

56-461-15036

25/87

ASSESSMENT REPORT  
GEOLOGICAL AND GEOCHEMICAL WORK ON THE A-1 CLAIM

FORT STEELE MINING DIVISION  
CRANBROOK AREA, BRITISH COLUMBIA  
NTS 82G/12E

LOCATION: 12 KM NE OF FORT STEELE, EAST SIDE WILD HORSE RIVER  
NEAR WALLINGER CREEK

LATITUDE 49°~~00'00"~~ 42.8'

LONGITUDE ~~125°20'~~ 115° 32'

SOUTHEASTERN BRITISH COLUMBIA

Work between June 30 and July 12, 1985

MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES
Rec'd
AUG 27 1986
SUBJECT _____
FILE _____
VANCOUVER, B.C.

On Behalf Of

FILMED

Owner/Operator: JUSTICE MINING CORP.  
VANCOUVER, B.C.

REPORT BY  
DR. W. D. GROVES, P.Eng.  
ARCHAEAN RESOURCES CORP.  
VANCOUVER, B. C.

GEOLOGICAL BRANCH  
ASSESSMENT REPORT  
DATED: 15 AUGUST 1986

15,036

WDG

<b>TABLE OF CONTENTS</b>	<b>PAGE</b>
<b>ABSTRACT</b> .....	1
<b>INTRODUCTION</b> .....	2
A. Property -Location, Access and Physiography.....	2
B. Status of Property.....	3
C. History - Sources for the Report.....	3
D. References.....	6
E. Summary of Work Done .....	6
<b>TECHNICAL DATA AND INTERPRETATION</b> .....	9
<b>A. GEOLOGY</b> .....	9
1. Regional Geology.....	9
2. Property Geology.....	11
<b>B. GEOCHEMISTRY</b> .....	14
1. Field Procedure and Laboratory Analysis.....	14
2. (a) Soil Geochemistry, follow-up on 1983 Anomalous Sub-Areas A, B, C, D.....	15
(b) Stream Sediment Survey, Upper Wendy's Creek.....	17
<b>CONCLUSIONS</b> .....	18

#### **APPENDICES**

APPENDIX I	Work Cost Statement
APPENDIX II	Certificate, W.D. Groves, Ph.D., P.Eng.
APPENDIX III	Assay Certificates ACME 85-1301, 85-1205, 85-1380, 85-1582, 85-1205 (Dardanelle Assays)

#### **ILLUSTRATIONS**

Figure 1.	Location Map
Figure 2.	Claims Map, NTS M 82G/12E
Figure 3.	A-1 Mineral Claim, 1985 Gold Soil Geochem Anomaly Points & Sample Numbers. Scale: 1:5,000
Figure 4.	A-1 Mineral Claim, 1985 Gold Silver & Base Metals Soil Geochem Anomaly Points. Scale 1:5,000

## TABLES

Table 1	Soil Geochem Values, Subarea 'A' 1985 Fill-in Grid
Table 2	Soil Geochem Values, Subarea 'B' 1985 Fill-in Grid
Table 3	Soil Geochem Values, Subarea 'C' 1985 Fill-in Grid
Table 4	Soil Geochem Values, Subarea 'D' 1985 Fill-in Grid
Table 5	Soil Geochem Values, 1985 Sample Rings
	Ring 1 - A subarea (Cu, Pb, Zn elevated)
	Ring 2 - A subarea (Cu, Pb, Zn, As elevated)
	Ring 3 - A subarea (Cu, Pb, Zn elevated)
	Ring 4 - A subarea (Ag, Pb, Zn elevated)
	Ring 5 - C subarea (Au elevated)
	Ring 6 - C subarea (As, Cu elevated)
	Ring 7 - B subarea (Cu, Pb, Zn elevated)
	Ring 8 - 1983 Au anomaly 200 m SE of SE corner of A subarea (At 6 + 50N, 9 + 00E) (Au elevated, Au anomaly confirmed)
	Ring 9 - Same Au anomaly as 8, 100 m to ESE at 6 + 00N, 10 + 00E (Au elevated)
	Ring 10 - Location unknown, gold not anomalous
Table 6	Geochem Values, 1985 Wendy's Creek Traverse
	a. Silt samples
	b. Soil geochem values alongside silt points Z1-Z7.
Table 7	Number of samples, estimated anomaly levels (182 total samples)

## ABSTRACT

The author spent a total of 5 days of field work in the period June 29-July 12/85 on the A-1 claim, supervising an assessment work program (total 21.5 on-site technical man days, excluding cook), consisting mainly of follow-up grid soil sampling of areas of interest defined in Sookachoff's 1983 report: at least one more or less linear 9-point east-west trending gold soil anomaly was located on the "B" sub-area on the A-1 claim which bears careful follow-up. Two of the four marginally anomalous soil gold geochem points on the "D" sub-area may indicate an extension of the trace of the Dardanelles gold-quartz vein on the neighboring Crown Grant onto the A-1 claim. Area 'E', between Subareas B & D on which a gold anomaly was found in 1983 was checked by two 5-sample rings (Rings 8 and 9, which confirmed the anomaly). The three gold anomalous subareas D, E and B lie around the upper Wendy's Creek bowl on elevations suggesting a possible flat vein source, eroded by the creek valley. The D soil gold anomaly suggests this could conceivably be the eastward 'contour' exterior of the flat lying Dardanelles vein structure.

The value of 1985 field work plus assays is \$7,880.00: total expenditure including report: \$9,380.00.

Suggested follow up includes tight gridding anomalous areas of B, E, and D subareas followed by trenching and trench sampling.

While the follow-up grid base metal-silver values were generally elevated within the four follow-up grid areas, no particular pattern of gold association with base metal values is indicated.

Variable base metal solubility and mass wasting downslope movement rates, and the existence of ankeritic type silver-base metal mineralization and silver-base metal leakage from sour shales, all help to mask the base metal-gold association noted in the mineralogy of the Dardanelles gold-quartz-sulphide vein just south of the property.

## INTRODUCTION

### A. Property - Location, Access, Physiography

The A-1 claim occupies the lower portion of Wendy's Creek Valley, a generally northwesterly creek flowing into the steep notch of the Wild Horse River Valley bottom.

The claim area is accessed by 3.8 km of fairly steep but well constructed road off the main forestry road up the east side of Wild Horse River, meeting the latter just east of the main road's crossing of Wendy's Creek. Grades are somewhat steep for a 2 WD, but a 4 WD or truck would have no problem. The road was upgraded for a haul road for the 1975 bulk sampling of the Dardanelle Crown Grants on the southern edge of the claim property. From the Wendy's Creek junction it is approximately another 15 km southward along the main forestry roads to Fort Steele and Highway 95.

The physiography of the area encompasses the east side of the Wild Horse river valley (river elevation about 3,800' [1,235 m] locally), plus a major side creek (Wendy's Creek) with a more gentle terrace at the 6,00 foot (1,850 m) level on the Dardanelles Group Crown Grants, then rising to the fluted upper ice sculptured spires and knife edge ridges of Vertical Mountain (top elevation 7,520' [2,313 m]).

The Wild Horse runs over gravel and bedrock. It has downcut through an earlier 100 m of older Tertiary river terrace. Parts of the terrace show evidence of having been monitored for gold values. The main forestry road contours the top of this terrace. Main valley side profile rises at about 25° average slope, which has been 'bowled' by the major side creeks. Fairly deep till and slope wash covers the lower slopes. At about the 5,500' (1,690 m) elevation, bedrock exposures are encountered on the hillsides. At the Crown Grant elevation the increasingly steep slope "breaks over" onto another gently sloping terrace at about 2,000 meters,

probably another old glacial feature. On it, fine sandy till coverage exists. The uppermost slopes of Vertical Mountain exhibit valley-glacier fluted cliffs, some almost vertical.

Second growth fir-spruce-balsam timber and overgrown logging slash cover the slopes. On the upper terrace, small jackpine grows on the drier and sandier areas. The area abounds in game - large, well used game trails of elk and deer contour the hillside. Apart from the certain areas of overgrown slash, the country is easy to traverse.

The weather during the June-July, 1985 visit to the area was extremely hot and dry. Several forest fires broke out near the claim area during the field work period, occasioning a complete woods closure at one point.

**B. Status of Property**

A-1 Claim 3N X 6E 18 Units SE LCP#88906  
Rec.# 1786(5) Record date is May 27, 1983

The claim is, to the author's knowledge, in good standing and optioned to Justice Mining Corporation of Vancouver, B.C.

**C. History, Sources for Report**

The mining history of the property area began with the production of gold from the placers of the Wild Horse River tributaries before the turn of the century. By 1893 it was reported that Wild Horse River had yielded over six million dollars in placer gold, but little prospecting for gold in hard rock has been done up to that date.

In 1894 new discoveries of gold in quartz were made on Wild Horse River. In 1896 the discovery of several mineral locations (mainly gold-

bearing quartz veins) on Wild Horse River were reported; on one of which (the Dardenelles) mining was underway. In the fall of 1896, 30 tons of ore were hauled down a two and a half km trail from the workings "2,200 feet" (730 meters) above the creek to the arrastra at the creek which was built in 1896 to process the Dardenelle ore.

The Dardenelle was worked periodically thereafter to approximately 1919. In a 1925 report, the workings consisted of an upper incline shaft sunk for a distance of "55 feet" with a lower incline shaft sunk on a parallel mineralized quartz vein for a distance of "217 feet".

In 1975 three shipments of ore were made by Magnum Enterprises of Cranbrook to the Trail smelter. The shipments were 48.3 tons, 22.2 tons and 24.8 tons for a total of 95.3 dry tons. Overall average grade reported by the smelter was .463 oz/ton Au and over an ounce of silver, plus minor copper, zinc and lead.

During the latter part of the 1800's and the early 1900's, and at the time the Dardenelles was in the stages of initial exploration, other properties in the immediate area were also being worked. These properties included the Kootenay King on the north side of Wild Horse River on Lakit Mountain and within five km northwest of the Dardenelles, where three tunnels explore a mineralized zone (ankeritic low grade silver-lead-zinc replacements).

On the Tit for Tat group of three Reverted Crown Grants two km south of the Dardanelles mineral claim, numerous small trenches and inclined shafts explore a mineralized quartz zone in association with quartzites and interbedded thin talcose schists. A small tonnage of vein material was developed.

Other groups of Reverted Crown Grants on which exploration work was performed are seven km north of the "A" mineral claim, high on the east



valley wall.

There is no known previous exploration work on the A-1 claim prior to the 1983 exploration soil geochemistry program carried out by Justice Mining Corporation.

The original 1896 mining attempt on the Dardanelles vein system (a flat-lying thrust fault-hosted quartz vein system crossing the Dardanelles Crown Grant and tracing NE by E onto the SE corner of the claim) was frustrated when, after dragging the 30 tons of the vein down to an arrastra near the Wild Horse River, gold values in the ore failed to amalgamate. The Minister of Mines geologist (in his 1898 report) evidently deduced from this that there was no free gold in the Dardanelles quartz ore, contrary to the attestations of the miners. However, there certainly was tetrahedrite (grey copper): copper-silver sulphantimonide in the ore, which in any appreciable quantity fouls mercury with antimony. Thus deprived of a cashflow, the 1896 operation ceased. On the nearby Tit-for-Tat Crown Grant claim, a rather more entrepreneurial approach was tried: \$600,000 was reportedly raised, whereupon mining ceased. A long period of relative quiescence followed on the claims.

High gold-silver prices in the 1970's and early 1980's restimulated interest in the area.

Sources for the report include recent reports by L. Sookachoff, P.Eng., 1983, Kregosky, 1986, Ministry of Mines reports for 1898, 1925 and intervening years, 1975 Trail Smelter sheet data for Magnum Enterprises; 1975 bulk sampling, and access to government regional geological mapping and reports on the area such as Rice, G.S.C., 1937. Conversations with the Cominco Trail ore buyer's office regarding their quartz flux requirements, and with Mr. Arthur Fisher, P.Geol., regarding a possible development strategy for the property, were also most helpful.



**D. References**

1. Geological Survey of Canada, Memoir 207, Cranbrook Map Area, British Columbia, by H.M. Rice, No. 2435, 1937. (Regional Map, Figure 3)
2. "Data Relating to the Tit-for-Tat, Lenz Lode and Celt A claims, Fort Steele Mining Division, British Columbia, Albury Resources Ltd., 1/86, by R. Kregosky (Fieldwork, 1982).
3. Cominco Smelter Sheets (3 sheets) 1975, Dardanelles 95 ton bulk sample, for Magnum Enterprises Ltd. (Justice Mining files).
4. (a) B.C. Minister of Mines Reports: 1898, p. 1026, Tit-for-Tat, Dardanelles claims.  
  
(b) IBID, 1925, p. A229, Dardanelles Group.
5. Assessment Report on Geophysical and Geochemical Surveys on the "A" Mineral Claim, Ft. Steele, Wallinger Creek, for Justice Mining Corporation, by L. Sookachoff, P.Eng. - Work from July 12 to December 19, 1983. Report dated December 19, 1983.
6. Report on Dardanelles, Motherlode and Tit-for-Tat Crown Granted Claims, and surrounding location ground, A1, Ramses and C1 claims, Fort Steele M.D., Cranbrook area, B.C., NTS 82G/12E, by Dr. W.D. Groves, P.Eng., April 25, 1986.

**E. Summary of Work Done**

On June 29 and July 1, and July 10-12 inclusive, a total of 5 days were spent by the author supervising a fill-in grid soil sampling of the area of interest on the A-1 claim north, adjacent to the Dardanelles Crown

Grants. Sampling crew were in the area for the whole period, June 29-July 12, but a several day interruption followed a forest fire closure in the area, forcing evacuation of the base camp at the crossing of Wendy's Creek with the main forestry road up the east side of Wild Horse River. The latter work was done from a camp at the public campground at Fort Steele, occasioning considerable extra travelling.

Sookochoff's 1983 exploration soil geochem gridding of the 3N x 6E (18 unit) A-1 claim at 100 m spaced N-S lines, with 50 m interval along the lines, had outlined 4 sub-areas showing precious metal-base, metal anomalous values which he designated on the map. (Figure 3) The 1985 geochem soil sampling program consisted of fill-in grid work (100 m N-S lines spaced between the Sookochoff ones (again 50 m sample spacing) to increase sample density in the 4 areas of interest. A total of 5.75 line kilometers of this grid-related fill-in sampling was done (115 soil samples). In addition, where single-point gold soil anomalies were shown on the Sookochoff 1983 map, a total of 10 five-point 10 m diameter sampling rings were made around the points (total of 50 more soil samples). Finally, 10 stream sediment samples and 7 bank soil geochem samples from Wendy's Creek above the access road were taken at approximately 30 meter intervals. Total of all samples, 182.

Tables 1-7 summarize the soil geochem values obtained in this work. Table 8 defines elevated (single underline) and anomalous (double underline) levels selected in the tables. Anomalous gold values are plotted on Figure 3. Figure 4 also plots anomalous silver-base metal values (Ag, Cu, Pb, Zn, As). Silver shows a weak correspondence with gold; base metals generally do not.

A half day of geological traversing by the author and crew members was also carried out.

**Personnel man days:**

W.D. Groves	5	(Geologist)
Ken Gourley	8	(Prospector)
Kelly Gourley	8 1/2	(Sampling Assistant)
Joe Chaplin	10	(Cook, Camp Helper)

Technical man days and operation costs are summarized in Appendix I. (Work Cost Statement):

Total of field work, sample assays and transportation was \$ 7,850. Together with the cost of this report (\$1,500), total work program cost applied from the 1985 program to the A-1 claim is \$ 9,380. In the Statement of Exploration and Development, May 26, 1986, a total work cost of \$17,1962 was claimed. Actually, part of this total (\$17,962-9,380 = \$8,582) was applied to other of the company's properties elsewhere in B.C., so is not entered as work on the A-1 claim. The net work cost claim is thus \$ 9,380 for the A-1 claim in 1985. Also, the standby down time caused by the forest fire woods closure is not claimed as Assessment Work.

The author also spent a day traversing the Dardanelles-Motherlode Crown Grant group on June 30, 1985 accompanied by Mr. Kelly Gourley, during which time the area of the two old incline adits, the cabin, small prospects on the three smaller veins just downslope from the main workings, 1975 stripping and bulk sampling operations were noted. Character samples were taken by the author, of Dardanelles quartz vein muck from the main incline by the cabin, of the wallrock, of the ankerite dyke in the hanging wall, and of quartz from the more easterly incline. Access to the Crown Grants was via the bulldozed road following the old trail shown on the 1:50,000 topographical map switchbacking up from the junction of Wendy's Creek and the main forestry road up the east side of the Wild Horse, beyond where shown on that map the road first angles westward up across the upper bowl of Wendy's Creek, then switch backs four times up the last slope below the

cabin to the old workings. Considerable exposure of the lower Creston Formation is afforded by rock cuts at switchback corners.

The Dardanelles traverse, while not claimed as assessment work for the A-1 claim, is mentioned as contributing to the author's perspective in the area, particularly vis-a-vis the geology and mineralogy of the local thrust fault-hosted vein occurrences.

## **TECHNICAL DATA AND INTERPRETATION**

### **A. GEOLOGY**

#### **1. Regional Geology**

Regional geology is treated by Rice (Reference 1). The following summarizes certain features of his report relevant to the general claim area.

The claim area is underlain by folded and faulted units of the Proterozoic Lower Purcell Series. The series totals some 37,000 feet (11,300 m) in thickness. The 3 middle units, Aldridge, Creston, and Kitchener, occur in the Shepherd's Gulch-Wendy's Creek area of the Wild Horse River Valley; the Aldridge (lowermost of these), mostly rusty weathering dark argillites; the Creston, grey-green phyllites, trending upward into white, reddish, green and purple thin-bedded quartzites, and the Kitchener, orthoquartzites to well bedded dolomites. The subunits are 1600-3350 meters thick each, in transitional conformal sequence. Of known local gold-bearing structures, the Dardanelles Fault vein is hosted by the Lower Creston, just above the predominantly phyllite-predominantly quartzite transition. Rice identifies the Dardanelles Fault as a thrust fault. Bed turning in the workings area suggests a SW overthrust.

The Tit-for-Tat vein structure cuts the Creston somewhat higher in the section, where green-purple-red and white quartzite beds predominate with only minor phyllite interbeds. Regional structural features in the area include a northward-striking west-overtained anticlinorium on the mountainous west side of the Wild Horse River. Up the river itself, a major NE to N20E/steep W fault with 5 feathers parallels the west side of the river. The fault system is west side-up, with a very large vertical displacement (west side-up an estimated 7,000 meters), which has been excavated by the Wild Horse. On the east side of the valley, traversed by the author, Aldridge rusty weathering, dark dense argillites are found near river elevation (1200-1400 m). The transition green-grey fissile banded Lower Creston phyllites then occur. At about the (2000 m) elevation, the well bedded white and colored quartzites of the mid-Creston are encountered.

Bedding attitudes strike generally northerly (N10°W to N30°E) with gentle to 45° westerly bed dips up to the elevation of the Dardanelles workings. Exposure along the Wild Horse, Wendy's Creek, and switchback cuts on the access road to the workings, provide the data base. Evidently, the route up the road to the Dardanelles workings through the A-1 claim trends up-section. Despite the local westward dips steeper than the slope angle, the general attitude of the section must be relatively flat in the area.

Another easterly to north-easterly striking steeply dipping major fault occurs in the Mause Creek area, 7 km south of the subject area, with 3300 meter plus N-side down movement, as mapped by Rice.

Rice also mentions the section in the general subject area is cut by numerous unmapped small displacement block faults "stepping" the section. These are of great importance in contour-tracking the thrust fault locus. Its trace can 'step' across these faults and require re-location by prospecting or soil geochem.

Rice also notes that both major and minor thrust faults exist in the section. He postulates an initial Proterozoic (Windermere) age of open northerly regional folding. This was followed in Jurassic-Tertiary time by compression, causing northerly-trending folding, becoming west-overturning, with strikes locally turned by previous structures. During the same period, thrust faulting occurred, followed by major and minor tension block, and normal faulting. The latest episodes of faulting were in Laramide time (time of the formation of the Rockies overthrusting). During this period, intrusion of stocks into major faults and the entry of magmatic solutions (ankerite dykes, quartz veins, etc.) into normal and thrust fault loci occurred.

## 2. Property Geology

The rather flat-lying Dardanelles thrust fault and gold quartz veins is believed to contour along the headwall of the south side of Wendy's Creek, off the Dardanelles Crown Grant and into the southeast portion of the A-1 claim. In order to study it and be able to identify its geochem signature (in sub-area D), an examination of the vein in the Dardanelles' workings was made on June 30, 1985 by the author on a traverse on foot up the access road angling southward from the road crossing of upper Wendy's Creek, up the switchback cuts in the Lower Creston phyllites crossing the SE portion of the A-1 claim, observation of the excavated mouth of the main adit, of another adit 60 m east-contour, the 1975 stripping area, etc., on the Dardanelles group in the area of the old cabin.

The lower portion of this access road cuts the top of the Aldridge rusty-weathering dense argillites.

The four switchbacks between 1805 m and 1915 m on the south edge of the A-1 claim just below the cabin, cut banded Lower Creston phyllites.



The bed attitude in the Lower Creston was locally N55W/55SW (Switchback No. 1) with a N75E/70S cross-cleavage, and a shallow one: N10°W/45°W and EW/vert cleavage at SW.2: northerly/westerly beds and a EW/70S cross cleavage and 1.3 meter ankerite dyke at SW.3, and grey-green banded phyllite at SW4 at similar bed and cleavage attitudes. Cabin elevation by same (uncorrected) altimeter, was at 1930 m, (uncorrected); main adit at 1905 m. The weather was hot and dry. Altimeter diurnal variation was not accounted for.

At the mouth of the main drift near the cabin (72 m long), a recent blast-and-loader open cut through the vein of 10 m x 6 m from which the removal of at least 80 tons of vein material could be computed, was noted. This excavation could thus have accounted for the bulk of the 1975, 95 ton bulk sample, whose overall average was .463 oz/ton gold.

Above the 1 m Dardanelles quartz vein, showing strongly in the excavated tunnel mouth area, strong bed turning and a small rubble gouge on the upper side of the vein indicated a south-overthrust on the fault. About 2.5 m up into the hanging wall, there is a .6 m 'listvenite' (pale greenish-tan coloured carbonatized syenite) dyke, subparallel to the vein. The dyke 'hooks' from fault/vein attitude irregularly into a flat cleavage dipping 35°W. The local bed attitude is N15°E/56°W. The vein consists of white, somewhat flaky quartz, looks unsheared, with minor base metal sulphides. Three character samples PIT1-1 (QTZ), PIT1-2 (SLATE), PIT1-3 (ANK) were taken of the three rock types at the main adit mouth. The vein attitude is locally N70E/25°S. The incline goes down the vein dip southward at approximately -30°S.

On the quartz pile beside the vein, samples had a canary-yellow ( $Sb_2O_3$ ) color on boxwork, greenish copper carbonate colors, and recognizable galena, tetrahedrite and pyrite in the quartz. The material exhibits the same mineralization type as the small vein quartz stockpile at the junction of the Wendy's Creek road and the main road. Below these

workings, three small 10 cm veins on a 3 m spacing parallel to the main structure some 50-75 m downslope, have been prospect-pitted.

Sixty (60) m along "contour" to the westward of the main adit, another tunnel enters the vein on a S30E-25° heading. Here the vein exhibits a similar composition and attitude as in the main adit. The specimen pile in front of the second adit contained considerable galena and other sulphides. Sample "HG-MUTHER" was taken of this material as a character sample. This was at 1940 meter elevation. Nearby, an area approximately 20 m x 20 m of locally flattened section of the vein, has been bulldozer-stripped just to the west of this drift. Here the vein is up to 1.5 m thick and looks of similar type to that of the adit mouths.

<b>Pit 1</b>	<b>Oz/T</b>	<b>Oz/T</b>	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>
<b>Main Vein</b>	<b>Au</b>	<b>Ag</b>	<b>Cu</b>	<b>Pb</b>	<b>Zn</b>	<b>As</b>
Quartz Vein	.131	.182	.002	.23	.0008	.0006
'Slate'	Tr	Tr	Tr	Tr	Tr	Tr
Ankerite Dyke	Tr	Tr	Tr	Tr	Tr	Tr

#### **Pit 2**

Quartz Vein	.186	5.07	.7	3.3	.10	.158
-------------	------	------	----	-----	-----	------

See Fig. 4 for sample locations.

Interestingly, vein assays, Pit 1 (Main Vein) at .131 oz/ton Au or .182 oz/ton Ag, and Pit 2 (quartz) at .186 oz/ton Au and 5.07 oz/ton Ag, are both below the bulk assay grades for gold. For rock geochemical purposes, note that the gold content of wallrock and ankerite sill close to the quartz vein is negligible from a quantitative viewpoint. Note the lead(silver)-gold association in the vein material.

WDG

Upper Wendy's Creek, which flows about NW, may follow the locus of a small step-fault in the section, so that attempts to trace the Dardanelles thrust structure northeastward across upper Wendy's Creek may require relocation of the vein (if displacement is not too large) by soil geochemistry in the headwall area. Ten stream sediment samples taken in Wendy's Creek above the road crossing failed to give an appreciable gold signal, but large rounded white quartzite boulders, characteristic of beds in the Creston or Lower Kitchener, suggest a possible N side downstep fault across the Wendy's Creek headwall. The nine-point soil gold geochem anomaly on the N side of lower Wendy's Creek, on the A-1 claim's "B" sub-area, may thus be of more than passing interest in this respect. How much use stratigraphic correlation proves to be in tracing the extensions of the thrust horizons in the Creston depends on how well section markers can be defined. Two of the four other marginally anomalous points on the "D" sub-area, on the south side of Wendy's Creek on the approximate contour projection of the Dardanelles vein are also viewed with interest. (Figure 3.) The three somewhat anomalous areas D, E (between D and B) and B suggest a source contouring around the Wendy's Creek bowl; possibly the sought after Dardanelles vein extension. More detailed sampling and stripping is required to follow up this hypothesis.

## B. GEOCHEMISTRY

### 1. Field procedure and Laboratory Analysis

Soil samples were taken by digging to the B horizon with a geology pick. Soils were collected in a standard kraft bag and allowed to dry. Acme Analytical Laboratories of 852 E. Hastings St. carried out all of the test work. Sample preparation consisted of drying to 60 degrees C followed by sieving to -80 mesh.

The six-element Geochemical I.C.P. (Inductively coupled plasma) Analysis on the sieved soil fines for Cu, Pb, Zn, Ag, As

(reported in ppm) and gold (reported in ppb) was carried out as follows: (File 85-1301, 85-1380, 85-1582)

A 500 gram sample is digested with HCl 3-1-2 HCL-HNO<sub>3</sub>-H<sub>2</sub>O at 95 degrees C for one hour and is diluted to 10 ml with water. This leach is partial for Mn, Fe, Ca, P, Cr, Mg, Ti, B, Al, Na, K, W, Si, Zr, Ce, Sn, Y Nb, and Ta. Au detection limit by ICP is 3 ppm - Sample Type: P1-2 soils -80 mesh P3-rocks. Au analysis by AA from 10 gram sample.

For File 85-1205 (Geochemical assay for gold in ppb), after the same drying and sieving preparation, a 10 gram sample is ignited, hot aqua regia leached, extracted in MIBk (Methyl-isobutyl-ketone), and the MIBK solution analyzed by atomic absorption spectroscopy for gold in ppb.

2. (a) **Soil Geochemistry: follow-up on 1983 anomalous sub-areas A, B, C, D, E**

In the 1983 report on the A-1 claim by Sookachoff, results of a 100 m spaced (E-W spacing) by 50 m sampling (N-S interval along grid lines), grid soil geochem study identified various soil metal anomalies: 1 point gold anomalies, small sharp lead anomalies, and four larger, more diffuse anomalous areas of more soluble elements, Ag, Zn, As, Cu. Areas of interest were designated by Sookachoff as sub-areas A, B, C, D on the 1:5000 grid and anomaly map. (See Fig. 3) As per Sookachoff's 1983 report recommendations, fill-in lines, mostly 100 m E-W spacing, some at 50 m, on 50 m N-S spacing, were grid soil geochem sampled in the 1985 program, results analyzed for the same elements, and the results superimposed on the same map, to which 33 meter contours have been added from a blowup of the 1:50,000 topog map (Fig. 3). A 9-station gold soil anomaly is seen crossing the "B" area of

interest, though a 10 meter grid will be required to further define the 500 m x 100 m area in which the anomalous grid values were picked up. This area is underlain by Upper Aldridge - Lower Proterozoic argillites, but considerable slopewash cover and second growth timber covers the anomaly area. Almost the whole "B" area is anomalous in the more soluble elements. While there is a certain Cu, Zn, Pb, As mineralization associated with the gold in the Dardanelles gold-quartz vein sub-economic grade ankerite-type silver-zinc-lead-carbonate replacement mineralization in the area (Kootenay King type), ankerite-diorite dykes on various attitudes, and low grade base metal "leakage" out of the black platey argillites themselves, makes the base metal "signal" confusing, with the exception of lead, which may be sufficiently insoluble, hence immobile to still be vein indicative. The additional difficulty of interpreting the base metal "signal" as an indicator or halo for gold is that Ag, Cu, Zn and As show a high but varied degree of solubility; hence, large down-slope haloes are difficult to interpret until carefully located on the contour map. When the contours of the ridgy topography are plotted, elongation down the local downslope direction becomes evident. The gold is thus linearly unrelated to anything except the lead for location purposes, and lead is associated both with gold-bearing (quartz vein type) and non-gold bearing (ankerite type) mineralization. In addition, downslope mass wasting of gold particulates tends to occur at different rates on different slopes, which also tends to break up the continuity of a soil gold signal from a vein.

Nonetheless, the B sub-area gold-soil anomaly is definitely "there". Both upslope and downslope of the area, soil gold values fall back to the 1-5 ppb (i.e., background) level, and the 1985 grid was large enough to establish that the value of background is indeed this low. Whether the 9-point gold anomaly represents a single trace, distorted by the above mechanism, or

more than one, remains to be seen by further detailed soil sampling.

In the portion of the 1985 follow-up program, several 1-point gold anomalies were locally ringed with 5-sample 5-m radius circles. One of the 1983 two-point gold anomalies proved to be borne out by the additional ring samples, (Area E). None of the one-point gold anomalies were, though. Local lead anomalies, similarly ringed, in some cases confirmed lead, but in only two cases was a tentative association with gold indicated.

Figure 3 shows the "B" D and E area gold anomalous points obtained in the 1985 work. Figure 4 adds in anomalous silver-base metal points in the 1985 work.

## 2. (b) Stream Sediment Survey, Wendy's Creek

In an attempt to see if a gold geochem signal indicative of the trace of the projection of the Dardanelles Fault/vein system crossing the Wendy's Creek headwall, 10, 30-m spaced stream sediment samples were taken from Wendy's Creek down to the point where the Dardanelles access road crosses Wendy's Creek (at about mid-elevation on the hill). No anomalous gold ppb values were found, indicating that slopewash/glacial debris may be masking its signal. (See Fig. 3 for sample locations.)



TABLE 1

## Soil Geochem Values, Subarea 'A' 1985 Fill-in Grid

Line (& Direction)	Sample	(ppm)					
		Cu	Pb	Zn	Ag	As	Au(ppb)*
Line A-1 2 + 50E	N A-1	34	34	115	.1	8	1
	A-2	19	22	99	.1	6	2
	A-3	14	33	33	.1	3	1
	A-4	7	15	55	.1	3	1
	A-5	11	19	80	.1	2	1
	S A-6	8	25	62	.2	5	2
Line A-2 1 + 50E	S A-7	15	30	108	<u>.5</u>	9	1
	A-8	27	41	100	.1	11	13
	A-9	10	18	34	.1	2	1
	A-10	8	11	30	.1	2	1
	A-11	24	20	63	.1	8	2
	A-12	21	19	74	.1	7	3
	A-13	14	17	88	<u>.4</u>	2	1
	N A-14	20	17	93	.1	2	6
Line A-3 0 + 50E	N A-15	52	22	65	.1	11	3
	A-16	11	11	81	.2	7	1
	A-17	20	12	102	.1	9	1
	A-18	14	18	<u>217</u>	.2	3	1
	A-19	13	10	45	.2	6	8
	A-20	24	17	69	.2	12	1
	A-21	33	9	35	.1	18	3
	S A-22	15	7	31	.1	15	1
Line A-4 0 + 50W	S A-23	15	13	38	.1	12	1
	A-24	24	10	41	.1	18	2
	A-25	32	22	113	.1	18	1
	A-26	24	20	99	.2	13	1
	A-27	20	15	102	.2	15	1
	N A-28	28	16	116	.1	12	1

WDG

TABLE 2

## Soil Geochem Values, Subarea 'B' 1985 Fill-in Grid

Line (& Direction)	Sample	(ppm)						
		Cu	Pb	Zn	Ag	As	Au(ppb)*	
Line 1 8 + 50E	N B-1	16	6	25	.3	4	3	
	B-2	10	11	29	.3	2	1	
	B-3	9	11	24	.3	5	1	
	B-4	11	9	29	.1	6	3	
	B-5	18	4	32	.1	10	6	
	B-6	12	9	31	.1	10	3	
	B-7	21	14	51	.3	7	4	
	B-8	15	25	52	.2	14	<u>105</u>	
	B-9	19	10	57	.4	14	<u>3</u>	
	S B-10	28	11	42	.2	13	7	
Line 2 7 + 50E	S B-11	18	14	43	.3	15	1	
	B-12	20	16	44	.2	8	1	
	B-13	20	12	42	.4	8	1	
	B-14	13	10	39	.3	5	<u>250</u>	
	B-15	34	10	42	.3	23	1	
	B-16	15	9	30	.1	10	1	
	B-17	21	7	30	.2	15	1	
	B-18	17	9	39	.1	12	<u>12</u>	
	N B-19	29	12	37	.1	17	1	
	Line 3 6 + 50E	N B-20	16	24	<u>144</u>	.2	4	1
B-21		20	12	41	.1	5	1	
B-22		14	9	28	.1	3	1	
B-23		35	12	41	.4	23	1	
B-24		34	25	45	.2	11	1	
B-25		67	22	40	.4	22	4	
B-26		40	13	36	.2	24	8	
S B-27		31	12	36	.1	12	<u>3</u>	
Line 4 5 + 50E		S B-28	19	7	29	.3	2	3
		B-29	15	16	41	.1	12	2
	B-30	25	15	35	.3	8	<u>24</u>	
	B-31	24	15	40	.1	12	<u>4</u>	
	B-32	31	13	40	.4	8	3	
	B-33	34	11	29	.1	24	2	
	B-34	33	12	28	.4	9	3	
	B-35	75	49	99	.2	16	3	
	N B-36	<u>170</u>	<u>128</u>	220	.4	34	9	
	Line 5 5 + 00E	S B-37	12	13	42	.2	9	1
B-38		20	19	38	.1	12	8	
B-39		27	11	37	.3	12	<u>20</u>	
B-40		33	6	29	.3	19	<u>4</u>	
B-41		35	46	194	.2	25	1	
B-42		<u>107</u>	<u>104</u>	85	.1	26	4	
N B-43		<u>34</u>	<u>21</u>	<u>179</u>	.1	11	2	

wgh

TABLE 2

## Subarea 'B' 1985 Fill-in Grid, Cont'd.

Line (& Direction)	Sample	(ppm)					Au(ppb)*
		Cu	Pb	Zn	Ag	As	
Line 6 4 + 50E	N B-44	23	25	123	.1	10	1
	B-45	28	22	100	.1	9	1
	B-46	32	16	41	.2	13	3
	B-47	30	22	37	<u>.4</u>	14	3
	B-48	14	21	30	.2	8	5
	B-49	24	14	27	<u>.4</u>	<u>18</u>	<u>48</u>
	S B-50	6	19	25	<u>.3</u>	<u>6</u>	<u>1</u>
Line 7 3 + 50E	S B-51	15	20	50	<u>.3</u>	<u>17</u>	2
	B-52	17	19	32	<u>.3</u>	<u>14</u>	3
	B-53	19	21	25	<u>.3</u>	<u>16</u>	<u>15</u>
	B-54	18	18	57	<u>.2</u>	<u>14</u>	<u>16</u>
	B-55	36	30	106	.2	<u>21</u>	<u>2</u>
	N B-56	17	22	89	<u>.4</u>	<u>8</u>	9

WDG

TABLE 3

## Soil Geochem Values, Subarea 'C' 1985 Fill-in Grid

Line (& Direction)	Sample	(ppm)					
		Cu	Pb	Zn	Ag	As	Au(ppb)*
Line C-1 2 + 50E	S C-1	10	23	34	<u>.4</u>	8	1
	C-2	17	23	30	<u>.3</u>	5	<u>13</u>
	C-3	14	20	33	<u>.2</u>	4	<u>1</u>
	C-4	14	21	40	.2	11	2
	N C-5	17	26	131	.2	8	14
Line C-2 1 + 50E	C-6	22	24	100	.2	8	1
	C-7	22	31	124	<u>.4</u>	12	1
	C-8	17	22	39	<u>.2</u>	8	6
	C-9	11	20	44	<u>.3</u>	11	1
	C-10	14	28	43	<u>.2</u>	11	1
Line C-3 0 + 50E	C-11	6	18	35	.1	8	11
	C-12	16	14	34	.2	2	1
	C-13	16	22	40	.1	9	<u>16</u>
	C-14	14	20	44	.1	6	<u>34</u>
	C-15	11	16	109	.2	5	<u>9</u>
	C-16	17	23	51	.1	8	14

WDG

TABLE 4

Soil Geochem Values, 1985, Subarea 'D', Fill-in Grid

		(ppm)					
Line	Sample#	Cu	Pb	Zn	Ag	As	Au(ppb)*
Line 1	S D-1	12	20	24	.1	7	5
		22	42	91	.1	15	1
		20	20	33	.2	12	1
		15	16	29	.2	8	1
	N D-5	22	12	22	.1	11	3
Line 2	N D-6	17	20	32	.2	12	2
		5	10	14	.1	2	12
		22	37	57	.1	19	2
		27	20	51	.1	21	4
	S D-10	16	27	59	.1	20	14
Line 3	S D-11	22	24	53	.1	17	29
		11	22	37	.2	5	5
		16	22	42	.2	9	4
		23	20	39	.2	16	5
	N D-15	17	4	27	.2	7	17

WDG

TABLE 5

## Soil Geochem Values, 1985, Sample Rings

Sample #	(ppm)					Au(ppb)*
	Cu	Pb	Zn	Ag	As	
	<u>40</u> <u>100</u>	<u>40</u> <u>60</u>	<u>150</u> <u>200</u>	<u>&gt;.3</u> <u>&gt;.4</u>	<u>15</u> <u>-</u>	
<b>Ring 1 - A Subarea (Cu, Pb, Zn elevated)</b>						
PBA-1	19	39	<u>219</u>	.1	7	1
PBA-2	15	29	<u>201</u>	.3	6	1
PBA-3	<u>63</u>	<u>41</u>	<u>185</u>	.1	22	1
PBA-4	13	28	<u>187</u>	.1	4	1
PBA-5	22	38	<u>194</u>	.2	6	1
<b>Ring 2 - A Subarea (Cu, Pb, Zn, As elevated)</b>						
PBA-6	37	<u>85</u>	<u>239</u>	<u>.4</u>	<u>17</u>	1
PBA-7	17	<u>61</u>	<u>227</u>	<u>.2</u>	10	1
PBA-8	12	<u>35</u>	<u>186</u>	.2	5	1
PBA-9	14	<u>46</u>	<u>191</u>	.2	7	1
PBA-10	29	<u>69</u>	<u>197</u>	<u>.3</u>	11	1
<b>Ring 3 - A Subarea (Cu, Pb, Zn elevated)</b>						
PBA-11	33	<u>44</u>	<u>174</u>	.1	9	1
PBA-12	<u>48</u>	<u>69</u>	<u>227</u>	.1	<u>18</u>	4
PBA-13	<u>57</u>	<u>90</u>	<u>220</u>	.1	<u>21</u>	1
PBA-14	23	<u>17</u>	<u>45</u>	.1	4	1
PBA-15	24	16	46	.2	8	1
<b>Ring 4 - A Subarea (Ag, Pb, Zn elevated)</b>						
PBA-16	19	39	129	.2	6	7
PBA-17	21	<u>41</u>	<u>239</u>	.1	12	3
PBA-18	23	<u>43</u>	<u>176</u>	.2	12	2
PBA-19	28	37	129	.1	13	10
PBA-20	24	32	141	.1	12	5
<b>Ring 5 - C Subarea (Au elevated)</b>						
PBA-21	23	47	<u>225</u>	.1	10	3
PBA-22	23	41	<u>225</u>	.1	12	1
PBA-23	43	<u>50</u>	<u>224</u>	.1	13	2
PBA-24	14	<u>37</u>	<u>199</u>	.2	12	1
PBA-25	23	51	<u>217</u>	.2	16	1
<b>Ring 6 - C Subarea (As, Cu elevated)</b>						
PAU-1	14	20	69	.1	3	12
PAU-2	22	23	42	.2	<u>20</u>	8
PAU-3	11	14	52	.1	9	2
PAU-4	14	26	46	.1	7	10
PAU-5	17	18	69	.2	7	3

WDG



TABLE 5

## Sample Rings, Cont'd.

Sample #	(ppm)					Au(ppb)*
	Cu	Pb	Zn	Ag	As	
	<u>40</u>	<u>40</u>	<u>150</u>	>.3	<u>15</u>	
	<u>100</u>	<u>60</u>	<u>200</u>	>.4	-	

## Ring 7 - B Subarea (Cu, Pb, Zn elevated)

PB-1	<u>75</u>	<u>42</u>	135	.1	14	2
PB-2	<u>68</u>	35	118	.2	11	6
PB-3	<u>116</u>	<u>88</u>	136	.2	11	4
PB-4	<u>80</u>	<u>62</u>	122	.1	7	3
PB-5	<u>102</u>	<u>71</u>	<u>178</u>	.1	<u>20</u>	3

## Ring 8

1983 Au anomaly 200 m SE of SE corner of A Subarea (Au elevated) (6 + 50N, 9 + 00E)

## (Au ANOMALY CONFIRMED)

WCT-1	10	9	20	.1	2	3
WCT-2	10	9	14	.3	2	<u>18</u>
WCT-3	8	7	18	.3	5	<u>6</u>
WCT-4	9	13	18	.2	3	8
WCT-5	10	12	14	.1	3	<u>37</u>

## Ring 9

Same anomaly as 8, 100 m to ESE 6 + 00N, 10 + 00E (Au elevated)

## (Au ANOMALY CONFIRMED)

WCT-6	11	8	18	.2	2	<u>10</u>
WCT-7	12	12	18	.1	2	<u>8</u>
WCT-8	13	11	18	.1	2	<u>20</u>
WCT-9	13	7	19	.1	2	<u>9</u>
WCT-10	13	10	19	.2	2	8

## Ring 10

## Location Unknown, gold not anomalous

WA-1	11	15	43	.1	2	5
WA-2	16	16	40	.1	3	2
WA-3	12	15	47	.1	2	1
WA-4	10	12	40	.2	6	1
WA-5	21	17	44	.1	4	2

WDH

Geochem Values, 1985

TABLE 6 - Wendy's Creek Traverse

a.

Silt Samples	Au ppb
Z1	11
Z2	1
Z3	5
Z4	4
Z5	2
Z6	2
Z7	1
Z8	1
Z9	4
Z10	1

b. Soil Geochem Values WS1-7 (alongside silt points Z1-Z7)

Sample	ppm					
	Cu	Pb	Zn	Ag	As	Au(ppb)*
WS-1	28	15	26	.1	6	6
WS-2	32	13	31	.1	10	5
WS-3	24	13	24	.1	4	6
WS-4	30	20	29	.1	3	8
WS-5	27	13	29	.1	4	10
WS-6	28	16	30	.1	4	6
WS-7	29	16	31	.1	7	10

*WDG*

TABLE 87.

Number in Category, Estimated Anomaly Levels (out of 82 samples)

	Cu	Pb	Zn	Ag	As	Au
Elevated	11 > 40 ppm	21 > 40 ppm	25 > 150 ppm	37 > .3 ppm	15 > 15 ppm	22 > 10 ppb
Anomalous	6 > 100 ppm	10 > 60 ppm	11 > 200 ppm	16 > .4 ppm	-	9 > 20 ppb
Maximum value in study	170 ppm	128 ppm	239 ppm	.6 ppm	26 ppm	250 ppb

*Wdy*

**CONCLUSIONS**

Further tight-grid soil auger sampling on the B & D and E sub-areas should be pursued to resolve gold soil anomalies now tentatively identified by the 1985 fill-in grid work. Interest is generally stimulated by the belief that at present gold prices, Dardanelles vein type and grade gold quartz mineralization has a good chance of being economic, making such structures worth following up.

Respectfully submitted

A handwritten signature in cursive script that reads "William D. Groves". The signature is written in dark ink and is positioned above a horizontal line.

W.D. Groves, P.Eng.

**APPENDIX I**

**WORK COST STATEMENT**

**FIELD PERSONNEL**

**Technical**

Dr. W.D. Groves, P.Eng  
(Geological, Chemical Engineering) @ \$350.00/day

Mr. Ken Gourley, Prospector @ \$150.00/day

Mr. Kelly Gourley, Sampling Assistant @ \$100.00/day

**General Support**

Mr. Joe Chaplin, Cook, Camp Helper @ \$ 50.00/day

<b>ACTIVITY</b>	<b>SAMPLES</b>	<b>W.D. GROVES</b>	<b>KEN GOURLEY</b>	<b>KELLY GOURLEY</b>
Grid Sampling (5.75 Line km)	115 soils	2	4	4
Sample Rings (7 rings)	60 soils	1	3	3
Miscellaneous (Geol. traverses) (1/2 day)	3 rock, 3 soils	1/2	1/2	1/2
Wendy's Creek Silt (1/2 day)	10 Stream Sed.	1	-	1
		<hr/> 5	<hr/> 8	<hr/> 8.5
	x	\$ 350/day	\$ 150/day	\$ 100/day
		<hr/> \$1,750.00	<hr/> \$1,200.00	<hr/> \$ 850.00
		=====	=====	=====

Joe Chaplin: Total 10 days @ \$50/day - \$ 500.00

**Total professional and labor:** \$4,300.00

**Food, 10 days @ \$100/day** 1,000.00  
(Camp of 4-5 persons)

**Camp purchase & rental (tents, etc.)** 300.00

**Field Supplies** - Bags & Assays (182 x \$10) 1,880.00  
- Maps, incidentals 100.00

*WDG*

**Transportation**

1.	Field - K. Gourley's Van (500 km x .30/km)	150.00
2.	Vancouver-Cranbrook (1 day each way) Return 1000 km x .30/km	600.00

**Personnel**

2 days standby at 1/2 professional rates \$350 + \$150 + \$50	650.00
--	--------

Total applicable fieldwork related \$7,880.00

Report by W.D. Groves, 18 Aug/86 1,500.00

**TOTAL WORK PROGRAM:** \$9,380.00  
=====

**NOTES:**

**A. BREAKDOWN:**

1.	GEOLOGICAL: W.D. GROVES & 1 day standby Overhead (other items) + portion of report	\$ 1,925.00 300.00
		<u>\$ 2,200.00</u>
2.	GEOCHEMICAL: (balance) \$9,380-\$2,200=	7,180.00
		<u>7,180.00</u>
	Total:	<u>\$ 9,380.00</u> =====

**B. REPORT COSTS:**

W.D. Groves - report preparation text 2 1/2 days at \$350/day	\$ 875.00
Initial mapping of geochem results 1 day @ \$350/day	350.00
	<u>\$ 1,225.00</u>
Drafting, xeroxing, word processing	275.00
	<u>275.00</u>
Total:	<u>\$ 1,500.00</u> =====

*wdg*



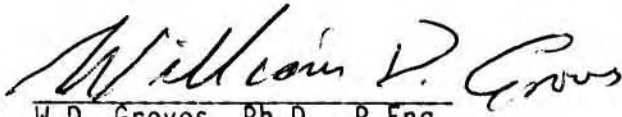
APPENDIX 2

CERTIFICATE W.D. GROVES

I, William D. Groves, do hereby certify that:

1. I, William D. Groves am a consulting engineer (geological) with an office at 200-675 West Hastings Street, Vancouver, British Columbia, V6B 4Z1.
2. I am a graduate of the University of British Columbia (B.A.Sc. in Geological Engineering, 1960). I am a graduate of the University of Alberta, B.Sc., in Chemical Engineering in 1962, and of the University of British Columbia with a Ph.D. in Chemical Engineering in 1971.
3. I am a registered Professional Engineer in the Province of British Columbia, #8082.
4. I have practiced my profession since 1960.
5. I have visited the subject property area for a total of 6 days, 5 days on the "A" claim and one day on the "Dardanelle" Crown Grant Group. The visits occurred during the period, June 28 to July 12, 1985, during which time I supervised geochemical grid sampling and geology on the "A" claim, and inspected the "Dardanelle" workings. Additional sources of information: Kregosky's 6-day study on the Tit-For-Tat group; Sookachoff's 1983 report on the "A" claim; Rice - GSC, 1937, Regional Geology; Minister of Mines Reports from 1898 - 1925, and general geological experience with quartz fault vein systems.

Dated at Vancouver, British Columbia, this 15th day of August 1986.

  
W.D. Groves, Ph.D., P.Eng.

*APPENDIX III* *ANALYTICAL CERTIFICATES*  
*FOR CLAIM, 1985 PROGRAM.*

ACME ANALYTICAL LABORATORIES LTD.  
 12 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6  
 PHONE 253-3158 DATA LINE 251-1011

DATE RECEIVED: JULY 9 1985

DATE REPORT MAILED: *July 15/85*

**GEOCHEMICAL ICP ANALYSIS**

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
 THIS LEACH IS PARTIAL FOR MN, FE, CA, F, CR, MG, BA, TI, B, AL, NA, K, W, SI, ZR, CE, SN, Y, NB AND TA. AU DETECTION LIMIT BY ICP IS 3 PPM.  
 - SAMPLE TYPE: P1-2 SOILS -80 MESH P3-ROCKS AU\* ANALYSIS BY AA FROM 10 GRAM SAMPLE.

ASSAYER: *V. Saundry* DEAN TOYE OR TOM SAUNDY. CERTIFIED B.C. ASSAYER

JUSTICE MINING PROJECT - KOOT FILE # 85-1301 PAGE 1

SAMPLE#	Cu PPM	Pb PPM	Zn PPM	Ag PPM	As PPM	Au* PPB
WA-1	11	15	43	.1	2	5
WA-2	16	16	40	.1	3	2
WA-3	12	15	47	.1	2	1
WA-4	10	12	40	.2	6	1
WA-5	21	17	44	.1	4	2
WCT-1	10	9	20	.1	2	3
WCT-2	10	9	14	.3	2	18
WCT-3	8	7	18	.3	5	6
WCT-4	9	13	18	.2	3	8
WCT-5	10	12	14	.1	3	37
WCT-6	11	8	18	.2	2	10
WCT-7	12	12	18	.1	2	8
WCT-8	13	11	18	.1	2	20
WCT-9	13	7	19	.1	2	9
WCT-10	13	10	19	.2	2	8
FB-1	75	42	135	.1	14	2
FB-2	68	35	118	.2	11	6
FB-3	116	88	136	.2	11	4
FB-4	80	62	122	.1	7	3
FB-5	102	71	178	.1	20	3
FBA-1	19	39	219	.1	7	1
FBA-2	15	29	201	.3	6	1
FBA-3	63	41	185	.1	22	1
FBA-4	13	28	187	.1	4	1
FBA-5	22	38	194	.2	6	1
FBA-6	37	85	239	.4	17	1
FBA-7	17	61	227	.2	10	1
FBA-8	12	35	186	.2	5	1
FBA-9	14	46	191	.2	7	1
FBA-10	29	69	197	.3	11	1
FBA-11	33	44	174	.1	9	1
FBA-12	48	69	227	.1	18	4
FBA-13	57	90	220	.1	21	1
FBA-14	23	17	45	.1	4	1
FBA-15	24	16	46	.2	8	1
FBA-16	19	39	129	.2	6	7
STD C/AU 0.5	58	41	133	6.9	39	500

*Handwritten notes:*  
 WA-1, WA-2, WA-3, WA-4, WA-5  
 WCT-1, WCT-2, WCT-3, WCT-4, WCT-5  
 WCT-6, WCT-7, WCT-8, WCT-9, WCT-10  
 FB-1, FB-2, FB-3, FB-4, FB-5  
 FBA-1, FBA-2, FBA-3, FBA-4, FBA-5  
 FBA-6, FBA-7, FBA-8, FBA-9, FBA-10  
 FBA-11, FBA-12, FBA-13, FBA-14, FBA-15  
 FBA-16  
 (circled) 'CONF' next to FB-1, FB-2, FB-3, FB-4, FB-5  
 'RING' written vertically next to WCT-6 through WCT-10  
 'stake' written next to FB-1 through FB-5  
 'stake' written next to FBA-6 through FBA-10  
 '16-20' written next to FBA-16  
 'Exp 70 Cal' written next to FBA-7

*Handwritten signature:* WDM

SAMPLE#	Cu PPM	Pb PPM	Zn PPM	Ag PPM	As PPM	Au* PPB
<i>Lead - All</i> PBA-17	21	41	239	.1	12	3
PBA-18	23	43	176	.2	12	2
PBA-19	28	37	129	.1	13	10 <i>-st</i>
PBA-20	24	32	141	.1	12	5
PBA-21	23	47	225	.1	10	3
PBA-22	23	41	225 <i>2nd bit high</i>	.1	12	1
PBA-23	43	50	224	.1	13	2
PBA-24	14	37	199	.2	12	1
PBA-25	23	51	217	.2	16	1
FAU-1	14	20	69	.1	3	12
FAU-2	22	23	42	.2	20	8
FAU-3	11	14	52	.1	9	2
FAU-4	14	26	46	.1	7	10
FAU-5	17	18	69	.2	7	3
STD C/AU 0.5	61	39	140	7.4	41	480

*wdy*

SAMPLE#	Cu PPM	Pb PPM	Zn PPM	Ag PPM	As PPM	Au* PPB
WCT-3	3	2	5	.1	8	5
WCT-9	6	5	20	.1	15	9
WCT-11	2	7	5	.1	12	1
WCT-12	5	2	9	.1	3	2
WCT-13	4	5	1	.2	4	6
WCT-14	5	5	2	.3	2	3
BC-1	130	4	8	.3	3	40
BC-2	136	59	57	.3	78	8
STD C/AU-0.5	58	38	137	6.9	39	500

Wendys Cr  
Trase.

Boulder  
Creek.

WDY

ACME ANALYTICAL LABORATORIES LTD.  
852 E. HASTINGS, VANCOUVER B.C.  
PH: (604) 253-3158 COMPUTER LINE: 251-1011

DATE RECEIVED JULY 3 1985  
DATE REPORTS MAILED *July 9/85*

### GEOCHEMICAL ASSAY CERTIFICATE

SAMPLE TYPE : SOIL - DRIED AT 60 DEG C. , -80 MESH.  
Au# - 10 GM. IGNITED, HOT AQUA REGIA LEACHED, MIBK EXTRACTION, AA ANALYSIS.

ASSAYER *V. Saundry* DEAN TOYE OR TOM SAUNDRY, CERTIFIED B.C. ASSAYER

JUSTICE MINING FILE# 85-1205

PAGE# 1

SAMPLE	Au# ppb
Z-1	11
Z-2	1
Z-3	5
Z-4	4
Z-5	2
Z-6	2
Z-7	1
Z-8	1
Z-9	4
Z-10	1

*WDH*

**GEOCHEMICAL ICP ANALYSIS**

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
 THIS LEACH IS PARTIAL FOR MN.FE.CA.P.CR.MG.BA.TI.B.AL.NA.K.W.SI.ZR.CE.SN.Y.NB AND TA. AU DETECTION LIMIT BY ICP IS 3 PPM.

- SAMPLE TYPE: SOILS -80 MESH AND ROCKS AU\* ANALYSIS BY AA FROM 10 GRAM SAMPLE.

ASSAYER: *Tom Saundry* DEAN TOYE OR TOM SAUNDY. CERTIFIED B.C. ASSAYER

JUSTICE MINING

FILE # 85-1380

PAGE 1

SAMPLE#	Cu PPM	Pb PPM	Zn PPM	Ag PPM	As PPM	Au* PPM
A-1	34	34	115	.1	8	1
A-2	19	22	99	.1	6	2
A-3	14	33	33	.1	3	1
A-4	7	15	55	.1	3	1
A-5	11	19	80	.1	2	1
A-6	8	25	62	.2	5	2
A-7	15	30	108	.5	9	1
A-8	27	41	100	.1	11	13
A-9	10	18	34	.1	2	1
A-10	8	11	30	.1	2	1
A-11	24	20	63	.1	8	2
A-12	21	19	74	.1	7	3
A-13	14	17	88	.4	2	1
A-14	20	17	93	.1	2	6
B-1	16	6	25	.3	4	3
B-2	10	11	29	.3	2	1
B-3	9	11	24	.3	5	1
B-4	11	9	29	.1	6	3
B-20	16	24	144	.2	4	1
B-21	20	12	41	.1	5	1
B-22	14	9	28	.1	3	1
B-23	35	12	41	.4	23	1
B-24	34	25	45	.2	11	1
B-25	67	22	40	.4	22	4
B-26	40	13	36	.2	24	8
B-27	31	12	36	.1	12	3
B-28	19	7	29	.3	2	3
B-29	15	16	41	.1	12	2
B-30	25	15	35	.3	8	24
B-31	24	15	40	.1	12	4
B-32	31	13	40	.4	8	3
B-33	34	11	29	.1	24	2
B-34	33	12	28	.4	9	3
B-35	75	49	99	.2	16	3
B-36	170	128	220	.4	34	9
STD C/AU 0.5	60	44	135	7.4	39	480

*Anomaly  
Fill-in!*

*A-GRIP*

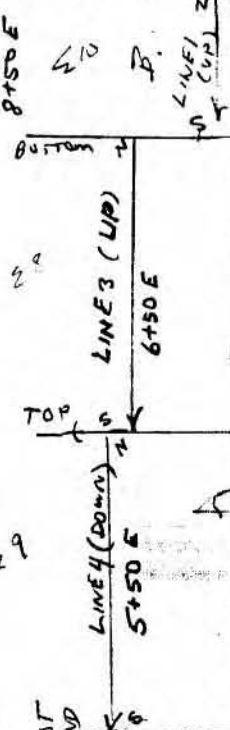
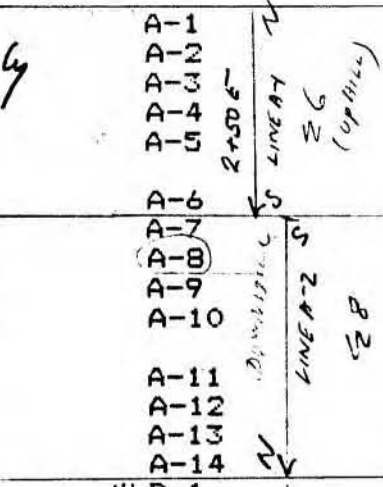
*8450 E*

*B-GRIP*

*29*

*8450 E*

*WDH*



SAMPLE#	Cu PPM	Pb PPM	Zn PPM	Ag PPM	As PPM	Au* PPB
WS-1	28	15	26	.1	6	6
WS-2	32	13	31	.1	10	5
WS-3	24	13	24	.1	4	6
WS-4	30	20	29	.1	3	8
WS-5	27	13	29	.1	4	10
WS-6	28	16	30	.1	4	6
WS-7	29	16	31	.1	7	10
PBL-1	24	33	59	.1	7	9
PBL-2	11	26	52	.2	14	5
PBL-3	34	31	28	.2	14	1
PBL-4	15	21	62	.3	8	1
PBL-5	13	21	42	.1	6	5
WALL SED-1	19	12	26	.6	5	24
SHEAR-1 SED	28	18	46	.1	10	11
SHEAR-1 ROCK	49	7	17	.1	19	4
STD C/AU 0.5	60	39	135	7.3	39	485

*Wardys Cr  
silt down  
to access  
rd.*

*Wallinger Cr. →  
Sed. Rd. W.P.*

*NTOW show  
up without Cr  
n.E. camp  
20 Wardys Cr.*

*WDH*

**GEOCHEMICAL ICP ANALYSIS**

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
 THIS LEACH IS PARTIAL FOR NM, FE, CA, P, CR, MG, BA, TI, B, AL, NA, K, W, SI, ZR, CE, SN, Y, NB AND TA. AU DETECTION LIMIT BY ICP IS 3 PPM.  
 SAMPLE TYPE: SOILS 80-MESH AU ANALYSIS BY AA FROM 10 GRAM SAMPLE.

ASSAYER: *V. Saundry* DEAN TOYE OR TOM SAUNDY. CERTIFIED B.C. ASSAYER

JUSTICE MINING

FILE # 85-1582

PAGE 1

SAMPLE#	Cu PPM	Pb PPM	Zn PPM	Ag PPM	As PPM	Au* PPM
A-15	52	22	65	.1	11	3
A-16	11	11	81	.2	7	1
A-17	20	12	102	.1	9	1
A-18	14	18	217	.2	3	1
A-19	13	10	45	.2	6	(8)
A-20	24	17	69	.2	12	1
A-21	33	9	35	.1	18	3
A-22	15	7	31	.1	15	1
A-23	15	13	38	.1	12	1
A-24	24	10	41	.1	18	2
A-25	32	22	113	.1	18	1
A-26	24	20	99	.2	13	1
A-27	20	15	102	.2	15	1
A-28	28	16	116	.1	12	1
B-5	18	4	32	.1	10	6
B-6	12	9	31	.1	10	3
B-7	21	14	51	.3	7	4
B-8	15	25	52	.2	14	(105)
B-9	19	10	57	.4	14	3
B-10	28	11	42	.2	13	7
B-11	18	14	43	.3	15	1
B-12	20	16	44	.2	8	1
B-13	20	12	42	.4	8	1
B-14	13	10	39	.3	5	(250)
B-15	34	10	42	.3	23	1
B-16	15	9	30	.1	10	1
B-17	21	7	30	.2	15	1
B-18	17	9	39	.1	12	12
B-19	29	12	37	.1	17	1
B-37	12	13	42	.2	9	1
B-38	20	19	38	.1	12	8
B-39	27	11	37	.3	12	20
B-40	33	6	29	.3	19	4
B-41	35	46	194	.2	25	1
B-42	107	104	85	.1	26	4
B-43	34	21	179	.1	11	2
STD C/AU-0.5	60	40	133	7.0	38	490

A-GRID

B anomaly  
in fill in.

B-GRID

CONT. LINE 2

VERY  
FOURLET  
(1/21/85)

*wdy*



SAMPLE#	Cu PPM	Pb PPM	Zn PPM	Ag PPM	As PPM	Au* PPB	
(N) BUTTE							
B-44	23	25	123	.1	10	1	
B-45	28	22	100	.1	9	1	
B-46	32	16	41	.2	13	3	
B-47	30	22	37	.4	14	3	
B-48	14	21	30	.2	8	5	
B-49	24	14	27	.4	18	48 ✓	
(E) TOP	B-50	6	19	25	.3	6	1
(S) TOP	B-51	15	20	50	.3	17	2
	B-52	17	19	32	.3	14	3
	B-53	19	21	25	.3	16	15 ✓
	B-54	18	18	57	.2	14	16 ✓
	B-55	36	30	106	.2	21	2
(N) BUTT	B-56	17	22	89	.4	8	9
	C-1	10	23	34	.4	8	1
	C-2	17	23	30	.3	5	13
	C-3	14	20	33	.2	4	1
	C-4	14	21	40	.2	11	2
	C-5	17	26	131	.2	8	14
	C-6	22	24	100	.2	8	1
	C-7	22	31	124	.4	12	1
	C-8	17	22	39	.2	8	6
	C-9	11	20	44	.3	11	1
	C-10	14	28	43	.2	11	1
	C-11	6	18	35	.1	8	11
	C-12	16	14	34	.2	2	1
	C-13	16	22	40	.1	9	16
	C-14	14	20	44	.1	6	34
	C-15	11	16	109	.2	5	9
	C-16	17	23	51	.1	8	14
	D-1	12	20	24	.1	7	5
	D-2	22	42	91	.1	15	1
	D-3	20	20	33	.2	12	1
	D-4	15	16	29	.2	8	1
	D-5	22	12	22	.1	11	3
	D-6	17	20	32	.2	12	2
	D-7	5	10	14	.1	2	12
STD C/AU-0.5	58	41	128	7.2	39	480	

B-GRIFF

(N) BUTTE  
(UP) LINE 6 (19)  
27  
4+50E  
(E) TOP  
(S) TOP  
K5, LINE 7 (DOWN)  
26  
3+50E  
(N) BUTT  
LINE C-1  
2+50E  
LINE C-2  
1+50E  
LINE C-3  
0+50E  
anomoly and fill-in.  
D6-D10

WDH

SAMPLE#	Cu PPM	Pb PPM	Zn PPM	Ag PPM	As PPM	Au* PPB
D-8	22	37	57	.1	19	2
D-9	27	20	51	.1	21	4
D-10	16	27	59	.1	20	14
D-11	22	24	53	.1	17	29
D-12	11	22	37	.2	5	5
D-13	16	22	42	.2	9	4
D-14	23	20	39	.2	16	5
D-15	17	4	27	.2	7	17

wdh

1. WDG ROCK SAMPLES, DIARDANELLES VEIN  
AREA, JUNE 30/85 VISIT.

ACME ANALYTICAL LABORATORIES LTD.  
252 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6  
PHONE 253-3158 DATA LINE 251-1011

DATE RECEIVED: JULY 3 1985

DATE REPORT MAILED: *July 9/85*

### GEOCHEMICAL ICP ANALYSIS

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
THIS LEACH IS PARTIAL FOR MN.FE.CA.P.CR.MG.BA.TI.B.AL.NA.K.W.SI.ZR.CE.SN.Y.NB AND TA. AU DETECTION LIMIT BY ICP IS 3 PPM.  
- SAMPLE TYPE: ROCK CHIPS AU\* ANALYSIS BY AA FROM 10 GRAM SAMPLE.

ASSAYER: *T. Saundry* DEAN TOYE OR TOM SAUNDY. CERTIFIED B.C. ASSAYER

JUSTICE MINING

FILE # 85-1205

PAGE 2

SAMPLE#	Cu	Pb	Zn	Ag	As	Au*
	PPM	PPM	PPM	PPM	PPM	PPB
HG MOTHER	7574	33296	103	164.4	1583	6050
PIT-1-Q	210	2333	79	5.9	60	4250
PIT-1-S	65	107	159	.2	4	46
PIT-1-3 ANK	10	71	59	.2	2	58

*WDH*

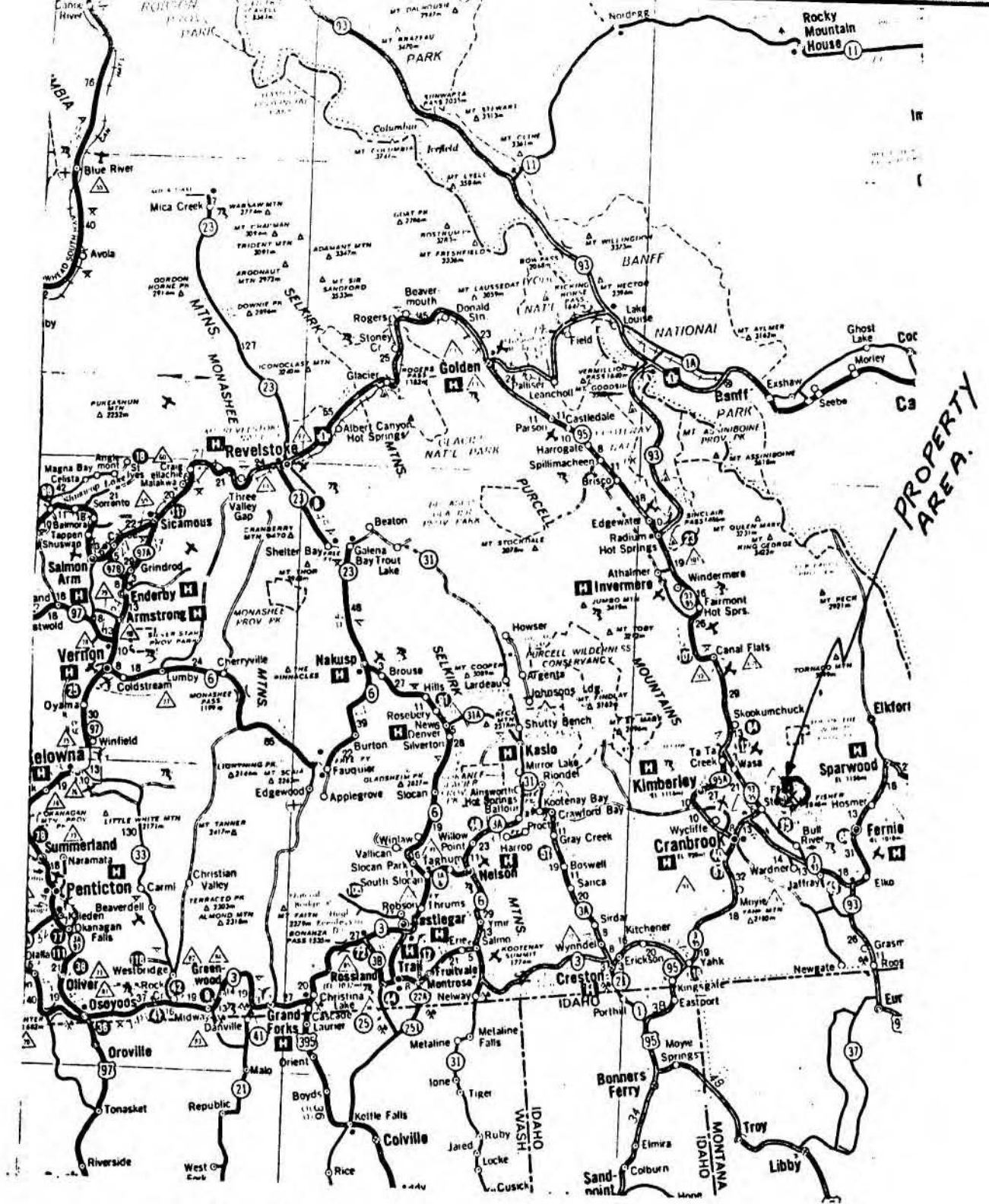
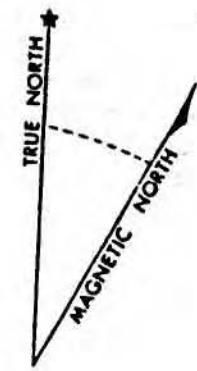
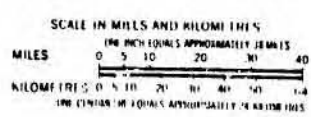


FIG. 1. AREA MAP, SHOWING  
 PROPERTY. SCALE: 1" = 38 MI.  
 1cm = 25 km.



WDG

M82G/12E

FORT STEELE MINING DIVISION

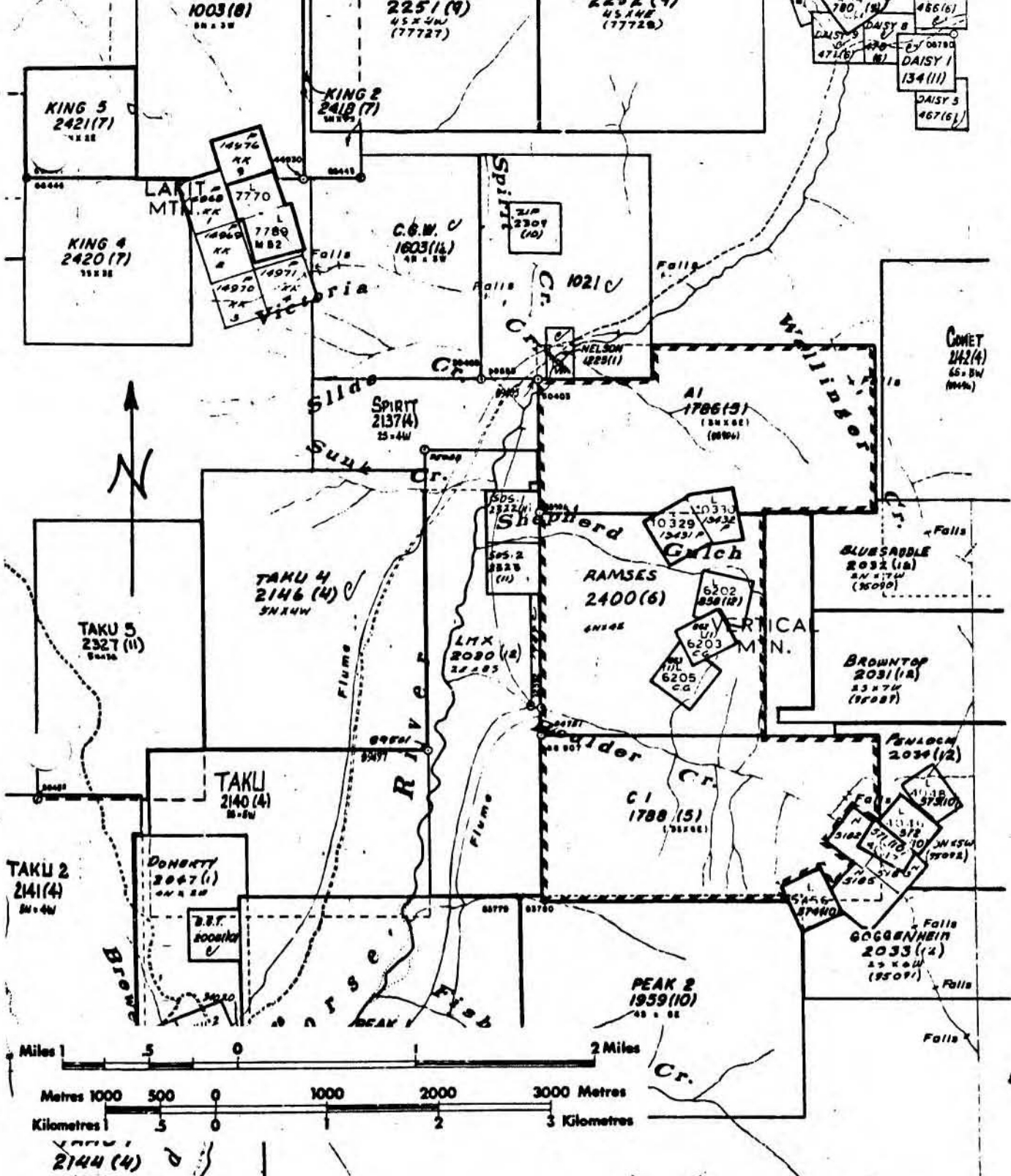


FIG. 2. CLAIM MAP 82G/12E  
 SCALE 1:50,000 A1, RAMSES, C1  
 CLAIMS. GROWN GRANTS L10330,  
 L10329, L6202, 6203, 6205.

LEGEND  
 GROWN-GRANTED MINERAL CLAIM  
 REVERTED C.G. MINERAL CLAIM  
 FORFEITED MINERAL CLAIM  
 CORNER POST

POST & TAG NUMBER  
 82G  
 MAP 82G/12E

W.P.G.

Mauso  
 FLUME





**LEGEND**

- 35 Au in ppb
- ⊙ 1985 GOLD SOIL ANOMALY WITH SAMPLE NO.
- ⊙ 1985 GOLD SOIL ANOMALY (HIGHER Au VALUE)
- ② PBA6-10 RING SAMPLES (5 samples)

**1983 SOIL GEOCHEM. ANOMALIES**

- Cu COPPER
- Pb LEAD
- Zn ZINC
- Ag SILVER
- As ARSENIC
- Au GOLD

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**15,036**  
Contours of 100 intervals

**JUSTICE - BOWES LYON  
JOINT VENTURE**

**A MINERAL CLAIM  
1985 GOLD SOIL GEOCHEM.  
ANOMALY POINTS & SAMPLE NOS  
FORT STEELE M.D., B.C.**

0 100 200 300 METRES

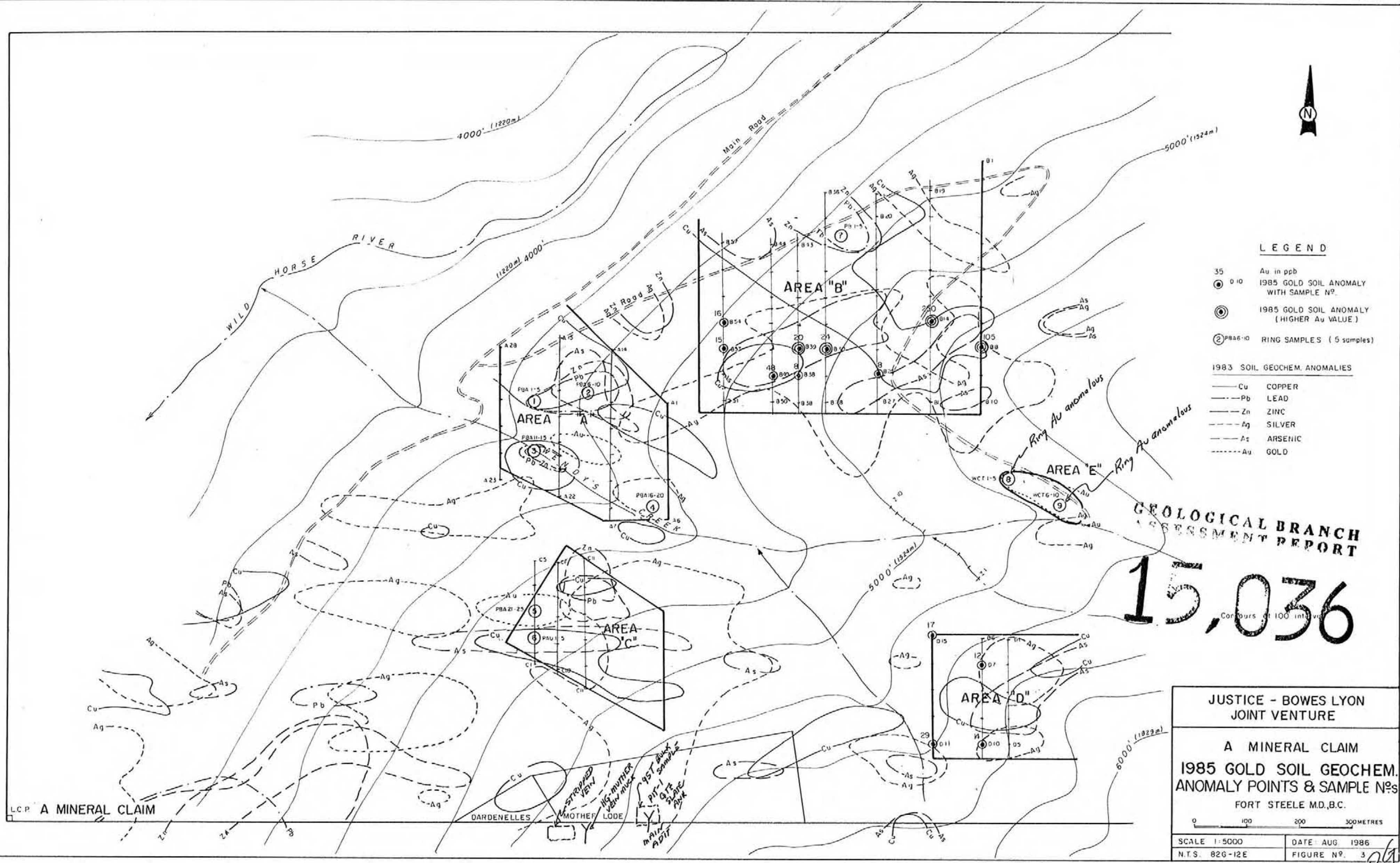
SCALE 1:5000 DATE AUG 1986  
N.T.S. 82G-12E FIGURE NO. 3

L.C.P. A MINERAL CLAIM

DARDELLES

STREPPED VEIN  
MOTHER LODE

95T BOX  
PIT-1  
GATE  
SLATE  
PARK



W 06



