823767

GEOLOGICAL REPORT AND WORK PROPOSAL

ON THE

THANKSGIVING PROPERTY

IN THE

REVELSTOKE AREA, SOUTHEASTERN B.C.

REVELSTOKE M.D.

82M/1

by

EDWARD W. GROVE, Ph.D., P.Eng.

FEBRUARY 28, 1981

TABLE OF CONTENTS

		PAGE
SUMMARY		1
INTRODUCT	PION	4
LOCATION	AND ACCESS	4
CLAIMS AN	ID OWNERSHIP	6
HISTORY		9
GEOLOGY		
	Geological Setting	10
	Local Geology	14
MINERALI2	SATION	
	Introduction	18
	The Thanksgiving Tungsten Deposit	21
CONCLUSIC)NS	30
RECOMMENI	DATIONS	32
	Phase I	32
	Phase II	36
	Phase III	36
	Other Recommendations	37
BIBLIOGRA	APHY	38
CERTIFICA	ATE	39
APPENDIX	A	•
	Bondar-Clegg Geocemical Lab Report	41
APPENDIX	В	
	Certificate of Assay	43
APPENDIX	С	
	Analytical Report	45
TABLES		
	1. Commodity Occurrence Densities For	
	Tectonic Belts in B.C.	22
	2. Relative Commodity Occurrence -	
	Densities forTectonic Belts in B.C.	22

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TABLE OF CONTENTS CON'T.

PAGE FIGURES 1. Property Location 5 2. Claim map 7 3. Main Structural Elements - Southern Omineca Crystalline Belt 11 4. Structural Elements - Revelstoke Area 13 5. Sketch map - Mineralized Area 17 6. Bar Graphs - Relative Density of Mineral Occurrences 23 7. Sketch Map - Creek Zone Workings 25 PLATES 1. General view from Highway 23 across Thanksgiving property 3 2A Examination of scheelite bearing rocks 8 2B Examination of scheelite bearing float 8 3A Feldspar porphyry dike 15 3B Close-up feldspar porphyry 15 4A General view - Creek Zone 20

4B Portion of trench - Creek Zone

20

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SUMMARY

The Thanksgiving group of four contiguous staked claims comprising 56 units is situated on the eastern slope of the Columbia River 20 kilometers north of Revelstoke, B.C. Access is by vehicle from Highway 23 which cuts across the lower west edge of the claim group. The present claims include significant tungsten bearing skarn mineralization which was found by prospectors in October 1980. This is a major new discovery hosted in a Kootenay Arc equivalent quartzitic sequence comprising part of the Clachnacudainn Salient, an eastward dipping allochthon lying on the east margin of the Shuswap Metamorphic Complex.

- 1 -

The Thanksgiving tungsten deposit lies within the Omineca Tectonic Belt, a zone in which most of the major tungsten deposits in British Columbia are known to occur, and in which massive sulfide deposits of major importance are also known.

Prospecting on the Thanksgiving property during the latter part of 1980 prior to snowfall located mineralized outcrops over an area about 200 meters square. In addition, tungsten bearing and massive sulfide float boulders were also found. Sampling of the accessible mineralized outcrops and examination by ultra violet lamp showed the presence of significant to 'high grade' scheelite in simple garnet/epidote skarn and in heavily oxidized sulfide rich materials. The presence of anomalous copper, zinc, and gold as well as pyrrhotite and magnetite provide targets for geochemical and geophysical survey methods.

A program to further investigate and assess the known mineralization and to systematically explore the remainder of the claim group is recommended. Proposed work consists of geological, geochemical, and geophysical surveys, coupled with detailed prospecting, trenching, sampling and diamond core drilling. The work program is broken down into three continuous phases the estimated cost of which is \$552,975.00.

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- 2 -



INTRODUCTION

A major new occurrence of scheelite mineralization was discovered 20 kilometers north of Revelstoke on Thanksgiving Day 1980. Four staked claims, the Thanksgiving No. 1, No. 2, No. 3, and No. 4 were recorded on December 2, 1980 and are owned by Cajac Exploration Ltd. Work on this new deposit has been limited by winter snow to prospecting, and some trenching of the main high-grade Creek Zone showing.

This report was commissioned by Andaurex Resources Inc. with the consent of the principals of Cajac Exploration to describe the deposit and to outline an exploration program for the 1981 field season. It is based upon personal visits and surveys by the writer to the property in mid-November before heavy snow fell, and again in mid-February to examine showings found and exposed after the writer's first visit.

LOCATION AND ACCESS

The Thanksgiving group of four staked mineral claims lies along Highway 23 at Hathaway Creek about 20 kilometers due north of Revelstoke (Figure 1). The claims extend from the Columbia River at about 487 m elevation on the western limits to about 1525 m on the easterly upper slopes of the property. LaForme Creek

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cuts across Thanksgiving No. 4 to empty into the Columbia River on Thanksgiving No. 3.

- 5 -

Access to the exposed scheelite mineralization on Thanksgiving No. 2 claim is exceptionally good. Highway 23, a paved major route, currently provides access to the lower portions of the claim group. A good secondary road leaves the main highway and cuts across No. 2 and No. 4 up LaForme Creek. Another secondary road south of the claim group at Sale Creek provides access to the upper slopes of Thanksgiving No. 1.



FIGURE 1

PROPERTY LOCATION

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Construction of the new Revelstoke Dam at Little Dalles Canyon will flood the Columbia River Valley to about the 1880 foot (570 m) level. Because of this a new highway is being constructed above the old road between Revelstoke and Mica Creek. This new highway now provides direct access to the main mineralized zones on Thanksgiving No. 2. A better location and access is difficult to imagine.

- 6 -

CLAIMS AND OWNERSHIP

The property consists of four contiguous staked claims comprising 56 units situated on the easterly slope of the Columbia River Valley about 20 kilometers north of Revelstoke, B.C. in Revelstoke M.D., and owned outright by Cajac Exploration Ltd.

The following summarizes the pertinent claim

Claim Name		Units	Record No.	Expiry	<u>y [</u>	<u>ate</u>
Thanksgiving No.	1	20	1087	December 2	2,	1981
Thanksgiving No.	2	8	1088	December 2	2,	1981
Thanksgiving No.	3	8	1089	December 2	2,	1981
Thanksgiving No.	4	20	1090	December 2	2,	1981
		56 unit:	S			

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PLATE 2A Examination of scheelite bearing rocks south of discovery outcrop -Thanksgiving property.



PLATE 2B Examination of scheelite bearing float -Thanksgiving property - November 1980.

HISTORY

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The first indication of previously unknown mineralization near Hathaway Creek was recognized on Thanksgiving Day 1980 by Cajac Exploration's prospectors examining an isolated patch of pyritic gossan exposed on the east verge of the recently constructed new bypass highway. Routine examination of material from this occurrence later under ultra violet light showed the presence of abundant scheelite. The prospectors returned to the new showing and began a systematic examination of the rock cuts along the road, outcrops, and stream float employing the use of black plastic tarps and ultra violet lamps. Prospecting was also carried out at night utilizing an ultra violet lamp. By mid-November the group had discovered the main scheelite zone upslope from the new rhad on the north side of Hathaway Creek and another scheelite zone several hundred feet south of the Creek below the new highway grade.

- 9 -

In addition they had also discovered massive sulfide float boulders in two areas along the old road leading uphill from the highway. It was at this time that the writer first visited the property and recommended opening up the main showing and further prospecting. Snow was imminent and opportunities for any extensive program

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very limited. The claims were recorded on December 2, 1980.

Prior to heavy snow in December the prospectors confirmed the presence of one more scheelite zone along the side of the road south of the discovery site and in addition, located two more areas of scheelite-bearing float well below the new road.

GEOLOGY

GEOLOGICAL SETTING

The Thanksgiving claim group lies immediately east of the Columbia River in the Northern Selkirk Mountains, an area of complex stratigraphy and geologic structure. The complexity of this area has become more apparent as the results of modern geologic studies are compiled and published. A map showing the generally accepted structural elements of this part of the Omineca Crystalline Belt is shown in Figure 3. As presently understood the Columbia River flows along a major fault zone that appears to separate the extensive Shuswap Metamorphic Complex on the west from Kootenay Arc structural elements and the Purcell Anticlinorium on the east.

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- 10 -



In an effort to obtain a better understanding of . the structural evolution of the southern Canadian Cordillera a number of detailed geologic studies have been undertaken (Wheeler, 1970, p. 1) to clarify the relationships between the Shuswap Metamorphic Complex and the Selkirk Mountains. Gilman (1972) studied the Albert Canyon area, east of Revelstoke, and suggested that gneisses in part of the Clachnacudainn Salient (Figure 4) comprised a sheet like body emplaced between contrasting amphibolite metasedimentary rocks. Although the Clachnacudainn Salient (which includes the Thanksgiving property) has long been considered part of the Shuswap Metamorphic Complex, recent data (Read and Thompson, 1979) suggest that this tectonic element comprises an eastward dipping allochthon lying on the east side of the Shuswap Complex (see Figure 4). The Columbia River fault zone then becomes a major post metamorphic decollement which separates the Kootenay Arc and Clachnacudainn Salient from the stratigraphically dissimilar rocks of the Shuswap Metamorphic Complex. Thus the current state of knowledge about this part of the Northern Selkirk Mountains suggests that rock units east of the Columbia River at LaForme and Hathaway creeks can be considered as equivalents to Kootenay Arc units. The distribution of tungsten deposits along the extent to the Kootenay Arc continuing into the Revelstoke area can also be used to imply a continuity of elements and processes.

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- 12 -



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LOCAL GEOLOGY

Detailed geological studies of the rock units in the vicinity of the Thanksgiving property remain to be completed. Indications of the local geology gained by the writer's visit in mid-November confirm the presence of thinly banded quartzitic rocks similar to Hamill Group quartzite members of the Kootenay Arc. As indicated by Gilman (1972) and Read and Thompson (1979) cataclastic deformation of the units is very apparent. At Hathaway Creek evidence of this deformation is seen as foliated mafics parallel or sub parallel to assumed primary bedding features. Extensive limestone units were not seen along the new road in the vicinity of Hathaway Creek, but deformed buff limestone can be seen at the main tungsten showings along the creek and below the new road in a small unnamed creek.

Locally the structure of the quartzite and limestone units suggests undulating open folds in part complicated by small scale faulting. It is also obvious that the complexity of the stratigraphy and structure increases markedly north and south of the property where the rock cuts are more extensive and outcrops more abundant. One coarse grained feldspar porphyry dike exposed at several locations cuts across the local

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- 14 -



- 15 -

PLATE 3A Feldspar porphyry dike.

3



PLATE 3B Close-up Feldspar porphyry.

stratigraphy in an easterly direction. This was the only major intrusive recognized in the vicinity of Hathaway Creek during the writer's visits. A crude sketch map outlining the main elements at the Hathaway Creek - new road intersection is shown in Figure 5.

Several samples of rock and mineralization were examined under the microscope in thin section. Three rock slices were also stained with sodium cobaltinitrate to examine the possibility of K feldspar alteration. Apparently barren, but obviously altered quartzite above the Creek Zone mineralization has a grayish green mottled appearance in hand specimen. The rock has lost the light color and well banded appearance of quartzites seen along the road and instead is composed of a dense very fine interlocking aggregate of quartz, epidote, calcite, some feldspar and minor pyrite. A very fine grained, acicular mineral tentatively identified as sillimanite is found throughout the altered quartzites.

Readily identifiable limestone at the Creek Zone and in Hathaway Creek below the new highway are buff colored, fine grained and marked by cataclastic textures. Oxidation and fracturing in the limestone has obscured the nature and character of the limestone. Where sulfide and scheelite mineralization occur it is assumed for the present

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- 16 -



that the host rocks were primarily limestone or calcarenites.

- 18 -

It is very obvious that a detailed study of the Thanksgiving property is necessary before geological controls for the observed mineralization can be formulated. Questions that must be answered before the property can be efficiently explored include: how many limestone units are intercalated in the sequence, and what is their extent?, what is the geologic structure?, what is the nature and extent of intrusive units on the property and what is their relationship to mineralization; and of great importance is that in addition to the observed tungsten bearing zones, the massive sulfide float boulders may represent stratabound deposits localized within the same stratigraphic sequence.

MINERALIZATION

INTRODUCTION

Tungsten bearing tactite mineralization found by prospectors near Hathaway Creek in mid-October 1980 is the first known occurrence of this type of deposit in the Revelstoke area. Only two tungsten occurrences have been previously reported north of Revelstoke. One, the Ruger property, located on Downie Creek northeast of Revelstoke,

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is said to comprise magnetite and pyrite with very minor scheelite in quartzite (Assess. Rept. 6306, 1977). The second, the Rubina property, located on Highway 23, thirty miles north of Revelstoke, was said to be a primarily molybdenite bearing shear zone carrying very minor tungsten values (Assess. Rept. 539, 1962).

The only previously known tungsten deposit of any note in the general Revelstoke area was the Regal Silver (Snowflake) mine located northeast of Revelstoke near Albert Canyon (Stevenson, Bull. 10, B.C.D.M.). This was also the only known property to contain scheelite in the Revelstoke area for many years. The mineralization essentially consists of a number of sulfide bearing quartz veins localized within black to gray slates. Scheelite was found to occur mainly in the pyrite lenses in the quartz veins. Both the distribution of the pyrite lenses and the scheelite in the pyrite lenses was reported as so erratic that it was virtually impossible to predict grade (Bull. 10, p. 90). On a regional basis most of the known tungsten deposits in southeastern British Columbia as well as the only major producers are found along a zone extending from the Revelstoke area south through the Slocan and Salmo areas. These tungsten (and gold) bearing deposits of various types are conspicuously confined to the Kootenay Arc and along the southeastern zone of plutons.

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- 19 -



PLATE 4A General view - Creek Zone.



PLATE 4B Portion of trench - Creek Zone.

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With hindsight, the discovery of scheelite bearing tactite (skarn) north of Revelstoke in Kootenay Arc stratigraphic clements now seems a reasonable expectation.

Recent statistical studies (Sinclair et al, 1978) also suggest that the Omineca region has a particularly high potential for tungsten (and other elements) as indicated by commodity occurrence densities (Tables 1, 2). The relative density of tungsten bearing mineral occurrences is shown in Figure 6 as compared to the average for British Columbia.

To date, the geological and statistical evidence suggests that skarn type tungsten deposits hosted in the Omineca Belt in Kootenay Arc stratigraphic elements have a high potential for reasonable size and grade.

THE THANKSGIVING TUNGSTEN DEPOSIT

The presently known distribution of scheelite bearing skarn on the Thanksgiving property is shown in Figure 5. The discovery outcrop consists of highly oxidized, crudely banded quartzose material in which pyrite and pyrrhotite are the main sulfides and in which fine to medium grained scheelite is found as scattered grains in the crudely banded mineralization. A sample taken by the writer February 13, 1981 and submitted for extensive

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- 21 -

TABLE 1

Commodity	Insular	Coast	Intermontane	Omineca	Eastern	Cordilleran British Columbia
Molybdenum	.281	.520	.641	.412		.455
Copper	9.538	2.204	4.555	1.984	.894	3.401
Silver	.783	.549	.968	3.612	.119	1.248
Lead	.080	.210	.440	2.066	.261	.656
Zinc	.502	.166	.143	.494	.149	.235
Nickel	.040	.108	.041	.063		.050
Cobalt	.141	.029	.022	.025	.015	.030
Uranium		.015	.022	.070	.008	.026
Tungsten	.020	.065	.072	.171	.008	.076
Tin			.006	.013		.005
Antimony	.080	.101	.019	.013	****	.032
Gold (Lode)	3.795	2.052	1.267	2.573	.082	1.601
Mercury	.020	.108	.151	.006	****	.085
Arsenic	.080	.007	.003			.007
TOTALS	15.4	6.13	8.35	11.50	1.54	7.91

COMMODITY OCCURRENCE-DENSITIES FOR TECTONIC BELTS IN BRITISH COLUMBIA (NUMBER OF OCCURRENCES/1000 km²)

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TABLE 2

RELATIVE COMMODITY OCCURRENCE-DENSITIES FOR TECTONIC BELTS IN BRITISH COLUMBIA

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Condillonor

Commodity	Insular	Coast	Intermontane	Omineca ·	Eastern	British Columbia
Molybdenum	0.62	1.14	1.41	0.91	0	1
Copper	2.80	0.65	1.34	0.58	0.26	1
Silver	0.63	0.44	0.78	2.89	0.10	1
Lead	0.12	0.32	0.67	3.15	0.40	1
Zinc	2.14	0.71	0.61	2.11	0.64	1
Nickel	0.80	2.16	0.82	1.26	****	1
Cobalt	4.70	1.00	0.73	0.83	0.50	1
Uranium	0	0.58	0.85	2.69	0.30	1
Tungsten	0.26	0.86	0.95	2.25	0.11	1
Tin	0	0	1.20	2.60	0	1
Antimony	2.50	3.16	0.59	0.41	0	1
Gold (Lode)	2.37	1.28	0.79	1.61	0.05	1
Mercury	0.24	1.27	1.78	0.07	0	1
Arsenic	11.43	1.00	0.43	0	0	1

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FIGURE 6 Bar graphs showing relative density of mineral occurrences for the major tectonic belts. Relative density of 1.0 equals average. (after Sinclair et al, 1978).

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analysis showed the presence of greater than 2,000 parts per million tungsten (Appendix A). The results of the analysis on the sample from the Discovery Zone (TH - 1) are shown below:

Sample No	. Cu	Ръ	Zn	Мо	Ag	W	Au
	ppm	ppm	ppm	ppm	ppm	ppm	ррр
TH - 1	470	22	61	< 1	1.4	> 2000	85

In addition to the major tungsten component the analysis also shows the presence of significant copper and gold. These are important when considering a geochemical exploration program.

The discovery showing is very accessible and should be opened up in order to examine the host rocks and mineralization carefully and to sample primary material.

The main, and currently most extensively exposed mineralized showing is found along the small creek and is here called the "Creek Zone". The location of the Creek Zone with respect to the other scheelite occurrences and float locations is illustrated in Figure 5. A more detailed sketch of the Creek Zone with the location of the sample is shown in Figure 7. Samples TH-2, TH-3A, TH-3B, Th-4 and TH-5 were chip samples taken from portions of the exposed Creek Zone. These samples were taken from the exposed faces of the cuts using $2\frac{1}{2}$ and 8 pound

- 24 -

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Ņ W. Grove TH-5 TH-4 TH-2 FIGURE TH-38 Consultants TH-3A 1 2 25 1 stream Ltd SKETCH MAP (PLAN) CREEK ZONE WORKINGS Scale 1=10' 1981

hammers. Sampling was hampered by ice on the face and in fractures and by heavy falling snow. The analytical results on these samples are as follows:

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Sample No.	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ag ppm	W ppm	Au ppb
TH-2	96	15	37	< 1	0.4	>2000	110
TH-3A	225	14	68	1	0.2	135	5
TH-3B	106	8	45	< 1	0.2	1125	15
TH-4	40	9	42	3	0.2	360	95
TH-5	25	6	219	< 1	0,2	>2000	5

Inspection of the various exposed faces of the Creek Zone using an ultraviolet lamp (under a black plastic tarp) showed the presence of scheelite throughout the slightly to heavily oxidized portion of the skarn zone.

Thin sections of the mineralized skarn show the presence of very fine grained garnet, quartz, epidote, calcite, some feldspar, pyrite and fine to coarse grained scheelite. Together these minerals form a dense, compact rock with a greenish brown aspect. Quartz stringers are present irregularly in the skarn forming crude banding parallel to the nearby banding in the quartzites. In places, these layered zones have a vuggy appearance. Scheelite is found as disseminations in the massive skarn, forming irregular grains more than one centimeter across, and as coarse grains in bands in the

- 26 -

stringer zones. In one vuggy, quartz banded zone several almost perfect scheelite crystals more than one centimeter long were found. The skarn is also generally slightly magnetic. Very fine grained magnetite and pyrrhotite were identified in several of the dense skarn. Portions of the scheelite bearing skarn also appear to be comprised mainly of a brown garnet in which fine grained epidote, quartz, calcite and scheelite as well as magnetite are disseminated. These characteristics have important implications as regards the potential for geophysical exploration for the skarn.

Samples TH-2, TH-4, and TH-5 were taken from slightly to moderately oxidized portions of the mineralized massive skarn. The geochemical analysis of these samples indicates the presence of major amounts of tungsten and significant copper and zinc. The apparent variations in metal content can easily be attributed to the oxidation state of the samples, and to the conditions under which they were taken. Like TH-1 these samples contain anomalous gold values.

To provide some comparison between the chip samples and obvious highgrade, two samples of clean scheelite bearing (UV lamp) massive skarn from locality 5 were also submitted for analysis with results as follows:

- 27 -

Samp]	le No.			Cu	РЪ	Zn	Mo	Ag	W	Au
				ppm	ppm	ppm	ppm	ppm	ppm	ppb
High	Grade	-	TH	48	5	164	<1	0.2	>2000	25
High	Grade	-	TH-5	13	3	88	1	0.2	>2000	20

Again both samples show major tungsten (>2000 ppm) as well as anomalous copper, zinc and gold.

Sample TH-6 was taken with great difficulty from the skarn zone exposed below and west of the road (Site C, Figure 5). Examination with the ultra violet lamp indicated a single scheelite band about 25 centimeters wide parallel to the skarn banding. A crude sample taken from the flat 2 meter high face gave the following results:

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Sample	No.	Cu	РЪ	Zn	Мо	Ag	W	Au
		ppm	ppm	ppm	ppm	ppm	ppm	ppb
тн – 6		43	3	112	2	0.2	540	5

Because of the heavy snow only a small portion of the skarn zone in this area was examined and sampled. The analytical results again confirm the significant tungsten as well as anomalous zinc and gold.

Only one sample of scheelite bearing float from the westerly locality was submitted for analysis. The results shown below for TH - Float 1970 confirm major tungsten with anomalous zinc and gold:

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- 28 -

Sample No.	Cu	Pb	Zn	Mo	Ag	W	Au
	ppm	ppm	ppm	ppm	ppm	ppm	ppb
TH - Float 1970	4	4	197	2	0.6	>2000	175

- 29 -

One character sample taken from the Creek Zone (marked A) and one from skarn below the road (my sample 6) are shown below for comparison (see Appendix B):

Creek Zone, site A, - A-	4.65 % W
TH - 6. site CB -	7.25 % W

Another character sample (Appendix C) showed the presence of 14.9 % WQ₃.

The presence of a significant to major amount of tungsten in the form of the mineral scheelite has been confirmed in at least three zones by ultra violet lamp and by geochemical analysis. Scheelite was also indicated at site "D" (Figure 5) but was not sampled in February because of the heavy snow cover. Scheelite bearing skarn float has also been located by the prospectors at five different sites. Material from one of these sites (TH -Float 1970) consisted of heavily mineralized skarn and also contained anomalous zinc and gold.

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CONCLUSIONS

The mineralized skarn has been shown to occur over an area roughly 200 meters square with a known thickness in the Creek Zone of just under 3 meters. Preliminary structural analysis also suggests that more than one mineralized skarn zone is present. In addition to the major tungsten component, seven of the ten skarn samples showed highly anomalous gold, five anomalous zinc. and four anomalous copper. The anomalous copper correlates strongly with the oxidized skarn, whereas anomalous zinc and gold correlate strongly with the massive to slightly oxidized tungsten bearing skarn. Both oxidized and massive skarn contain magnetite, pyrite and (or) pyrrhotite. Thus it is expected that geochemical methods utilizing copper, zinc, tungsten and gold as pathfinders in conjunction with magnetic geophysical methods can be used with considerable assurance in the search for other hidden or buried tungsten bearing mineralization on the Thanksgiving property.

The chemistry of the massive sulfide float boulders found along the old road (Figure 5) has not been examined. It is considered here that because of the general geological environment the occurrence of stratabound massive sulfide mineralization is probable. Geochemical and geophysical methods suggested here to search for

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- 30 -

mineralized skarn can be utilized simultaneously in the search for hidden massive sulfide deposits.

The presence of significant tangsten bearing skarn immediately adjacent to a major highway within only 20 kilometers of Revelstoke must be considered a strong positive factor when considering the potential of the property. The relatively easy topography, thin overburden and the fact that the area has been logged are also all plus factors adding to the positive aspects of this property.

The current demand for tungsten and the relatively good, stable prices for the metal make exploration and development of reserves commercially attractive at this time. Additionally, the mineralization is protected by four large staked claims of which only a small fraction of the ground has yet been explored by simple surface prospecting. A comprehensive exploration and development program is proposed.

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RECOMMENDATIONS .

Current results based upon preliminary prospecting, geology and sampling of only a small part of the Thanksgiving property suggest the possibility of outlining a commercial tangsten deposit. In order to establish the economic potential of this new discovery a comprehensive exploration and development program is recommended. This should include geological, geochemical, and geophysical surveys of the entire property accompanied by extensive prospecting as well as trenching and sampling. In order to establish continuity, to determine geological controls and to quantify metal grades, diamond core drilling is recommended as a major component of the program.

The 1981 work program proposed for the Thanksgiving property has been presented in three active phases, the results of the first determining the final extent of the second, and the second the third.

PHASE I

 The preparation of a detailed topographic map of the Thanksgiving property is a necessity and should be contracted as soon as possible.

At present the lower part of Thanksgiving No. 2 and No. 3 claims is included in detailed topographic

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- 32 -

maps prepared for B.C. Hydro by McElhanney Surveying & Engineering Ltd. The prepared map scale at 1:2,000 with 2 meter contours is ideal and should be continued over all four claims.

A query to a McElhanney engineer in Vancouver indicated that the preparation of a map at the suggested scale using their control would take from six to eight weeks.

56 units @ 61.78 acres/unit

т.**б**.

@ \$3.50/acre \$12109.00
extra paper copies 400.00
(rounded) \$:

\$12,500

2. A control base line and grid is required to provide exploration control. This must be completed at the earliest and should be contracted.

1 E-W base line3 km25 N-S cross lines @ 50 m spacing 75km20 N-S cross lines @ 100m spacing 60kmcut lines required138 km138 km @ \$150/km including flagging,pickets, marking, etc.

\$21,000

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	- 34 -	
3.A. Geo	logical mapping of the claim	groups
inc	luding detailed stratigraphy,	structural
analy	sis, petrography, core loggin,	g and overall
super	vision.	
1 geo	logist, 3mos. @ \$250/day:	\$22,500
1 ass	istant, 3 mos. @ \$75/day:	
, ; (•	to also act as expeditor)	6,750
Room	and Board, 2 men @ \$60/man/da;	y
f	or 3 months:	10,800
1 veh:	icle @ \$800/month including	
r	epairs:	2,400
Misce	llaneous equipment and	
S	upplies:	2,500
Thin	section preparation, petrogra	phy,
r	eport preparation, drafting:	3,500
		\$48,450
B. Pro	specting, trenching, sampling	•

2 men, 3 mos @\$100/man/day: \$18,000 Room and board, 2 men, 3 mos.

@ \$60/man/day: 10,800
1 vehicle 3 mos. @ \$800/mo. 2,400
Equipment rentals (plugger, fuel) 2,000
Miscellaneous supplies (fuse,powder) 2,500
Assaying, 200 rock samples @ \$16/ 3,200

\$38,900

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		- 35 -	
3.C.	Geo	ochemical soil sampling.	
	a.	Orientation survey:	
		6 sample sites, 25 samples @ \$75/sample including spectro- graphic analysis report: \$1,875	
	b.	Soil samples @ 50 m spacing, lower claim area, 300 samples @ \$12.50/sample: 3,750	
	с.	Soil samples @ 100 m spacing, outer claim area, 400 samples @ \$12.50/sample: 5,000	
	d.	Compilation, report prep2,500	
			\$13,125
h 0-	o-b-		

4. Geophysical surveys.

12.51

a.	Magnetometer survey,						
	25 days @ \$300/day:	7,500					
ъ.	E.M. survey,						
	20 days @ \$400/day:	8,000					

18,500

5. Diamond core drilling Creek Zone area.

100 m zone, 50 m spacing, 9 core holes (AQ) 100 m long @ \$90/meter (including mobilization, demobilization, fully loaded cost): 81,000 core sample analysis: 2,500

\$83,500

SUB TOTAL PHASE I

\$235,975.00

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PHASE II

Results of the geological survey of the mineralized area and the study of the Phase I core drilling will determine the length and angle of core holes drilled in phase II to extend the grid drilled to a 150 meter zone.

150 m zone, to give 100 m spacing, 8 core holes (AQ) 150 m long -1200 m @ \$90/m (fully loaded cost): \$108,000 Core sample analysis: _____2,500 SUB TOTAL PHASE II \$1

\$110,500.00

PHASE III

Results of Phase II drilling coupled with structural information will determine the length and angle of individual holes in Phase III required to complete drilling of a 200 meter square grid in the vicinity of the known mineralization.

200 m expanded grid core drilling,8 core holes, 1600 m @ \$90/m:\$144,000Core sample analysis:2,500SUB TOTAL PHASE III

\$146,500.00

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- 36 -

Sub Total Phases I + II + III \$492,975 Engineering <u>10,000</u> \$502,975 PLUS Contingency @ 10% <u>50,000</u> PROPOSED 1981 BUDGET

OTHER RECOMMENDATIONS

- 1. Negotiations with contractors required should proceed at the earliest.
- 2. The operator should apply for and complete the various government forms including Work Permit as soon as feasible.
- 3. The Inspector of Mines (B.C.) responsible for the area should be contacted to provide direction and to help avoid conflict with other government agencies.
- 4. A company employee engaged to use explosives on the property must have a Blaster's Certificate.

Respectfully Submitted;

\$552,975.00

February 28,

E. W. Grova Consultants Ltd.

- 37 -

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Assessment Rept. No. 539, 1962.

Assessment Rept. No. 6306, 1977.

- 38 -

E. W. Grove Consultants Ltd.

CERTIFICATE

I, Edward Willis Grove, of the Municipality of Central Saanich, do hereby certify that:

- 1. I am a consulting geologist with an office at 6751 Barbara Drive, Victoria, British Columbia.
- 2. I am a graduate of the University of British Columbia (1955) with a Master's degree, Honours Geology (M.Sc. Hon. Geol.) and a graduate of McGill University (1973) with a doctorate in Geology (Ph.D.).
- 3. I have practiced my profession continuously since graduation while being employed by such companies as The Consolidated Mining & Smelting Co. of Canada Ltd., British Yukon Exploration Ltd., Quebec Dept. of Natural Resources, and British Columbia Ministry of Energy, Mines and Petroleum Resources. I have been in private practice since January, 1981.
- 4. I have no interest, either direct or indirect, in Andaurex Resources Inc. or Cajac Exploration Ltd. or any of its properties, nor do I expect to acquire any such interest.
- 5. I am a member in good standing of the Association of Professional Engineers of the Province of British Columbia.

February 28, 1981 Victoria, B.C.

Edward W

E. W. Grove Consultants Ltd.

- 39 -

APPENDIX A

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APPENDIX C

- E. W. Grove Consultants Ltd.-

X-RAY ASSAY LABORATORIES LIMITED

1885 LESLIE STREET, DON MILLS, ONTARIO M3B 3J4

PHONE 416-445-5755 TELEX 06-986947

CERTIFICATE OF ANALYSIS

TO: PAUL HAMMOND, SUITE 200, 931 YONGE ST., CUSTCMER ND. 836 : TORONTO, ONTARIO. M4W 2H7

DATE SUBMITTED 19-DEC-80

REPORT 10235

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REF. FILE 6138-41

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\$102	%	XRF	0.010
P205	%	XRF	0.010
K20	%	XRF	0.010
CAC	%	XRF	2.010
T102	%	XRF	0.010
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X-RAY ASSAY LARCRATORIES, LIMITED CERTIFIED BY

DATE 21-JAN-31

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