

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

14660  
9/86

**14,660**  
ASSESSMENT REPORT  
ON  
GEOLOGICAL AND GEOCHEMICAL WORK  
ON THE FOLLOWING CLAIMS

ARMINIUS.....#4116(9)  
SENECA.....#4115(9)

located

46 KM NORTH OF  
STEWART, BRITISH COLUMBIA  
SKEENA MINING DIVISION

56 degrees 19 minutes latitude  
130 degrees 02 minutes longitude

FILMED

N.T.S. 104B/8E

PROJECT PERIOD: Sept. 26-27, 1985

ON BEHALF OF  
TEUTON RESOURCES CORP.  
VANCOUVER, B.C.

REPORT BY

W.D. Groves, Ph.D., P.Eng.  
Archaean Resources Corp.  
200-675 W. Hastings  
Vancouver, B.C.

Date: Dec. 16, 1985

## TABLE OF CONTENTS

	Page	
1. INTRODUCTION	1	
A. Property, Location, Access and Physiography	1	
B. Status of Property	1	
C. History	1	
D. References	2	
E. Summary of Work Done	2	
2. TECHNICAL DATA AND INTERPRETATION	3	
A. Regional Geology	3	
B. Property Geology, Traverses, Samples	4	
C. Sample Key	5	
D. Conclusions	5	
APPENDICES		
I. Work Cost Statement		
II. Certificate		
III. Assay Certificates		
ILLUSTRATIONS		
Fig. 1	Location Map	Report Body
Fig. 2	Claims Map	Report Body
Fig. 3	Geology, Traverse & Sample Notes Map	Map Pocket

## 1. INTRODUCTION

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

The Arminius and Seneca claims are situated 45 air-kilometers north-northwest of Stewart, British Columbia on the eastern side of the northward flowing Bowser River, approximately 5 kilometers north of the air strip at Tide Flats. Claim elevation varies from 600m in the bottom of the Bowser River valley to about 1800m on the topland.

Present access is by helicopter from either the main base at Stewart or the airstrip mentioned previously. Although inconvenient, it would be possible to access the property on foot along the north bank of the Bowser River from the terminus of the Granduc road system.

The upper Bowser River valley is a wide north-south trending glacial feature without, as yet, any significant post-glacial downcutting. Three westward opening side valleys, headed in cirques (the two more northerly valleys retain substantial valley glaciers), feed creeks tributary to the Bowser. Physiography is glacially rounded benches and gravel bottomed creeks reworking glacial moraine. Vegetation in the camp area was comprised mainly of timberline balsam, scrub growing in patches. On the north side of the first side canyon north of camp, a well established balsam and spruce forest grows, even on very steep ground. This gives way, at higher elevation, to steep willow and grass clearings, then to grass and isolated patches of balsam scrub in the heath. The area is frequented by goats and small game.

### B. Status of Property

Relevant claim information is summarized below:

Name	Record No.	No. of Units	Record Date
Seneca	4115	4	Sept. 27, 1983
Arminius	4116	20	Sept. 27, 1983

The claims are shown on Fig. 2. The claims were staked by D. Cremonese on Sept. 27, 1983 on behalf of Teuton Resources Corp..

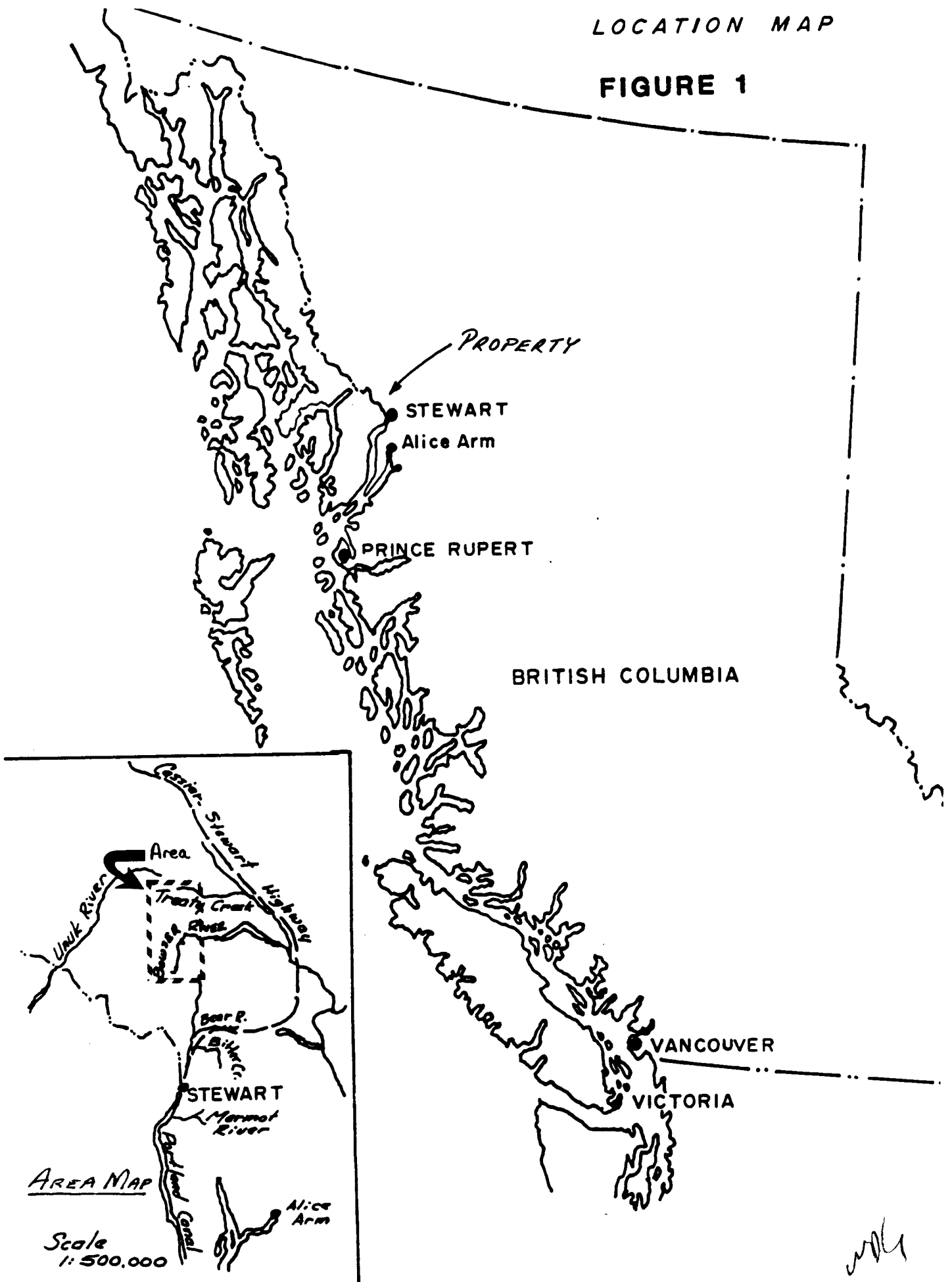
### C. History

No previous claims are known in the area now covered by the claims. The area just to the south was reportedly investigated by prospectors during the 1930's following up reports of quartz

*with*

LOCATION MAP

FIGURE 1



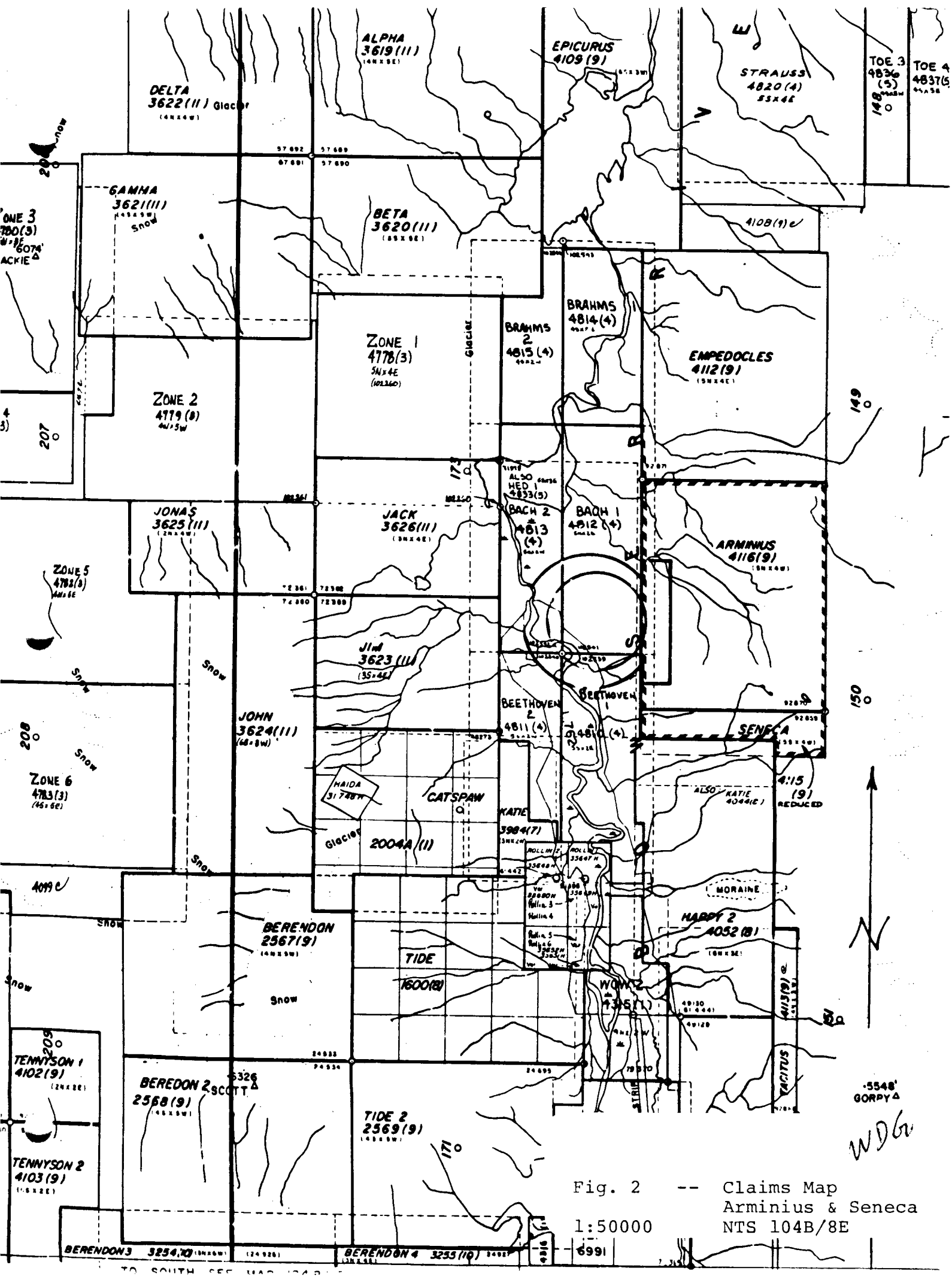


Fig. 2 -- Claims Map  
 Arminius & Seneca  
 NTS 104B/8E  
 1:50000

W.D.G.

vein mineralization similar to that exposed on the western side of the then existant Tide Lake (e.g, the electrum bearing quartz veins at the East Gold Mine). Recent staking in the area was touched off by a new gold discovery (in pyrrhotite fault-veins) in the Tide Lake Flats area (close to the Granduc concentrator) in the summer of 1983.

Assessment work carried out by Teuton Resources Corp. in September, 1984, detected a modest, but large, EM conductor on the southern claim boundary of the Arminius claim. This survey was carried out by helicopter using airborne EM and Mag equipment from Apex Airborne Surveys. No follow-up work took place until the author and party visited the claims in 1985.

#### D. References

1. ALLDRICK, D.J.(1984); Geological Setting of the Precious Metals Deposits in the Stewart Area, Paper 84-1, Geological Fieldwork 1983", B.C.M.E.M.P.R.
2. GROVE, E.W. ET AL (1982); Unuk River-Salmon River-Anyox Area. Geological Mapping 1:1000000 B.C.M.E.M.P.R.
3. GROVE, E.W. (1971); Geology of Mineral Deposits of the Stewart Area. Bulletin 58, B.C.M.E.M.P.R.
4. Groves, W.D., P.Eng. & R. Sheldrake, B.Sc.(1984); Assessment Work Report--Airborne Geophysical EM and Mag Survey on Teuton Resources Corp. Claims in the Stewart Area (on file with the B.C. Department of Mines, # unknown at present).

#### E. Summary of Work Done

Three geological and sampling traverses were conducted in a two day period, Sept. 26-27, 1985. Field crew consisted of the author, geologist Andy Harman, and geological assistant, Garth Johnson. A fly camp was established at the 1450m level at treeline (waist-high scrub balsam patches and heath) beside a small alpine pond. Weather during the visit was excellent. Personnel and supplies were transported to and from the property by helicopter from Stewart.

Several rock character samples were taken and assayed by Atomic Absorption for gold, silver and copper.

Geological observations made by Mr. Harman have been incorporated into this report for the sake of brevity.

## 2. TECHNICAL DATA AND INTERPRETATION

### A. Regional Geology

The claims lie in the Stewart area east of the Coast Crystalline Complex and within the western boundary of the Bowser Basin. Rocks in the area belong to the Mesozoic Hazelton Group and have been intruded by plugs of both Cenozoic and Mesozoic age.

Within the Hazelton Group, Lower Jurassic volcanic and sedimentary rocks of the Unuk River Formation are unconformably overlain by Middle and Upper Jurassic non-marine and marine sediments (with minor volcanics) of the Betty Creek, Salmon River and Nass Formations.

The oldest rocks in the area belong to the Lower Jurassic Unuk River Formation which forms a north-northwesterly trending belt extending from Alice Arm to the Iskut River. It consists of green, red and purple volcanic breccia, conglomerate, sandstone and siltstone with minor crystal and lithic tuff, limestone, chert and coal. Also included in the sequence are pillow lavas and volcanic flows.

The Unuk River Formation is unconformably overlain by Lower Middle and Middle Jurassic rocks from the Betty Creek and Salmon River Formations, respectively. The Betty Creek Formation consists of pillow lavas, broken pillow breccias, andesitic and basaltic flows, green, red, purple and black volcanic breccia, conglomerate, sandstone and siltstone with minor crystal and lithic tuffs, chert, limestone and lava. The overlying Salmon River Formation consists of banded, predominantly dark coloured, siltstone, greywacke, sandstone, intercalated calcarenite, minor limestone, argillite, conglomerate, littoral deposits, volcanic sediments and flows.

According to Grove (Ref. 2 & 3), the majority of the rocks from the Hazelton Group were derived from the erosion of andesitic volcanoes subsequently deposited as overlapping lenticular beds varying laterally in grain size from breccia to siltstone.

Intrusives in the area are dominated by the granodiorite of the Coast Plutonic Complex (to the west). Smaller intrusive plugs range from quartz monzonite to granite and are likely related phases of the Coast Plutonic Complex.

Double plunging, northwesterly-trending synclinal folds of the Salmon River and underlying Betty Creek Formations dominate the structural setting of the area.

## B. Property Geology, Traverses, Samples

The rusty weathering slates outcropping on the southern portion of the claim block (tentatively assigned to the Betty Creek Formation) are overlain at high elevation and to the north by a thick sequence of andesitic volcanic flows and tuffs (upper Betty Creek?). This section is intruded by small and large barren quartz-porphyry sills, dykes and plugs which do not seem to be mineralized. Three "bed-aligned" gossans in the volcanics in the north wall of the second canyon (northeast of the claims) and a large blond gossan, elongate vertically and more or less round in plan section, east of the claim area, denote hydrothermalization of the lower metalliferous formations. No gossans of comparable size were noted on the subject claims themselves.

On the first traverse (see Fig No. 3), the feature of interest is the metallized platy cleavage, facing (and causing) the steep 700m cliffy slopes southward onto the valley floor, south of camp. The tiny creek draining the two tarns (camp was on the more northerly) drops off the edge of this cleavage cliff. Cleavage is approximately northwest by west/steep south and transects contorted bedding compositional banding. Secondary redeposition of metallic gold-copper sheens on iron oxide in partings in the black argillite are present on fresh talus as well as in place: the effect is obviously pervasive, and thought, cumulatively, to be capable of causing the observed areal anomaly noted in the previous season's helicopter borne Mag-EM survey of the claims.

Two samples (Z-2 & Z-3) of this metallized-cleavage slate material were taken, showing elevated copper (with respect to estimated background), slightly elevated silver but negligible gold. In a roughly north/steep direction, ragged quartz carbonate veins were noted: samples of these proved to be exceptionally barren, confirming visual estimates of mineral content.

In the second traverse, another of the north/steep, ragged quartz carbonate veins was sampled: also barren. To the east (uphill on the spur above camp) various small and large barren quartz-feldspar porphyry sills or dykes or small intrusives were encountered -- mineralization in these (and their margins) proved negligible on inspection and in assay (Z-5).

On the third traverse, which angled northwestward down across glacially fluted, rusty weathering argillites in the first canyon north of camp, samples were taken of both sulphide rich areas and quartz carbonate dilation veinlets to see if gold was being drawn into these minor structures out of the host rock. Again slightly elevated (with respect to estimated background) copper, silver but also slightly elevated gold values were noted (ZX 1,2 & 3).



The volcanics on the ridge between the first and second canyon proved mineralogically uneventful, though forest cover precluded an intensive look on the traverse line in that area.

### C. Sample Key

Name	No.-Cert.	Cu ppm	Ag ppm	Au ppb	Comments
Z-1	0851	6	.1	1	NW qtz. vein by camp, no mineralization
Z-2	0852	67	.2	1	Metallic films - slate
Z-3	0853	43	.3	1	Metallic films - slate
Z-4	0854	9	.1	1	Bull qtz. vn, cliff edge
Z-5	0855	7	.1	2	Qtz & iron dyke
ZX-1	0856	34	.1	1	Contorted, sooty slates, & slightly discol. qtz veinlets, looks barren
ZX-2	0857	44	.3	4	50m north of ZX-1, cont. iron-stained graphitic slate, E-W elongate pale porphyry
ZX-3	0858	42	.3	1	Chip of sooty rusty slate with small included qtz. veinlets.

### D. Conclusions

1. The metallized platy cleavage is worth trying a cyanide or thiourea extraction on to determine whether precious metals would lend themselves to this form of concentration. If so, it would validate exploration for metal enriched sections of the large slate unit.

2. The rusty-weathering contorted argillite of the first canyon (samples ZX-1,2 &3) shows a slight concentration of syngenetic values in minor quartz-carbonate dilation structures: further investigation of this area is warranted.

Respectfully submitted,

*William D. Groves*

W. D. Groves, P.Eng., Ph.D.  
December 16, 1985

## APPENDIX I      WORK COST STATEMENT

Field Personnel:		
W.D. Groves, Ph.D., P.Eng.	Sept 26-27, 1985	
2 days @ \$350/day		\$ 700
A. Harman, Geologist	Sept 26-27, 1985	
2 days @ \$200/day		400
G. Johnson, Assistant	Sept 26-27, 1985	
2 days @ \$200/day		400
Helicopter (Vancouver Island, Stewart base)		
0.9 hrs @ \$616/hr.		555
0.9 hrs @ \$616/hr.		555
Food -- 6 man-days @ \$30/man-day		180
Field supplies		20
Equipment and camp rental -- 2 days @ \$20/day		40
4 X 4 Rental -- 2 days @ \$25/day (all-found)		50
Crew mob-demob: Vancouver-Stewart-Vancouver		
5% of \$2800		140
Assays: Acme Analytical Labs, Vancouver		
8 - Au, Ag, Cu Atomic Absorption (Plus samp. prep)		
8 @ \$12/sample		96
Report Costs:		
Compilation, preparation, maps and report -- W.D. Groves, P.Eng., Ph.D. -- 11/2 days @ \$350/day		525
Draughting -- 6 hrs @ \$15/hr		90
Word processing -- 4 hrs @ \$25/hr		100
Copies, report, topo blow-ups, etc.		40
TOTAL.....		<u>\$3,891</u>

*wdg.*

## APPENDIX II -- CERTIFICATE

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

1. I am a consulting engineer with an office at 200-675 W. Hastings, Vancouver, B.C. under the name of Archaean Resources Corp.
2. I am a graduate of the University of British Columbia with a B.A.Sc. in Geological Engineering (1960) and a Ph.D. in Chemical Engineering (1971). I am also a graduate of the University of Alberta with a B.Sc. in Chemical Engineering.
3. I am a registered Professional Engineer in the Province of British Columbia, #8082.
4. I supervised and carried out assessment work on the mineral claims forming the subject of this report.
5. This report was prepared solely to satisfy assessment work requirements as stipulated by the government of British Columbia.

Dated this 16 of December, 1985 at Vancouver, British Columbia.

*William D. Groves*

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

# APPENDIX III. ASSAY CERTIFICATE

W.P.G.

ACME ANALYTICAL LABORATORIES LTD.

852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6

PHONE 253-3158

## 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. ANALYSIS NiOB EXTRACTION AND GRAPHITE FURNACE BY AA. Fe - NaOH FUSION - SPECIFIC ION ELECTRODE ANALYSIS.  
 - SAMPLE TYPE: P1-2 ROCKS P2-SILTS AU\*\* ANALYSIS BY FA+AA FROM 20 GRAM SAMPLE.

DATE RECEIVED: OCT 21 1985 DATE REPORT MAILED: *Oct 24/85* ASSAYER: *N. Jones* DEAN TOYE OR TOM SAUNDRY. CI

TEUTON RESOURCES FILE # 85-2866

TEUTON RESOURCES

FILE # 85-2866

PAGE 2

SAMPLE#	Cu PPM	Ag PPM	Au* FPB
<i>Z-1</i> 0851	6	.1	1
<i>Z-2</i> 0852	67	.2	1
<i>Z-3</i> 0853	43	.3	1
<i>Z-4</i> 0854	9	.1	1
<i>Z-5</i> 0855	7	.1	2
<i>Zx1</i> 0856	34	.1	1
<i>Zx2</i> 0857	44	.3	4
<i>Zx3</i> 0858	42	.3	1

*W.D.G.*

IFED L.

SAMPLE#	Cu FFM	Ag FFM	Au* FPB
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Thurs Sept 26/85  
10 am.  
Metallic films slats

Z-1 - 0851 Q.V.	6	.1	1 - NW qtz v by comp. no min.
Z-2 - 0852 - SL. MET	67	.2	1 - METALLIC FILMS SLATE
Z-3 - 0853 - SL. MET	43	.3	1 - PLATED SLATE
Z-4 - 0854 Q.V.	9	.1	1 - Qtz v. ch. edge.
Z-5 - 0855 DYKE + Q.	7	.1	2 - qtz + IRON DYKE - 200 m N of comp.

FRI Sept 27/85  
~ 1st Canyon N.  
SLATE

Z-X-1 - 0856 - 1st	34	.1	1 - cont. entry slats + sl. ch. qtz Emb. border of veinlets. qtz looks brown.
Z-X-2 - 0857 - Canyon	44	.3	4 - 50m N of 1st - cont. iron slats graphite il. NEW dyke at prox.
Z-X-3 - 0858 - slat + veinlets.	42	.3	1 - chip sorting entry sl small and p & vein.

INDG.

TEUTON RESOURCES INC.

ARMINIUS 4116 (9)  
SENECA (4115) (9)  
NTS. 104 B/8E

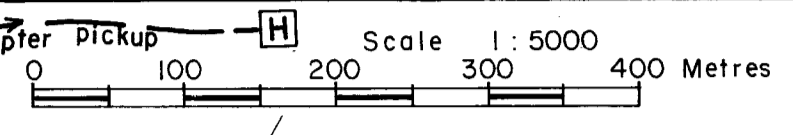
W.D.G.

GEOLOGY, GEOCHEMISTRY,  
TRAVERSE & SAMPLE NOTES

Work by: W.D.G. Date: December 1985  
Drawn by: G.T. Figure No. 3

LEGEND

- x Z-1 Sample point
- Au-SH Copper-gold coloured platey cl. on slate.
- Q.V. quartz vein
- Geochem. Au (ppb), Ag, Cu (ppm)
- Example Z-1 1, .1, 6



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