock: 2-10 times normal background for similar rocks in the North Central Yukon..

- the prevalence of daughter products over primary uranium mineralization ie; only a few locations have radioactive surface mineralization even if the whole of the breccia body is anomalous in daughter products.

Several types of breccias mineralization are outlined in Table 1 with A and B being the most desirable types for uranium exploration (Figure 7).

2a) Type A, Stratiform Breccias

Iron content is greater than barium-copper-cobalt and gold. Radioactivity is due to pitchblende and secondary uranium minerals. Iron and gold have a positive correlation as indicator elements for uranium mineralization.

2b) Type B, Discordant Breccias

Uranium typically occurs in radioactive brannerite-pitchblende -uraniothorite and in secondary vein type occurrences. It also occurs as intrusive exotic mineral assemblages.

Iron rich and copper rich zones occur within these breccias. Copper-cobalt and sometimes silver have a similar auto correlation factor and are distal to uranium mineralization.

TABLE 1: WERNECKE MOUNTAIN BRECCIA TYPE MINERALIZATION

- TYPE A: Disseminated chalcopyrite + specularite, pyrite in albite-chlorite + biotite. Muscovite metasomatites replacing conglomerates and breccias of ferruginous dolomitic silicite near diorite dyke contact.
- TYPE B: Chalcopyrite, (veinlets & disseminated) replaces meta-carbonate horizons in the vicinity of faults or diorite dykes.
- TYPE C: Quartz-siderite veins with scattered grains and masses of chalcopyrite, cobaltite, pyrite and pyrrhotite.
- TYPE D: Quartz veins in faults gouge in the Helikian sediments (Hcs) and recrystallized dolomite (Hc) contain tetrahedrite, pyrite and chalcopyrite.
- TYPE E: Masses of chalcopyrite + bornite + galena and sphalerite replaces zones of coarse recrystallized and altered dolomite along faults.
- TYPE F: Copper shale type. Chalcopyrite and chalcocite microconcretions and small grains occur in dolomitic argillites and argillaceous dolomites, near the facies transition into oxidation zone.

IX. HISTORY OF URANIUM EXPLORATION IN CENTRAL YUKON

Prior to 1979, there had been considerable uranium prospecting in the Wernecke Mountains area of the Yukon. Uranium occurrences were first recognized by Archer Cathro geologists during a carbonate Pb-Zn program in 1974 on behalf of the "Ogilvie Joint Venture" (Chevron, Aquitaine, Marietta, and private interests). Uranium mineralization in breccias was first reported on the IGOR property (NTS: 106E/2), which was originally staked for copper.

In 1975, Archer Cathro's "Wernecke Joint Venture" conducted a low profile intensive prospecting program which resulted in the discovery of uranium occurrences and led to geochemical and stratigraphic studies by the Geological Survey of Canada. Although geochemical analyses were done on stream sediments and water samples, reconnaissance prospecting of creek float for breccia, and for its characteristic alteration products, more rapidly outlined breccia bodies. Subsequent detailed ground examinations of breccias found copper and brannerite-type uranium mineralization.

Exploration for pitchblende deposits required detailed prospecting of structures below the unconformity, and must be revised as a concept.

In January 1976, a short information release concerning uranium mineralization in the Wind River area was published in the Geological Survey of Canada Report of Activities (Blusson, 1976). This essentially marked the moment at which uranium mineralization in the northern Yukon became

public knowledge.

During the summer of 1976, Archer Cathro, Mountaineer Mines (Pan Ocean), Urangesellschaft, Noranda, Eldorado, and Prism Resources conducted prospecting and exploration programs for uranium in the Wind-Bonnet Plume River area. Three properties:

IGOR, BOND (NTS: 106 D/10),

PTERD (NTS: 106 C/14) were diamond drilled.

On the BOND, two of three holes drilled intersected mineralization of unknown grade.

Late in 1976, Pan Ocean expanded their land holding into the Dolores Creek, Slats Creek, and Kiwi Lake areas.

Several companies did regional reconnaissance for uranium in the southern Yukon in 1977, but little ground was staked.

Further north however, Chevron, Urangesellschaft, and Archer Cathro held claims in the Tombstone Mountain area and still further north, in the Blow River area, Aquitaine prospected and trenched radioactive showings on their claims in Paleozoic sediments.

In the Wind-Bonnet Plume area, Mountaineer/Pan Ocean evaluated their claims in the Dolores Creek area that were staked in the winter of 1976 (ELK, RAM). They also worked in the Slats Creek area (URSUS, ARCTOS, RAD) and the Kiwi Lake area (LOON, WOLF, FOX, OWL). Mapping, prospecting and reconnaissance stream water geochemistry were the main tools used. In addition, some trenching was done in the Kiwi Lake area.

Several "Junior" mining companies, notably Thor Explorations Ltd., Nuspar Resources Limited, Golden Standard Mines Ltd., Hesca Resources Ltd., and Aries Resources Ltd., optioned ground from Andy Harman. Of these, only the Thor claim group held by Aries Resources on Slats Creek (NTS: 106 E/1) had any potential (float with 1.14 lb/ton), the others appear to have been staked on speculation and have since been dropped.

On the Bond claims, Eldorado conducted a ground magnetometer survey and expanded their diamond drilling program. Magnetic anomalies were found to correspond with areas of breccia and eight short holes were drilled for a total footage of 1140 feet.

In 1978, Energex Minerals Limited acquired claims at Fairchild Lake and did detailed sampling, prospecting and soil geochem on ground that had previously been drilled. The best reported chip sample was 0.061%  $U_3O_8$  over a three foot interval.

X. GEOLOGY OF THE NORTH-CENTRAL YUKON

1. Regional

With the recent discoveries of several breccia-hosted uranium occurrences (Morin, 1976; Archer and Schmidt, 1977; Bell, 1978; Young et al, 1978) there has been a renewed interest in the Wernecke Mountains area of the Yukon. Earlier investigations of the regional geology (Wheeler, 1954; Green, 1972) have subsequently been remapped (Delaney et al, 1977, Yeo et al, 1978, Delaney, 1978; Laznicka and Edwards, 1979) to distinguish the lithology and distribution of the Proterozoic breccias.

Mineralized breccias are confined exclusively to an arcuate band of mid-Proterozoic carbonate and clastic rocks referred to as the "Wernecke Supergroup" (Delaney, 1978). This Supergroup is exposed in three distinct districts but presently breccia has only been found in abundant quantities in two; the easterly Bonnet Plume district, 5000 km<sup>2</sup> in area, and the westerly Coal Creek Dome in the southern Ogilvie Mountains, 2000 km<sup>2</sup> in area. Uranium mineralization appears to be concentrated in the former district, centered between the headwaters of the Bonnet Plume and Wind Rivers.

The stratigraphy in this area has most recently been interpreted by Delaney (1978). Three subdivisions (15-18 km thick) of the Wernecke Supergroup are well defined. (Figure 2). The basal "Fairchild Lake Group" occurs as thin, locally deformed and altered strips

along the Bonnet Plume River and consists of a thickness of at least four km of light grey weathering, thinly bedded laminated siltstone, slate and argillite with some interbedded carbonate. Conformably overlying the Fairchild Lake Group is the "Quartet Group", a sequence up to five km thick of monotonous dark grey weathering siltstone, argillite and slate with minor sandstone. The Quartet Group is transitional into the overlying "Gillespie Lake Group" which is composed of at least four km of buff to orange to locally grey weathering dolostone with minor siltstone and sandstone.

On a regional scale, the structural style in the Proterozoic rocks is characterized by open folds whose axes trend WNW. On a more detailed scale however, this pattern is complicated by overturned folds, thrust faults, and the metamorphic effects of intrusive breccia complexes.

Delaney (1978) considered the Bonnet Plume River Fault Zone to be one of the most significant in the area:

- a) The only known exposures of the Fairchild Lake Group (the oldest rocks in the Wernecke Mountains and perhaps the oldest rocks in the northern Cordillera) occur along a linear zone whose trend is defined by the fault zone;
- b) A zone of complex folds, including some which are overturned occur along part of the southern margin of the structure;
- c) Several mineralized breccia complexes occur along or in close proximity to the structure.

A similar WNW trending fault zone, subparallel to the Bonnet Plume Fault Zone, occupies the Bear River - Gillespie Creek topographic lineament.

The importance of these structural trends as controls for the emplacement of intrusive breccia complexes can be appreciated by examining the two breccia diagrams on Figure 7.

The Wernecke Supergroup is bounded on the east by a major Proterozoic unconformity, produced during the Nadaleen Orogeny which marks the boundary between the Wernecke Supergroup and the younger (Hadrynian) Mackenzie Supergroup of dominantly clastic lithologies. To the west, the Wernecke Supergroup is overlain unconformably by Paleozoic carbonates.

Most of the Wernecke Supergroup has been metamorphosed to lower greenschist facies and locally, near the margins of breccia complexes and along fault zones, is at the upper greenschist grade.

## 2. Proterozoic Breccia Bodies

There are well over 100 documented occurrences of Proterozoic "diatreme" breccias within the early Proterozoic Wernecke Supergroup. Ranging in diameter from 20 meters to over three km, it is estimated they make up a minimum of 2% of the surface exposure in the Bonnet Plume - Wind River District. (Archer & Schmidt, 1977).

The breccias occur as pipelike necks with lateral apophyses, as large mushroom shaped bodies, as acutely cross-cutting dikes and

as "intraformational" sill-like sheets. The resistant breccias commonly weather out in relief to form spikes or pinnacles which form hoodoo-like topographic features. Breccia talus is characterized by boulder sized, dark weathering angular blocks that may sometimes be gossanous due to iron content. This is in contrast to the more highly fractured, platy, grey to black weathering shales, and the differentially weathered, grey to orange weathering carbonates of the Wernecke Supergroup.

Some breccia contacts exhibit sharp boundaries with strong dragging, suggesting forceful emplacement, while in other places the degree of brecciation becomes less pronounced laterally, grading into weakly fractured rocks. Some breccia bodies have pronounced boundaries and numerous sheet-like offshoots or wings that mimic intraformational breccias and extend several hundred meters along stratigraphic horizons.

There are several types of breccias based on fragment, matrix and host composition. The most abundant type in the Wind-Bonnet Plume district appears to be a purple/pink and green-spotted fragmental breccia with clasts of argillite, siltstone, chert (resembling quartzite), and felsic (tuffaceous) volcanics embedded in a matrix of fine argillaceous material commonly containing green chlorite, albite, and ferruginous dolomite. This type of breccia occurs on the IRON, ADUB, HAIL, and JUDY claims, as well as in the Slats and Dolores Creeks areas. In thin section (Morin 1977, Laznicka & Edwards, 1979) the pink clasts consist of very fine grained granoblastic quartzo-feldspathic material with rare epidote and variable amounts of evenly disseminated magnetite

(partially altered to hematite) or just hematite distributed within the clast as a thin film along intergranular surfaces. Commonly, the clasts are surrounded by a thin rind of hematite and chlorite. Specular hematite is associated with this type of breccia either as fine grained disseminations within the body or as massive "plugs" peripheral to the breccia. Copper, in the form of chalcopyrite and malachite, is also associated with the breccias. It occurs as disseminations and as fracture/vein material in peripheral zones similar to hematite. Copper seems to be ubiquitous within the Wernecke Supergroup, occurring not only in the breccias but also in the shales, carbonates and quartz veins.

Another common type of breccia is a dark weathering, highly carbonatized variety with siderite and ankerite veinlets and fracture coatings. This type is found on Bond Creek, south of the Bear River, and Slats Creek.

Other breccia lithologies, less common in this area but well represented in other areas, include;

1. Conformable heterolithic breccias (BOND, BOZO, Dolores Creek) with a high matrix to clast ratio and poor sorting. The matrix is commonly an aphanitic albite-mica-chlorite alteration assemblage with abundant ferruginous dolomite cement. This breccia type has a local provenance and the distance of transport of the fragmental material ranges from a few centimeters to a few meters.

2. Volcanic breccias (minor occurrences at Bond and Dolores Creeks) characterized by angular fragments of volcanics (rhyolite), argillite and tuff enclosed within a fine grained felsic matrix.

Previous classifications of breccia types dealt mainly with the stratigraphic association with respect to the host rocks. Coarse, fragmental crosscutting breccias have been described as "discordant breccias" (Laznicka and Edwards, 1979); "chaotic polymictic sedimentary breccias" (Morin, 1976); "stope breccias" (Delaney et al, 1977); "discordant heterolithic breccias" (Bell, 1978) and "discordant exotic breccias" (Bell and Delaney, 1978). More stratigraphically controlled and oriented breccias are likewise described as "near-conformable breccias"; "stratiform breccias"; channelway breccias" and "concordant breccias".

Abundant alteration is one of the main characteristics of the breccia bodies. Feldspathization, silicification, hematization, chloritization, and carbonatization are most common. Areas cut by numerous breccias are generally altered by bleaching and carbonate metasomatism within calcareous sub-units. Alteration, matrix filling and mineralization of the breccias are gradational with respect to each other. For example, hematite, barite and carbonate can range from a few percent in the matrix to total replacement at the margin of the breccia body. Feldspar alteration is locally well enough developed to assume an igneous appearance characterized by coarsely crystalline masses of albite. Carbonate alteration in the Wernecke breccias is

characterized by a massive phase consisting of siderite, calcite, and/or dolomite and a disseminated phase which consists of coarse-grained sub-hedral to euhedral rhombs of ankerite scattered throughout the matrix and framework. Hematitic alteration impart a pinkish to blood red or dark grey coloration to both the framework and matrix.

This type of alteration occurs as one of three distinct phases:

- medium to coarse-grained flakes of specularite,
- fine-grained disseminated specularite,
- submicroscopic hematite.

In their study of the correlation of the lateration assemblages with the stratigraphy, Delaney et al (1977) noted a crude zonation. The zonation is defined by the gradual upward loss of plagioclasic metasomatites, quartz, quartz-feldspar carbonate alteration (upper "Quartet Group") and finally the loss of any observable effects of hematitic alteration (middle "Gillespie Lake Group").

Uranium mineralization occurs in several types of environments the most of which are:

- a) Fine euhedral grains of brannerite, with minor thorite and uranothorite disseminated within silicified host rock. In thin section (Morin, 1976) it was found that grains of brannerite, enclosed in thin veinlets of quartz feldspar, have haloes of brick red hematite. Some of the disseminated occurrences have associated chalcopyrite, barite, siderite, pyrite and hematite - magnetite (URSUS, IGOR).

- b) Brannerite in thick quartz veins (LOON). Coarse disseminated brannerite occurs as long striated crystals resembling rutile. This and evidence elsewhere suggests that some of the brannerite is pseudomorphous after rutile.
- c) Brannerite and uraninite on the margins of concordant pinch and swell quartz veins in chloritic metasedimentary rocks. In some cases very radioactive thin layers parallel with the bedding are present, but it is uncertain whether these represent a true syngentic phenomenon. In some cases, the pinch and swell quartz veins are demonstrably later than the uranium minerals.
- d) Pitchblende with minor brannerite along thin fractures and shear zones (PTERD, BOND).
- e) Pitchblende and uraninite along faults and fractures close to the sub-Phanerozoic unconformities. May in part be due to surface leaching from the Wernecke Supergroup and breccias with downward percolation of ground waters into porous breccia pipes. At two locations, dispersed fragments of previously mineralized sediments were found (Bell, 1979) indicating that significant mineralization may have occurred prior to brecciation.
- f) Secondary uranium minerals along fractures and as nodules. For several years now, the origin of the Proterozoic breccias has

been widely debated. Extensive stratigraphic, petrographic and ground studies have produced several strong conclusions:

- Breccias are spatially associated with major northwest trending lineaments.
- Mineralized breccias are dominant in the lower stratigraphy.
- Breccia clasts show limited vertical displacement from their original stratigraphic position, no evidence of deep-seated, "exotic" igneous material.
- Uranium mineralization is associated with several types of breccias, independent of the country rock and clast material.

The most recent and commonly accepted theory as to their origin involves a combination of several processes:

- a) Development of regional zones of strong tensile stress.
- b) Ascending fluids from a deep-seated, possibly upper mantle source forced hydraulic stoping and development of shatter columns and collapse breccias. This accounts for the locally derived clasts in the breccias.
- c) Softening and disintegration of country rocks by fluids and upwards thrusting of the breccias would produce the variety of plastic, semi-plastic, and brittle features observed in the breccias.
- d) Simultaneously during these stages the rising fluids would produce a variety of metasomatic effects on both the breccias and wall-rocks. In addition, these fluids could progressively leach U, Cu, and Fe from the host rocks, reducing them to

bleached phyllites, and redeposit these metals higher in the stratigraphy and breccia column.

- e) Later, explosive gas-drilled breccias developed on previously established fractures, broke through the initial breccias and were surface vented. These explosive breccias have sharp, upwards-bent contacts.

Reinhardt (1972) interpreted breccias in the Great Slave Lake area as "formed by fragmentation and transportation of the resultant debris by magmatic gases guided by a regional fault system and facilitated by the presence of a major unconformity." Breccias in the Dolores Creek area of the Yukon are believed to be of similar origin, and to occupy a similar structural setting to those in the Great Slave Lake area (Laznicka and Edwards, 1979).

## GEOLOGICAL LEGEND

## WERNECKE MOUNTAINS AREA, CENTRAL YUKON

## QUATERNARY

- 21 Unconsolidated glacial and alluvial deposits.

## TERTIARY

- 20 Quartz porphyry

## CRETACEOUS

- 19 Biotite granodiorite and quartz monzonite; 19a, hornblende/biotite syenite; 19b, diorite and gabbro; 19c, Keno Hill Quartzite: massive quartzite, minor slate and phyllite; 19d, phyllitic quartzite, graphitic and chlorite slate and phyllite; minor limestone; 19e, similar to 19c but may be older; 19f, Bonnet Plume Formation: sandstone, shale and coal; 19g, Bonnet Plume Formation: conglomerate and sandstone.

## JURASSIC

- 18 Lower Schist Division: argillite, slate, phyllite and quartzite.

## TRIASSIC

- 17 Black limy shale and limestone; 17a, quartzite and minor shale.

## PERMIAN

- 16 Tahkandit Formation: chert, cherty limestone and limestone; 16a, limestone with some chert.

## CARBONIFEROUS TO PERMIAN

- 15 Limestone, black shale, chert and chert-pebble conglomerate; 15a, dark shale, limestone, sandstone and minor chert-pebble conglomerate; 15b, shale, slate and minor limestone.

## CARBONIFEROUS

- 14 Carbonates and clastics; 14a, Hart River Formation: shale, siltstone and limestone; 14b, shale; 14c, clastics and coal.

## DEVONIAN AND MISSISSIPPIAN

- 13 Black shale, argillite, minor chert and chert-pebble conglomerate; 13a, Besa River Formation: black shale and siltstone; 13b, argillite, slate, phyllite and quartzite; 13c, black shale, argillite, slate, limestone, chert and chert-pebble conglomerate; 13d, Nation River Formation: chert-pebble conglomerate and chert-grain sandstone.

## DEVONIAN

- 12 Grey, brown and black massive limestone; 12a, limestone and dolomite; 12b, shale; 12c, clastics; 12d, sandstone; 12e shale; 12f Canol Formation: black siliceous shale; 12g, Hume Formation: limestone; 12h, shale; 12i, Cranswick Formation: limestone; 12j, Arnica Formation: dolomite.

- 11 Dolomite and minor limestone; 11a, undivide 11 and 10; 11b, Delorme Formation: dolomite and limestone; 11c, carbonates and clastics.

## ORDOVICIAN AND SILURIAN

- 10 Mount Kindle Formation: massive, vuggy and reefoid dolomite.

## CAMBRIAN AND ORDOVICIAN

- 9 Dolomite and limestone; 9a, dark volcanic rocks, tuff and argillite; 9b, Road River Formation: shale and chert, 9c, carbonate debris flows; 9d, Franklin Mountain Formation: dolomite and shale.

## CAMBRIAN

- 8 Unnamed clastics; 8a, carbonates and clastics; 8b, limestone and bioherms; 8c, Sekwi Formation: dolomite, limestone, shale and sandstone; 8d, Backbone Ranges Formation: quartzite, siltstone, shale and dolomite; 8e, quartzite, siltstone and shale; 8f, pisolitic dolomite and minor quartzite; 8g, dolomite, quartzite and shale; 8h, clastics and carbonates.

## HADRYNIAN AND/OR CAMBRIAN

- 7 Sheepbed Formation: slate, siltstone, quartzite, conglomerate and limestone.

## HADRYNIAN

- 6 Dark green volcanic rocks, breccia, tuff and agglomerate; minor shale, chert, siltstone and limestone; 6a, dark green volcanic rocks, breccia, tuff and agglomerate; 6b, dark green andesite.

- 5 Quartzite, sandstone, quartz-pebble conglomerate, shale and slate; quartz-chlorite schist, quartz-mica schist and phyllite; minor limestone and chert; 5a, limestone.

- 4 Unnamed carbonates and clastics; 4a, Rapitan Group: mudstone, limestone, diamictite and iron formation; 4b, dolomite and quartzite; 4c, Rapitan Group undivided; 4d, dolomite; 4e, shale, siltstone, conglomerate and dolomite; 4f, dolomite, shale and sandstone; 4g, dolomite and limestone; 4h, "Grit Unit": slate, siltstone, sandstone and conglomerate; 4i, dolomite and limestone.

## HADRYNIAN AND HELIKIAN

- 3 Orange-weathering dolomite, dark slate, phyllite and quartzite; 3a, pink-orange - and grey-weathering dolomite, shale, quartzite, conglomerate and limestone; 3b, buff and orange dolomite, shale and quartzite; 3c, grey dolomite, shale and quartzite; 3d, dolomite-boulder conglomerate, 3e, shale, argillite, siltstone and dolomite.

## HELIKIAN

- 2 Carbonates, shale and gypsum; 2a, dolomite, shale and gypsum; 2b, dolomite and limestone; 2c, Katherine Formation: sandstone and dolomite; 2d, Tsezotene Formation: sandstone and dolomite; 2e, clastics and carbonates.

## HELIKIAN AND/OR APHEBIAN

- 1 Dolomite; 1a, dark shale, siltstone and argillaceous dolomite; 1b, slate, phyllite, argillite, quartzite and limestone; 1c, argillite, limestone and minor biotite calc-silicate hornfels.

CONCLUSIONS

Radioactive airborne surveys and ground geological prospecting have been the key to a successful evaluation of 20,000 square miles in the North Central Yukon, (Fig. 1).

The program outlined a 2000 square mile area in the east Wernecke Mountains as being the most favourable for hosting quantities of uranium.

High grade float (5000-25,000 total counts/second) in the vicinity of hematite-rich breccias in the Bonnet Plume River Basin resulted in the staking of 96 claims.

Assay results from the samples taken on the claims vary from a low level of 0.005%  $U_3O_8$  a zonal enrichment of 0.1% to a high grade material ranging 0.5%.

Uranium in most cases is associated with iron and/or with gold-silver-copper-cobalt.

Respectively submitted,



Vancouver, July 2, 1981  
Zelon Enterprises Ltd.

John H. Hajek,  
Exploration Manager

C E R T I F I C A T E

I, Robert J. C. Munday of the City of Calgary in the Province of Alberta.

do certify that:

I am a Geologist, residing at 443 Winterbourne Crescent, Calgary, S.E.

I am a Registered Professional Geologist of the Province of Alberta,  
and have been practising my profession continuously since the year of 1966.

I personally directed the program which was organized and managed by J.H.  
Hayek of Zelon Enterprises Ltd., Vancouver, and can vouch for the accuracy  
of the attached Exploration Report - Year 1980 - on the Bear River Properties  
Wind River Area, Mayo Mining District, Yukon.



Robert J. C. Munday Ph.D.

RECONNAISSANCE RADIOMETRIC AIRBORNE SYSTEM  
(Interconnection Diagram)

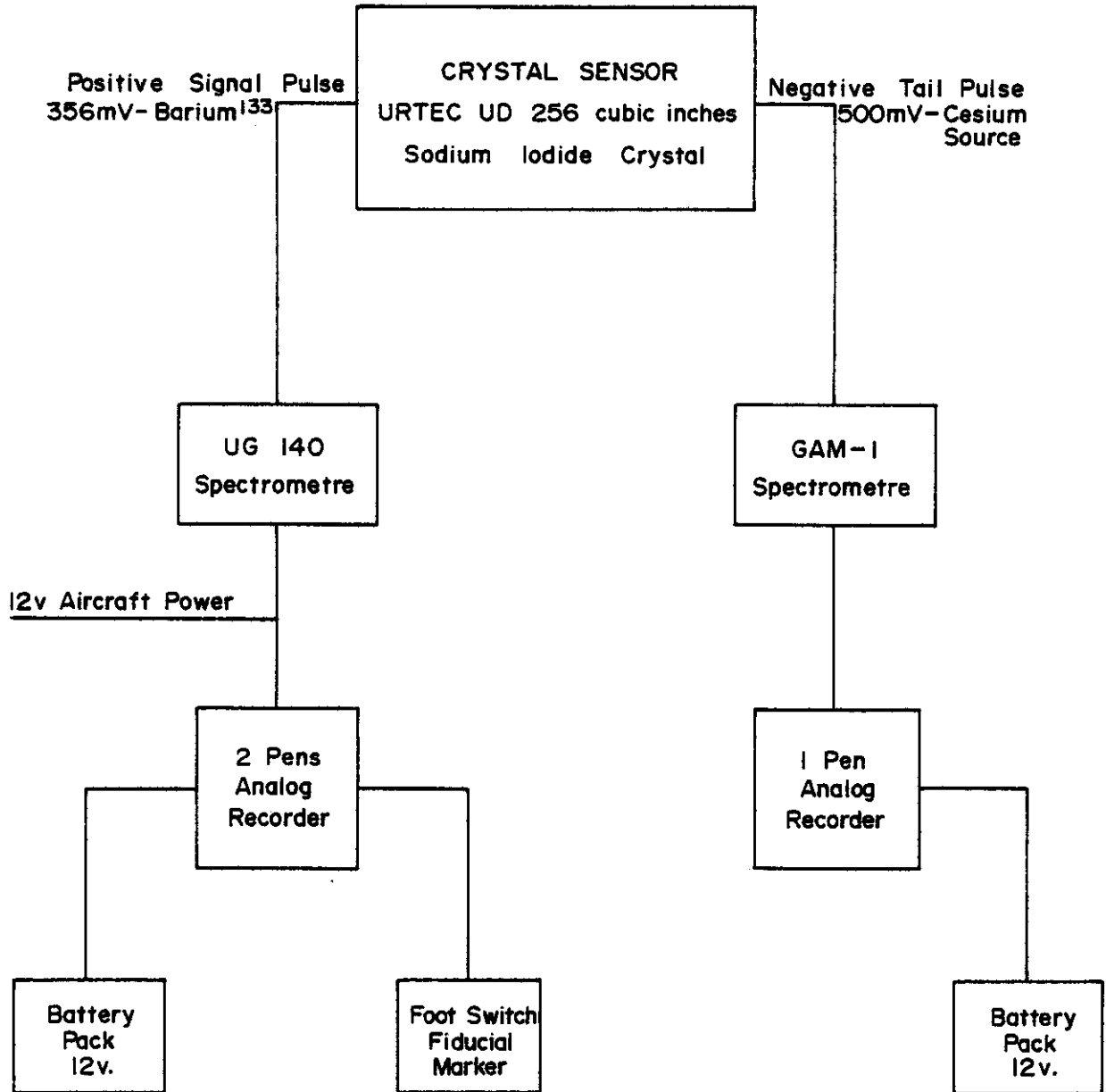
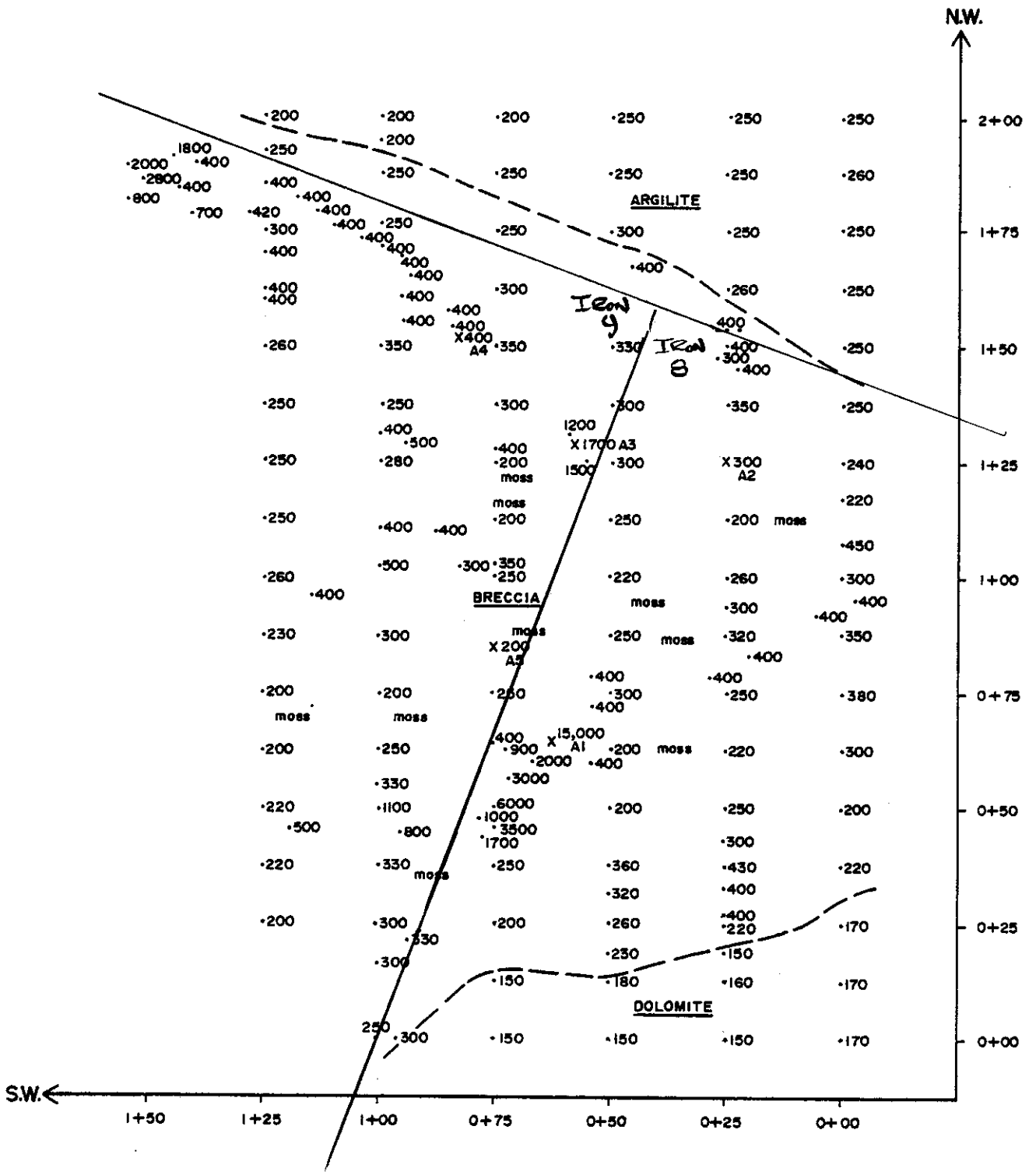


Fig. 5

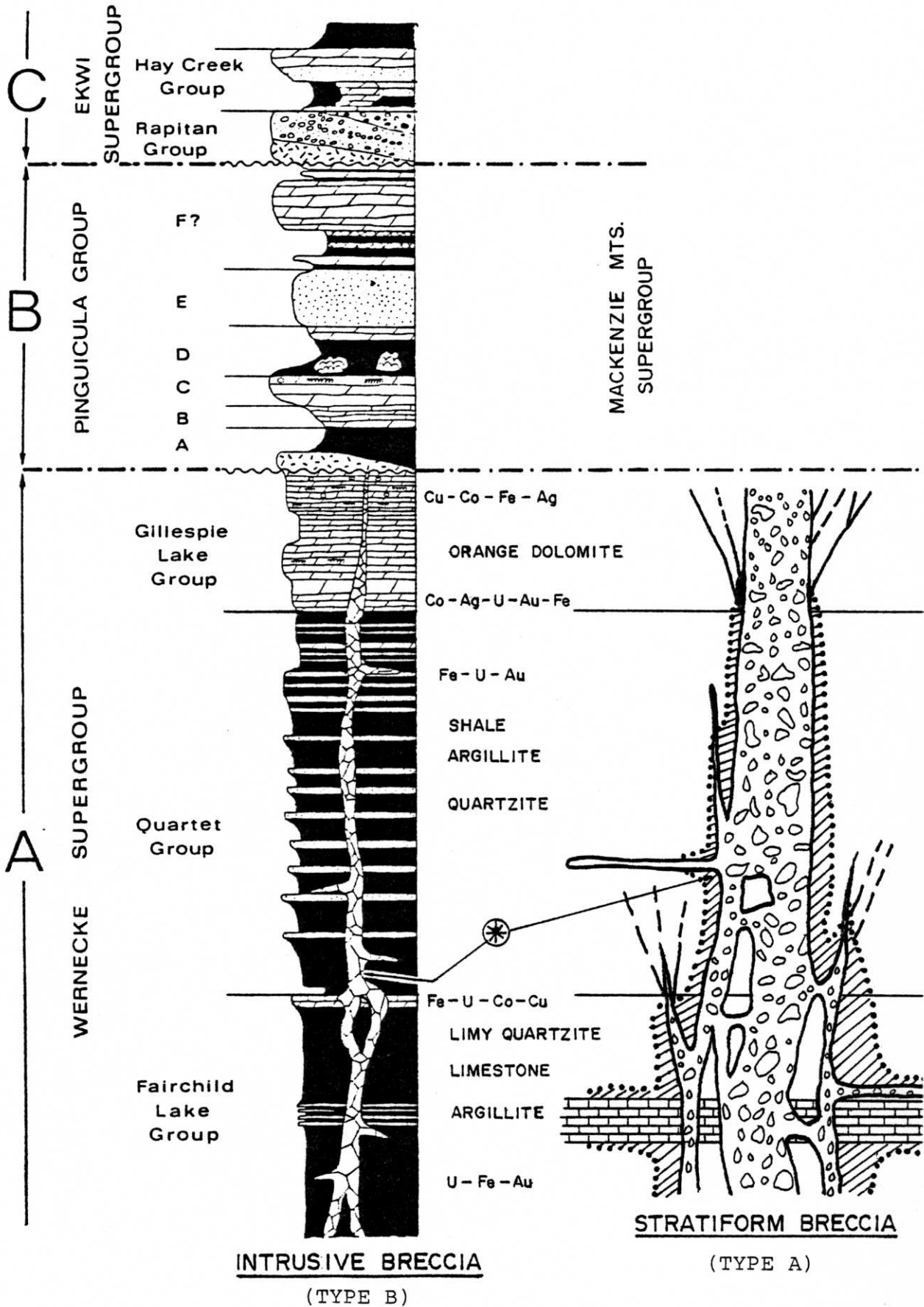


**LEGEND**

- x = outcrop
- = soil surface

**Fig. 6: GROUND SCINTILLOMETER SURVEY (T.C.S.) IRON CLAIMS**

# INTRUSIVE AND STRATIFORM BRECCIAS



⊛ 1.5 BILLION YEARS (K-Ar Biotite dating)

Fig. 7

APPENDIX I

AFFIDAVIT OF EXPENDITURES

The following list represents invoiced expenditures paid for the exploration program conducted on the Bear River properties, Wind River area during the period between May 28th, 1980 and December 31st, 1980.

- A) Exploration expenses on each Claim Block are distributed as follows. (Chapter VII).

Iron Claims	(\$7,890.00 + \$4,500.00)	\$ 12,390
Adub Claims	(\$5,130.00 + \$5,210.00)	10,340
Hail Claims		10,140
Snowstar Claims		4,070
Judy Claims		<u>2,260</u>
Total Expenditures		\$ 39,200

B) Zelon's exploration expenses from May 28th to December 31st, 1980.

1. Cost of Assaying:

May 30, 1980	Supplies, Bags & Chemicals	166.40
Nov 18, 1980	Assay	172.40
Nov 26, 1980	Assay	60.00
Dec 5, 1980	Assay	220.00
Dec 12, 1980	Assay	104.50
Dec 12, 1980	Assay	280.50
Dec 18, 1980	Assay	320.00
Jul 29, 1980	Assay	55.50
Oct 20, 1980	Assay	143.00
Nov 24, 1980	Assay	<u>30.00</u>

\$ 1,552.30

For 76 rock analysis, 55 within Zelon's claims, 21 outside Zelon's claims  
Rounded to \$20/per assay for expenditure claims.

2. Helicopter Cost

Jun 18, 1980	\$300/hr flying	\$ 6,390.00
Jun 18, 1980	" " "	4,985.47
Jun 25, 1980	" " "	14,550.00
Jun 3, 1980	" " "	9,180.00
Jul 11, 1980	Liability Insurance	1,000.00
Jul 29, 1980	\$300/hr flying	21,570.00
Aug 22, 1980	Related Costs	250.28
Aug 22, 1980	\$300/hr flying	4,248.62
Aug 22, 1980	" " "	20,670.00
Aug 22, 1980	" " "	<u>15,450.00</u>
Total Expenditures		\$98,294.37

White Pass Fuel Expenses

Jun 9, 1980	Jet Fuel	11,155.76
Jun 13, 1980	Fuel and Drums	3,676.20
Jun 14, 1980	Jet Fuel	175.90
Jun 16, 1980	Fuel & Drums	10,759.76
Jun 24, 1980	Jet Fuel	307.47
Jun 30, 1980	" "	226.58
Jul 13, 1980	" "	110.97
Jul 25, 1980	" "	271.70
Aug 10, 1980	" "	207.39
Aug 14, 1980	" "	<u>194.48</u>
		<u>27,086.21</u>

\$125,380.58

Hence total cost for 321.3 hrs. is \$125,380.58.

Hence average hourly rate rounded \$390.00.

3. Field personnel salaries, Transportation and Camp expenses

1. Zelon's field personnel salaries 450 men days	\$ 45,800.00
2. Zelon's overhead and office expenses	14,450.00
3. Project mobilization and truck rentals (Vancouver - Mayo - Vancouver)	9,500.00
4. Air North Transportation Camp Mobilization, camp demobilization, supplies, flight, fuel mobilization	18,119.85
5. Equipment Rentals Including Airborne radiometric system, hand scintillometers, tents, general camp and prospecting equipment	25,800.00
6. Camp supplies and food costs May 28 - August 18, 1980	38,150.00
7. Zelon's drafting expenses	<u>7,100.00</u>
	\$158,919.85

Hence per deum based on 450 men/days on the project \$350.00.

\* Note: This includes the helicopter pilot's camp expenses but not salaries attributed to Texaco Canada personnel or their Calgary - Mayo expenses.

APPENDIX II

ROCK GEOCHEMISTRY RESULTS

1. Rock Geochemistry

Table 1E: Land Acquisition Rock Geochemistry

Table 2E: Dolores Creek Rock Geochemistry

TABLE 1E: LAND ACQUISITION ROCK GEOCHEMISTRY

1. IRON CLAIM GROUP

Sample No.	Cu %	Co ppm	Ag ppm	Au ppb	U ppm	lb/T
JF53	0.015	10.0	0.9	ND	5600 =	13.2
	Surface breccia sample with weathering TC=1200 c/s					
JH76	0.033	32.0	1.4	610	1800 =	4.43
	Iron Unit #2 main showing top, TC=1600 c/s					
JR31	0.041	16.0	0.8	120.0	340.0=	0.81
	Iron peripheral breccia, TC=450 c/s					
T36	0.006	75.0	4.0	200.00	+2000 =	+8.6
	Iron peripheral breccia, TC=1500 c/s					
JH94-5	Pit A iron breccia before blast				860 =	1.8
H116	Iron claims #24-30				820 =	1.9
Sb-1-80					400 =	0.8
Sb-2-80					390 =	0.7
Sb-3-8					720 =	1.4
Sb-6-80					830 =	1.6
RM-104-80	Trench sample				040 =	0.8
RM-105-80	Trench sample				046 =	0.9
RM-106-80	Grab samples				1730 =	3.4
RM-107-80	Grab samples				1170 =	2.3
T28	0.032	76	7.4	150	750 =	1.8
	Gordon staking - SW of Bear River, TC=500-800 c/s					
T32	0.355	82	0.4	120	730 =	1.8
	Iron claims, TC=500 c/s					
T34	0.004	18	0.3	30	4 =	0.01
	Iron claims boundary TC=100 c/s					

2. ADUB CLAIM GROUP

JH130	0.012	1.15	0.5	355	+1000 =	+2.3
JH131	0.005	1.25	1.0	355	42 =	0.1
JH132	0.006	1.35	0.4	310	88 =	0.2
JH133	0.001	18.0	1.5	64	640 =	1.5
	Anomalous gold value with 2.56 ppm					
Sb-7-80	Tor showing - Adub Claims, $U_3O_8 = 660 = 1.3$					

Cont'd. - TABLE 1E: LAND ACQUISITION ROCK GEOCHEMISTRY

3. HAIL CLAIM GROUP

Sample No.	Cu %	Fe %	Ag Oz/T	Co ppm	U %	lbs/T
RM-109-80					.1630	= 3.2
RM-110-80					.2350	= 4.7
RM-111-80					.2840	= 5.6
RM-112-80					.2160	= 4.3
RM-114-80					.1870	= 3.7
RM-115-80					.4530	= 9.6
RM-119-80					.7270	= 14.5
RM-120-80					.2420	= 4.8
RM-121-80					.3050	= 6.1
JH182	0.07	11.5	0.18		7.5500	=151.0
JH183	-0.01	4.9	0.14		.0600	= 1.2
JH184	-0.01	4.9	0.02		.2600	= 5.2
JH185	-0.01	4.2	0.14		.1700	= 3.4
JH186	-0.01	4.0	0.18		.1800	= 5.6
JH187	-0.01	5.5	0.10		.0300	= 0.6
JH188	-0.01	4.5	0.14		.3300	= 6.6
JH189	-0.01	2.5	0.18		.4700	= 5.4
JH193a	-0.01	2.6	0.16		.3100	= 6.2
JH193b	-0.01	3.4	0.02		.4500	= 9.0
JH193c	-0.01	4.1	0.12		.1700	= 3.4
RM-10378					.30	= 6.0
RM-10379					.40	= 8.0
RM-10381					.40	= 8.0
RM-10382					1.15	= 23.0
RM-10383					0.80	= 16.0

TABLE 2E: DOLORES CREEK AREA - ROCK GEOCHEMISTRY

Sample No.	Cu %	Co ppm	Ag ppm	Au ppb	U ppm	lbs/T
<u>3. DOLORES CREEK COBALT CIRQUE</u>						
RM-122-80					3.1700	= 63.4
RM-123-80					2.1300	= 42.6
RM-124-80					1.9300	= 38.6
RM-125-80					.4370	= 8.74
RM-103-80					.0700	= 21.4

The Knit Claim Group presents some copper enrichment along with uranium minerals. Total count is variable: 2000-15,000 c/s. Kut variable 30-180 c/s.

JH105	0.09	37	0.5	ND	+2000*	= 10.5
JH103					+2000*	= 18
JH104					+2000*	= 59

## ROCK GEOCHEMISTRY RESULTS

### 2. Analytical Results

Table A: Iron Claim Group  
Table B: Iron Claim Group  
Table C: Iron Claim Group

Table A: Hail Claim Group  
Table B: Hail Claim Group  
Table C: Hail Claim Group

Geo Analytical Services (Western) Ltd.  
Loring Laboratories Ltd.  
Vangeochem Lab Ltd.  
Bondar-Clegg & Company Ltd.  
Chemex Labs Ltd.

TABLE A: IRON CLAIM GROUP

SAMPLE NO.	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Cd ppm	Mn ppm	Fe %	Ba %	Ti %	B ppm	W ppm
T36	263	62	217	18.3	4.5	1.4	964	2.0	-	.2	9.8	4.3
*	29	7	25	1.9	.5	-	108	.2	-	-	.4	.5
JH76	23	336	126	1642	1.2	3.2	1318	2.4	-	-	3.5	16.8
*	3	33	13	178	.2	.3	145	.3	-	-	-	1.6
JH94	13	114	53	62.1	.8	.8	563	1.4	-	.1	68.9	8.3
*	2	18	5	6.4	.1	-	60	.2	-	-	6.5	.5
JH95	11	65	45	25.4	.9	.7	398	1.6	-	.1	2.9	7.5
*	1	6	5	2.7	-	-	42	.2	-	-	-	.7

\* (10 X Diluted)

TABLE B: IRON CLAIM GROUP

SAMPLE NO.	Ni ppm	Co ppm	As ppm	Sb ppm	Bi ppm	V ppm	Ca %	Mg %	Al %
T36	73	110	21.8	5.6	5.7	11.8	1.9	.9	.26
*	8	13	2.4	1.4	1.5	1.1	.2	-	-
JH76	26	50	35.3	7.4	6.8	24.3	1.7	.6	.46
*	3	6	3.7	1.6	2.0	2.5	.2	-	-
JH94	31	20	11.5	6.4	3.3	24.4	.2	.8	.65
*	4	2	-	1.0	1.2	2.7	.1	-	-
JH95	31	29	13.6	4.7	4.6	28.8	.8	.7	.69
*	3	3	1.6	.5	1.0	3.0	-	-	-

---

\* (10 X Diluted)

TABLE C: IRON CLAIM GROUP

SAMPLE NO.	U ppm	Th ppm	V ppm	Ca %	P %	La ppm	In ppm	Mn ppm	Fe %
T36	3184	50	11.8	1.9	-	29.3	.87	964	2.0
*	328	5	1.1	.2	-	3.0	.09	108	.2
JH76	2069	18	24.3	1.7	-	16.8	7.13	1318	2.4
*	210	2	2.5	.2	-	1.8	1.17	145	.3
JH94	1576	16	24.4	1.2	-	21.1	3.58	563	1.4
*	161	2	2.7	.1	-	2.3	.56	51	.2
JH95	1509	16	28.8	.8	-	25.4	4.04	398	1.6
*	152	2	3.1	-	-	2.7	-	42	.2

\* (10 X Diluted)

TABLE A: HAIL CLAIM GROUP

SAMPLE NO.	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Cd ppm	Mn ppm	Fe %	Ba %	Ti %	B ppm	W ppm
JH119	137	13	92	20	-	16	17921	28	-	.1	6.2	50.4
*	15	1	17	2	-	-	3524	3	-	-	5.0	9.6
JH182	31	755	1859	41	-	11	3546	10	-	-	43.5	102
*	3	72	239	5	-	.1	460	1	-	-	4.6	10
JH183	4	10	28	27	.5	.7	981	3	-	-	40.3	3
*	-	1	4	3	-	-	109	-	-	-	3.7	-
JH184	6	2	188	52	.4	2.4	3394	4	-	.1	42.9	12.2
*	-	-	21	6	-	-	416	-	-	-	4.0	1.4
JH185	6	4	151	44	.5	1.8	3021	3	-	-	4.5	9.8
*	-	-	17	5	-	-	364	-	-	-	-	1.3
JH186	4	5	266	49	-	1.7	2586	3	-	.1	44.4	10.5
*	-	-	32	6	-	.1	304	-	-	-	4.0	.9
JH187	10	4	35	98	-	2.3	1145	5	-	-	4.3	2.9
	1	-	3	11	-	.2	133	-	-	-	-	.7
RE:JH187	8	7	34	93	-	2.3	1081	4	-	-	68.7	2.1
*	1	1	3	11	-	.1	134	-	-	-	7.1	.4
JH188	4	21	337	51	-	2.6	2875	4	-	.1	57.8	10.3
*	-	2	39	6	-	-	351	-	-	-	5.6	1.2
JH189	3	15	530	24	-	1.3	2707	2	-	-	3.4	11.4
*	-	1	61	3	-	.1	316	-	-	-	-	.9

\* (10 X Diluted)

TABLE A: HAIL CLAIM GROUP - Cont'd.

SAMPLE NO.	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Cd ppm	Mn ppm	Fe %	Ba %	Ti %	B ppm	W ppm
JH193A	7	7	277	23	.4	.9	3088	2.1	-	-	52.6	10.1
*	-	1	30	3	-	-	357	-	-	-	4.9	.8
JH193B	3	9	399	39	.2	1.8	2238	2.8	-	.2	3.4	10.2
*	-	1	45	5	-	-	265	.3	-	-	-	.8
JH193C	4	7	171	39	.4	2.4	3409	3.3	-	-	51.1	10.6
*	-	-	21	5	-	.3	419	.4	-	-	4.7	1.2

\* (10 X Diluted)

TABLE B: HAIL CLAIM GROUP

SAMPLE NO.	Ni ppm	Co ppm	As ppm	Sb ppm	Bi ppm	V ppm	Ca %	Mg %	Al %
JH119	63	55	12.4	99.5	-	11.0	.16	.8	.10
*	9	9	-3.0	3.4	1.62	2.41	.02	.1	.01
JH182	177	368	437	144	45.0	150	.39	.5	1.47
*	22	49	48	19	6.8	8	.05	.0	.17
JH183	69	78	61	3	2.8	33	.33	1.0	1.39
*	8	9	6	-	1.6	4	.04	.1	.16
JH184	100	6	8	4	4.9	33	4.20	3.1	2.15
*	12	-	-	-	1.5	4	.49	.4	.24
JH185	86	4	6	4	2.9	31	3.89	2.8	1.9
*	10	-	-	-	1.3	4	.44	.4	.20
JH186	95	5	15	4	4.4	36	2.81	2.7	1.98
*	12	5	3	-	1.5	4	.32	.3	.21
JH187	140	108	18	2	2.0	35	.99	3.3	3.06
*	17	13	1	-	1.5	4	.11	.4	.35
JH187	133	103	19	2	1.6	34	.93	3.2	2.95
*	16	13	3	-	1.0	4	.11	.4	.35
JH188	100	6	15	6	4.0	38	3.66	3.0	2.05
*	12	1	1	2	1.6	4	.42	.3	.23
JH189	42	7	32	10	5.7	22	3.43	1.9	.95
*	5	1	3	1	1.5	2	.37	.2	.10

\* (10 X Diluted)

TABLE B: HAIL CLAIM GROUP - Cont'd.

SAMPLE NO.	Ni ppm	Co ppm	As ppm	Sb ppm	Bi ppm	V ppm	Ca %	Mg %	Al %
JH193A	37.5	8.14	20.7	4.77	4.6	18.7	2.8	1.49	.95
*	4.0	.9	2.3	.90	1.7	2.0	.3	.17	.10
JH193B	77.2	5.86	25.7	5.55	4.1	36.6	2.7	2.33	1.66
*	8.2	.56	2.7	1.26	1.2	3.9	.3	.28	.18
JH193C	76.6	4.16	4.4	2.97	3.5	28.7	4.8	3.04	1.72
*	9.5	.50	-	.80	1.2	3.2	.6	.39	.19

\* (10 X Diluted)

TABLE C: HAIL CLAIM GROUP

SAMPLE NO.	U ppm	Th ppm	V ppm	Ca %	P %	La ppm	In ppm	Mn ppm	Fe %
JH119	3103	385	11	.16	-	70.6	7.6	17921	27.9
*	343	43	2	.02	-	4.5	4.1	3524	3.4
JH182	60840	-	150	.39	-	81.2	64.8	3546	10.3
*	6598	-	8	.05	-	8.6	6.7	460	1.2
JH183	392	15	33	.32	-	15.4	3.3	981	3.4
*	51	2	4	.03	-	1.6	.1	109	.4
JH184	2193	113	33	4.20	-	11.7	7.1	3394	3.8
*	232	12	4	.48	-	1.0	.6	416	.4
JH185	1376	58	31	3.88	.1	9.7	6.2	3021	3.4
*	146	6	4	.44	-	.8	1.3	364	.4
JH186	2152	96	36	2.81	.1	10.6	4.8	2586	3.3
*	222	10	4	.32	-	1.0	.9	304	.4
JH187	251	19	35	.99	.1	9.9	4.5	1145	4.7
*	28	2	4	.11	-	.7	.6	133	.5
JH187	235	18	34	.92	.1	9.1	4.3	1081	4.5
*	27	2	4	.11	-	.9	.8	134	.5
JH188	2326	99	38	3.66	.1	11.8	7.3	2875	3.7
*	248	11	4	.43	-	1.0	1.0	351	.4
JH189	3599	138	22	3.43	-	10.2	6.6	2707	2.2
*	375	15	2	.38	-	1.0	.5	316	.3

\* (10 X Diluted)

TABLE C: HAIL CLAIM GROUP

SAMPLE NO.	U ppm	Th ppm	V ppm	Ca %	P %	La ppm	In ppm	Mn ppm	Fe %
JH193A	1944	143	18.7	2.8	.1	5.87	4.6	3088	2.1
*	201	15	2.0	.3	-	.56	.2	357	.2
JH193B	3154	121	36.6	2.7	-	10.6	6.9	2238	2.8
*	334	13	3.9	.3	-	1.0	1.0	265	.3
JH193C	1281	50	28.6	4.8	-	9.2	5.7	3409	3.3
*	137	5	3.3	.5	-	.8	.3	419	.4

\* (10 X Diluted)



SEP 12 1980

TEXACO

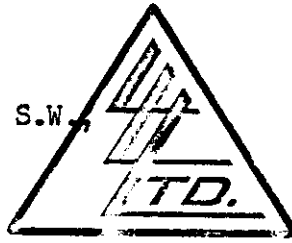
PAGE 1 (a)

SAMPLE TYPE.

LAB No.	CLIENT No.		Al <sub>2</sub> O <sub>3</sub> %		CaO %		MgO %		K <sub>2</sub> O %					
1	RM - 1 - 80		1.85		.427		.501		0.16					
2	RM - 2 - 80		1.01		.347		2.83		0.14					
3	RM - 3 - 80		.080		.027		.037		0.01					
4	RM - 4 - 80		.085		.091		10.00		0.03					
5	RM - 5 - 80		6.58		.336		2.29		2.22					
6	RM - 6 - 80		16.4		2.65		1.80		3.01					
7	RM - 7 - 80		11.0		.294		.685		3.49					
8	RM - 8 - 80		.144		.149		7.33		0.04					
9														
0														
1														
2	CLIENT NO.		Na <sub>2</sub> O %		Fe <sub>2</sub> O <sub>3</sub> %		TiO <sub>2</sub> %		MnO %		P <sub>2</sub> O <sub>5</sub> %		L.O.I. %	
3	RM - 1 - 80		6.23		10.6		.0375		.371		N.D.		3.50	
4	RM - 2 - 80		1.66		41.7		.0117		2.96		N.D.		16.85	
5	RM - 3 - 80		0.45		55.3		.0025		.233		N.D.		12.35	
6	RM - 4 - 80		0.27		41.2		.0017		1.40		N.D.		22.10	✓
7	RM - 5 - 80		0.22		13.2		.193		.0686		N.D.		4.10	
8	RM - 6 - 80		4.45		1.96		0.69		.138		.160		2.65	
9	RM - 7 - 80		1.80		19.7		0.56		.0252		N.D.		2.30	
0	RM - 8 - 80		0.17		58.4		.0033		2.99		.028		30.20	



To: TEXACO CANADA RESOURCES LIMITED,  
4th Flr., Ste. 413, 600 - 6th Ave. S.W.,  
P.O. Box 3333,  
Calgary, Alberta T2P 2P8  
 ATTN: R. Munday



File No. 20392  
 Date October 20, 1980  
 Samples Rock Chip

*Certificate of*  
**ASSAY of**

JUN 18 1981

**LORING LABORATORIES LTD.**

Page # 1

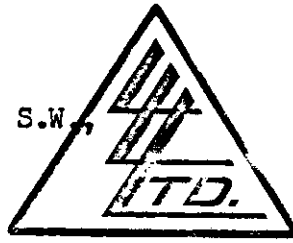
SAMPLE No.	OZ./TON GOLD	OZ./TON SILVER	Chemical % U3O8	% Cu	% Co
<u>"Rock Chips"</u>					
104-80	-	-	.040	-	IRON GROUP -
105-80	-	-	.046	-	" "
106-80	-	-	.173	-	" "
107-80	-	-	.117	-	" "
109-80	-	-	.163	-	HAIL GROUP -
110-80	-	-	.235	-	" "
111-80	-	-	.284	-	" "
112-80	-	-	.216	-	" "
113-80	-	-	.187	-	" "
114-80	-	-	.453	-	" "

**I Hereby Certify** THAT THE ABOVE RESULTS ARE THOSE  
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .

Rejects Retained one month.  
 Pulps Retained one month  
 unless specific arrangements  
 made in advance.

*D. Enders*  
 Assayer

To: TEXACO CANADA RESOURCES LIMITED,  
4th Flr., Ste. 413, 600 - 6th Ave. S.W.,  
P.O. Box 3333,  
Calgary, Alberta T2P 2P8  
 ATTN: R. Munday



File No. 20392  
 Date October 20, 1980  
 Samples Rock Chip

*Certificate of*  
**ASSAY of**

JUN 18 1981

**LORING LABORATORIES LTD.**

Page # 2

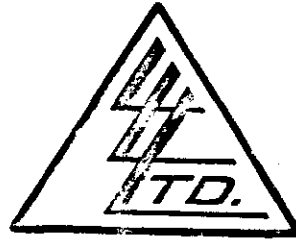
SAMPLE No.	Chemical % U3O8	
RM-119-80	.727	HAIL GROUP
120-80	.242	"
121-80	.305	"

**I Hereby Certify** THAT THE ABOVE RESULTS ARE THOSE  
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .

Rejects Retained one month.  
 Pulps Retained one month  
 unless specific arrangements  
 made in advance.

*D. Endee*  
 Assayer

To: Texaco Canda Resources Limited  
4th flr, 413, 600 - 6th Avenue S.W.  
P O BOX 3333  
CALGARY, Alberta T2P 2P8  
ATTN: S. COLDWELL



File No. 19737  
Date July 29th, 1980  
Samples Rock Samples

*Certificate of*  
**ASSAY of**

JUN 18 1981

**LORING LABORATORIES LTD.**

SAMPLE No.	CHEMICAL % U3O8	% Fe
<u>"Rock Samples"</u>		
SB-1-80	.041 IRON GROUP	5.60
SB-2-80	.039 IRON GROUP	5.35
SB-7-80	.066 ADUB GROUP	3.99
<p><b>I Hereby Certify</b> THAT THE ABOVE RESULTS ARE THOSE  ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .</p>		

Rejects Retained one month.  
Pulps Retained one month  
unless specific arrangements  
made in advance.

*[Signature]*

Licensed Assayer of British Columbia



VANGEOCHEM LAB LTD.

1521 PEMBERTON AVE., NOV 19 1980 TELEPHONE: 986-5211  
 NORTH VANCOUVER, B.C., AREA CODE: 604  
 CANADA V7P 2S3

•Specialising in Trace Elements Analyses•

**Certificate of Geochemical Analyses**

-IN ACCOUNT WITH-

Zelon Enterprises Ltd.  
 #904 - 510 West Hastings St.  
 Vancouver, B.C. V6V 1L8

Attention:

Report No: 80-43-003 Page 1 of 1

Samples Arrived: November 6, 1980

Report Completed: November 18, 1980

For Project: —

Analyst: E.T. & VGC Staff

Invoice: # 5967 Job # 80-384

Sample Marking	Cu ppm	Ag* ppm	Co ppm	Au ppb	U ppm
H - 110	75000	44.4	1850	300	11.0
JF 53	150	0.9	10	nd	560.0
JH 76	328	1.4	32	610	1880.0
89	130000	0.1	171	640	24.0
105	940	0.5	37	nd	>2000.0
117	11000	0.6	240	270	400.0
122	740	45.8	27	360	>2000.0
123	480	5.9	20	60	1880.0
JH 124	600	0.5	30	nd	700.0
JR 31	4100	0.8	16	120	340.0
T 36	60	4.0	75	200	>2000.0
LI	—	—	—	—	>2000
JH 94	—	—	—	—	860
95	—	—	—	—	780
99	—	—	—	—	340
101	—	—	—	—	1460
103	—	—	—	—	>2000
104	—	—	—	—	>2000
116	—	—	—	—	820
118	—	—	—	—	1200
119	—	—	—	—	>2000
120	—	—	—	—	>2000
121	—	—	—	—	88
125	—	—	—	—	>2000
JH 126	—	—	—	—	>2000

MASTER PRINTING LTD.

REMARKS: Ag\* = Ag background corrected.

Signed:

% Mo x 1.6683 = % MoS<sub>2</sub>      1 Troy oz./ton = 34.28 ppm      1 ppm = 0.0001%      nd = none detected      ppm = parts per million  
 All values are believed to be correct to the best knowledge of the analyst based on the method and instruments used.

DEC 18 1980

**Certificate of Geochemical Analyses**

\* Specializing in Trace Elements Analyses \*

-IN ACCOUNT WITH-

Zelon Enterprises Ltd.  
 #904 = 510 West Hastings St.  
 Vancouver, B.C. V6V 1L8

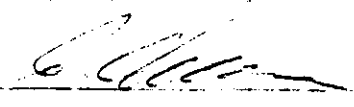
Attention:

Report No: 80-43-005 Page 1 of 1  
 Samples Arrived: December 11, 1980  
 Report Completed: December 18, 1980  
 For Project: --  
 Analyst: E.T. & VGC Staff  
 Invoice: 6008 Job # 80-405

Sample Marking	Mo ppm	Cu ppm	Ag* ppm	Co ppm	Fe %	Au ppb	U ppm
DR 13 B	4	5	0.6	60	1.95	60	80.0
DR 17	33	17500	3.5	22	5.00	70	3.8
JH 130	14	125	0.5	365	1.15	70	> 1000.0
131	17	48	1.0	355	1.35	20	42.0
32	4	9600	0.8	32	5.25	10	3.2
132	26	64	0.4	310	1.35	20	38.0
133	62	12	1.5	64	28.00	2560	640.0
134	4	210000	22.0	23	0.90	70	2.8
135	32	29600	nd	33	11.00	300	160.0
136	17	9600	0.3	38	12.50	120	36.0
180	5	850	0.2	10000	1.20	1180	7.0
JH 81	3	154	nd	132	2.75	90	820.0
T 28	29	320	7.4	76	3.35	150	750.0
32	8	3550	0.4	82	2.55	120	730.0
T 34	3	41	0.3	18	1.60	30	4.0
TY DR 6	13	63	0.3	1950	14.50	10	1.6

Ag\* = Ag background corrected.

*> Greater than blank. 1 - sample reported for background*



To: Vangeochem Labs

NOV 28 1980

REPORT NO. A20 - 1817

PAGE No. 1

BONDAR-CLEGG & COMPANY LTD.

DATE: November 24, 1980

1521 Pemberton Avenue  
North Vancouver, B. C.  
V7P 2S3

CERTIFICATE OF ASSAY

Samples submitted: November 12, 1980  
Results completed: November 24, 1980

PROJECT: Zelon

I hereby certify that the following are the results of assays made by us upon the herein described ore samples.

MARKED	GOLD		SILVER		Percent	Percent	Percent	Percent	Percent	Percent	Percent
	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton							
H - 111	0.002		11.00								
112A	0.050		14.90								
112B	0.002		2.77								
113	0.12		6.55								
114	0.002		11.80								
115	0.005		20.10								

NOTE:  
Rejects retained three weeks  
Pulps retained three months  
unless otherwise arranged.



# CHEMEX LABS LTD.

212 BROOKSBANK AVE.  
 NORTH VANCOUVER, B.C.  
 CANADA V7J 2C1  
 TELEPHONE: (604)984-0221  
 TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

<b>CERTIFICATE OF ASSAY</b>
-----------------------------

TO : ZELON ENTERPRISES LTD.  
 904-510 WEST HASTINGS ST.  
 VANCOUVER, B.C.  
 V6B 1L8

CERT. # : A8011226-001-1  
 INVOICE # : 41206  
 DATE : 12-DEC-80  
 P.O. # : NONE

Sample description	Prep code	Cu percent	Fe percent	U308 (%) fluor.	Ag oz/t	Au oz/t	
L1U	214	--	4.92	4.410	--	--	--
T36	214	--	2.31	0.430	--	--	--
JH 103	214	--	4.18	0.900	--	--	--
JH 104	214	--	1.78	2.990	--	--	--
JH 105	214	--	4.61	0.540	--	--	--
JH 119	214	--	33.90	0.490	--	--	--
JH 120	214	--	22.40	2.580	--	--	--
JH 122	214	--	15.50	0.470	--	--	--
JH 123	214	--	16.60	0.330	--	--	--
JH 125	214	--	27.20	3.950	--	--	--
JH 126	214	--	31.40	0.570	--	--	--
JH 182	207	0.07	11.50	7.550	0.18	0.005	--
JH 183	207	<0.01	4.92	0.060	0.14	<0.003	--
JH 184	207	<0.01	4.93	0.260	0.02	0.003	--
JH 185	207	<0.01	4.23	0.170	0.14	<0.003	--
JH 186	207	<0.01	4.06	0.280	0.18	<0.003	--
JH 187	207	<0.01	5.51	0.030	0.10	<0.003	--
JH 188	207	<0.01	4.54	0.330	0.14	<0.003	--
JH 189	207	<0.01	2.54	0.470	0.18	<0.003	--
JH 193A	207	<0.01	2.66	0.310	0.16	<0.003	--
JH 193B	207	<0.01	3.42	0.450	0.02	<0.003	--
JH 193C	207	<0.01	4.16	0.170	0.12	<0.003	--

*R. Swait*

.....  
 Registered Assayer, Province of British Columbia







65° 30'

65° 00'

64° 30'

Scale  
Miles 0 1 2 3 4 5  
Kilometers 0 1 2 3 4 5

**LEGEND**

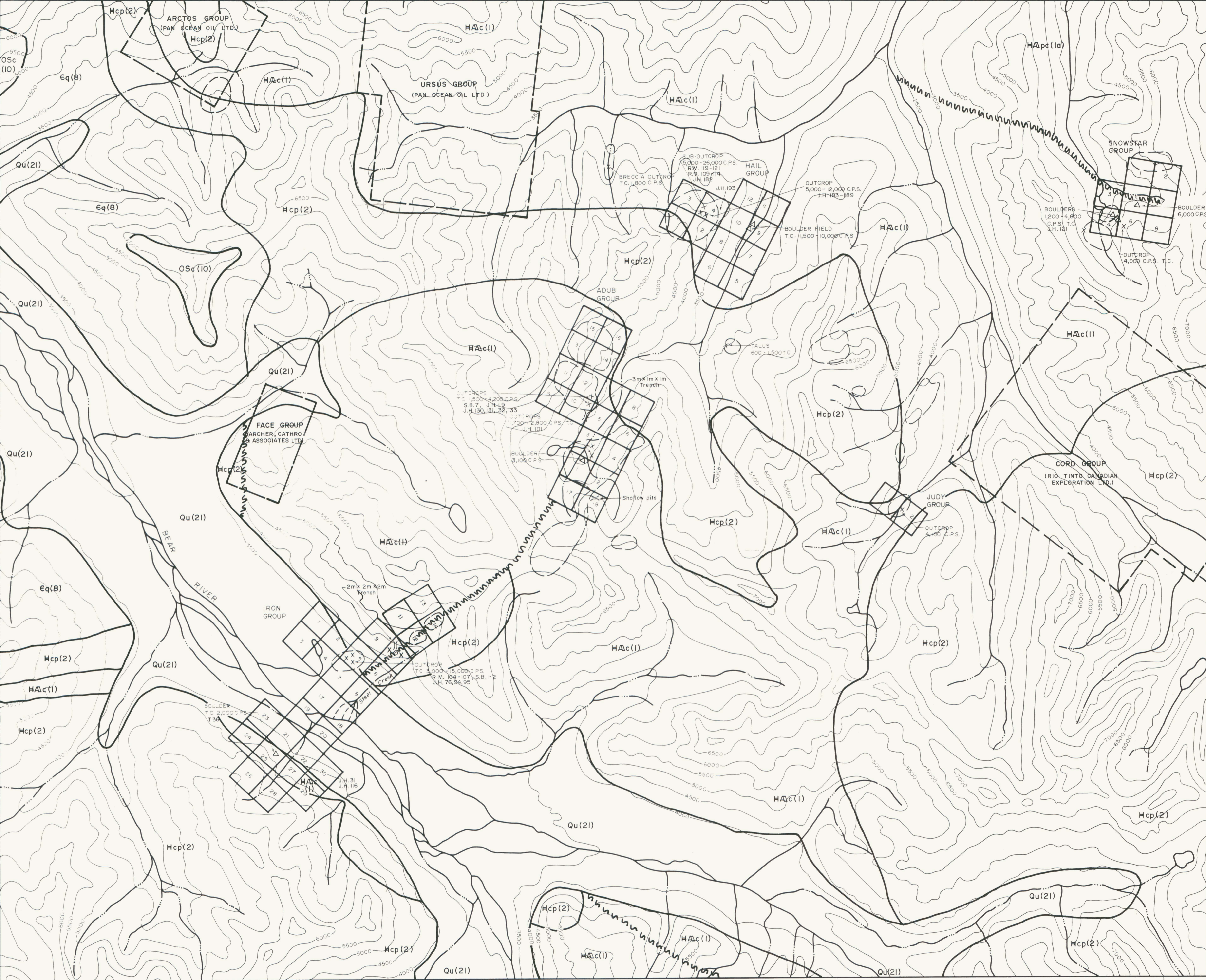
- geological boundary
- fault
- breccia (prospected)
- ground traverse
- claim group
- Texaco Holdings
- Helikian orange dolomite unit 2 and 3 interchangeable (field observation)
- lakes

**ZELON ENTERPRISES**  
GEOLOGICAL SERVICES

**WERNECKE MOUNTAIN AREA**  
GEOLOGY AND GROUND WORK

DATE: DEC. 1980    DWN J.E.    SCALE: 1:250,000  
 APPROVED BY: J.H.H.    NO.: FIG. 2

898000



**LEGEND**

- △ - boulder
- X - talus, outcrops
- - breccia outcrops
- - streams and rivers
- - - - - intermittent
- [ ] - other claims
- - claim groups  
1 claim = 1500' x 1500' = 64 acres
- T.C. - total count
- C.P.S. - counts per second
- - geological boundary
- ||||| - fault
- Qu(21) - Quarternary unconsolidated sediments
- OSc(10) - Ordovician and Silurian carbonate
- Eq(8) - Cambrian unnamed clastics
- Hcp(2) - Helikian carbonate and shale
- HApc(1a) - Helikian and/or Apehbian shale, siltstone, argillaceous dolomite
- HAc(1) - Helikian and/or Apehbian dolomite

**URANIUM ASSAYS**

**HAIL CLAIM GROUP (12 claims)**

Sample No.	U <sub>3</sub> O <sub>8</sub> lb./ton*	Sample No.	U <sub>3</sub> O <sub>8</sub> lb./ton
R.M. 119	4.5	J.H. 182	151.0
120	4.8	183	1.2
121	6.1	184	5.2
R.M. 109	3.2	185	3.4
110	4.7	186	5.6
111	5.7	187	0.6
112	4.3	188	5.6
113	3.7	189	5.4
114	9.6	193A,B,C	34-9.0

**SNOWSTAR CLAIM GROUP (8 claims)**

Sample No.	U <sub>3</sub> O <sub>8</sub> lb./ton
J.H. 121	0.02

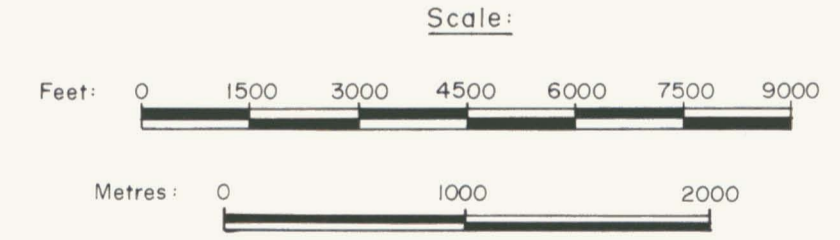
**ADUB CLAIM GROUP (18 claims)**

Sample No.	U <sub>3</sub> O <sub>8</sub> lb./ton	Sample No.	U <sub>3</sub> O <sub>8</sub> lb./ton
S.B. 7	1.3	J.H. 130	+3
J.H. 101	3.4	J.H. 131	0.1
J.H. 119	+5 (9.8)	J.H. 132	0.2
		J.H. 133	1.5

**IRON CLAIM GROUP (28 claims)**

Sample No.	U <sub>3</sub> O <sub>8</sub> lb./ton	Sample No.	U <sub>3</sub> O <sub>8</sub> lb./ton
R.M. 104	0.8	S.B. 1	0.8
105	0.9	S.B. 2	0.7
106	3.4	J.H. 94	2.0
107	2.3	J.H. 95	1.8
J.H. 76	4.43	J.H. 116	1.9
J.H. 31	0.8		
T. 36	+5 (8.6)		

\* NOTE: Lb. per short ton (2000 lb./ton)  
Conversion U<sub>3</sub>O<sub>8</sub> = Uppm. x 1.179



**BEAR RIVER AREA**  
**106-D-16**  
**YUKON LAND ACQUISITION**

09806



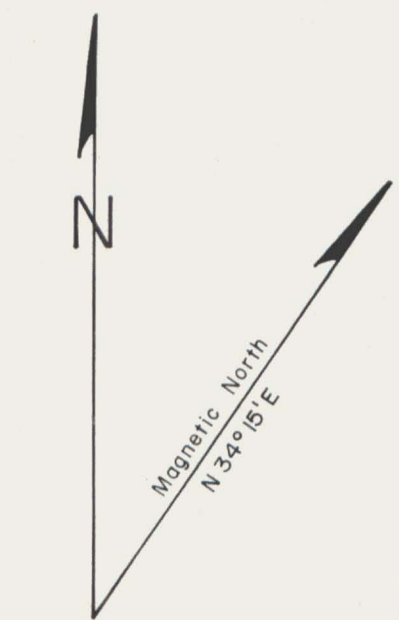
**LEGEND**

**Abbreviations**

Arg.	Argalite
Br.	Breccia
Ca.	Carbonate
Cu.	Copper
Dol.	Dolomite
Fe.	Iron
Gos.	Gossan
Hem.	Hematite
LS.	Limestone
Myl.	Mylanite
q.	Quartz
qte.	Quartzite
S.	Schist
Sh.	Shale
Sl.	Slate
Siltst.	Siltstone
Tal.	Talus

**Symbols**

	contour (interval)
	streams and rivers
	intermittent
	campsite
	claim boundaries
	stations
	boulders
	bedding
	breccia
	geological boundaries
	faults



0 1500 3000 6000 9000 Feet

0 500 1000 2000 Metres



**ZELON ENTERPRISES LTD.**  
Geological Services



**BEAR RIVER AREA  
GEOLOGICAL PROSPECTING**