ARIS SUMMARY SHEET

District Geologist, Smithers | Off Confidential: 94.12.02

ASSESSMENT REPORT 23365 MINING DIVISION: Skeena

PROPERTY:	Gamma			
LOCATION:	LAT	56 21 00	LONG	130 08 00
	UTM	09 6245398	429955	
	NTS	104B08E		

CAMP: 050 Stewart Camp

CLAIM(S): Gamma,Best Bet 18
OPERATOR(S): Teuton Res.
AUTHOR(S): Cremonese, D.M.
REPORT YEAR: 1994, 33 Pages
COMMODITIES
SEARCHED FOR: Gold,Silver
KEYWORDS: Jurassic,Unuk River Formation,Andesites,Tuffs,Shales
WORK
DONE: Geochemical,Physical,Geological
PETR 3 sample(s)
RECL 50.0 ha
ROCK 4 sample(s) ;ME
Map(s) - 1; Scale(s) - 1:5000

ASSESSMENT REPORT
ON
GEOCHEMICAL AND PETROGRAPHIC WORK
ON THE FOLLOWING CLAIM

GAMMA ..... 7048(12)

located

42 KM NORTH-NORTHWEST OF
STEWART, BRITISH COLUMBIA
SKEENA MINING DIVISION

56 degrees 21 minutes latitude
130 degrees 08 minutes longitude

N.T.S. 104B/8E

PROJECT PERIOD: Aug. 22 to Oct. 2, 1993

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

REPORT BY

D. Cremonese, P. Eng.
509-675 W. Hastings
Vancouver, B.C.

Date: April 21, 1994

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1. INTRODUCTION

A. Property, Location, Access and Physiography

The Gamma claim is situated approximately 9km northwest of the airstrip at Tide Lake Flats (just north of the old Granduc Mine concentrator). Access from Stewart, 42 air-kilometers to the south, is by helicopter; alternative access is via the Granduc mining road to the previously mentioned airstrip and thence by helicopter. Access by foot is possible from the terminus of the Granduc road system near the old East Gold Mine, however this would entail a hazardous crossing over a highly crevassed glacier.

The claim area lies between the DC Glacier to the north and the large Frank Mackie Glacier to the south. The south and southeast facing slopes above the Frank Mackie Glacier are quite steep with elevations varying from 800 to 1,900 meters. These slopes moderate at higher elevations, forming a gentle tableland along the rim of an icefield which protrudes into the northwestern quadrant of the claim. The lower, steeper slopes are fairly well exposed and feature a number of fast-running mountain streams incising slot canyons which make contour traversing difficult.

The exploration season is from late June to early October, with higher elevations having a shorter span. In general, winter months are severe with heavy snowfall.

B. Status of Property

Relevant claim information is summarized below:

Name	Record No.	No. of Units	Record Date
Gamma	7048(12)	20	Dec. 2, 1989

Claim location is shown on Fig. 2 after government N.T.S. maps. The claim is owned by Teuton Resources Corp. of Vancouver, British Columbia.

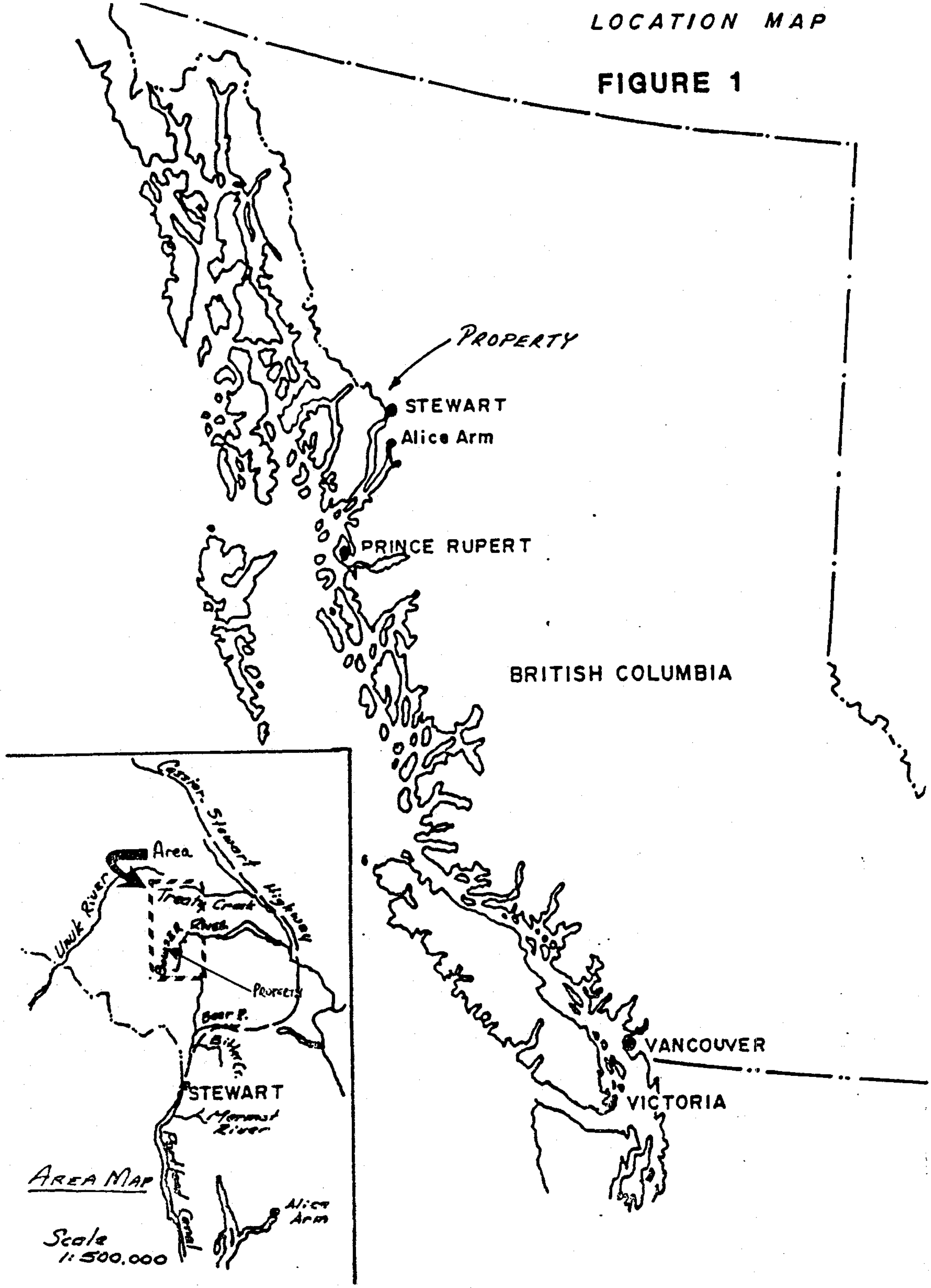
C. History

No specific references to the Gamma property area were uncovered during a review of government and private literature involving exploration in the Stewart region between 1900 and 1965. It is probable that most of the geologically interesting portions of the Gamma property were still under ice and snow during this period.

In 1966/67 the claim area formed part of a regional study undertaken by the B.C. Dept. of Mines and directed by E.W. Grove, P.Eng. The area remained relatively dormant until the early 1980's when rising precious metal prices prompted many exploration

LOCATION MAP

FIGURE 1



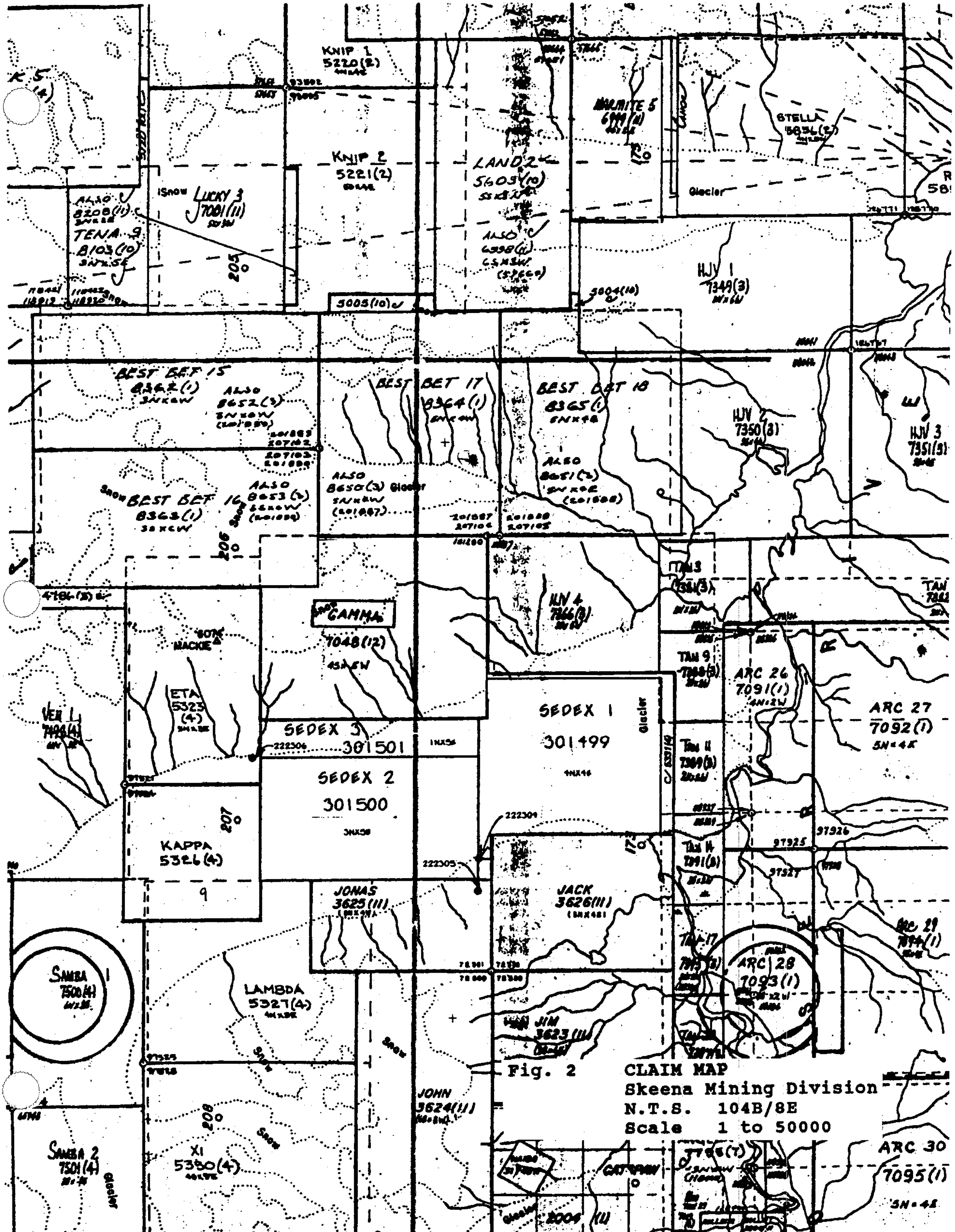


Fig. 2 CLAIM MAP
Skeena Mining Division
N.T.S. 104B/8E
Scale 1 to 50000

companies to initiate new reconnaissance programs. The ground was originally staked by Teuton in 1982 to cover favourable geology between Scottie Gold Mines to the south and the Sulphurets property to the north.

In 1986 the Gamma claim was part of a large parcel of ground optioned by Teuton to Territorial Petroleum Ventures. A limited prospecting and rock geochemical program disclosed a number of significant mineral occurrences including certain argentiferous quartz veins and a pyritized agglomerate carrying anomalous values in gold and arsenic. A small soil geochem grid outlined a prominent silver-gold-lead-zinc-arsenic anomaly roughly in the center of the claim.

In 1987 the claim was under option to Wedgewood Resources. Trenching of the agglomerate returned a best value of 0.118 oz/ton gold over a width of 7m. A small follow-up program carried out the next year was not rewarding, resulting in Wedgewood dropping the option.

A 1991 geochemical soil survey by Teuton personnel located several gold and two prominent silver-lead-zinc anomalies. These soil anomalies were interpreted as conforming to the types of mineralization previously observed on the property. The extent of the anomalies suggested that such mineralization may have been more widespread than previously indicated.

D. References

ALLDRICK, D.J.
1983: Salmon River Project, Stewart, B.C.; in Geological Fieldwork, 1982, BCMEMPR, Paper 1983-1, p.183-195.

1984: Geological Setting of the Precious Metals Deposits in the Stewart Area, Paper 84-1, Geological Fieldwork 1983", BCMEMPR.

1985: Stratigraphy and Petrology of the Stewart Mining Camp (104B/1E), p. 316, Paper 85-1, Geological Fieldwork 1984, BCMEMPR.

1987: Geology and Mineral Deposits of the Salmon River Valley, Stewart Area, NTS 104A and 104B; BCMEMPR, Geological Survey Branch, Open File Map 1987-22.

1988: Detailed Stratigraphy of the Stewart Mining Camp; Paper Given at the Stewart Mineral Exploration Conference, 1990, Stewart, B.C. 14;.

1989: Volcanic Centres in the Stewart Complex in BCMEMPR Geological Fieldwork, 1988, Paper 1989-1.

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1988: 1988 Program on the Gamma-Four J's-Catspaw Claim Groups (Frank Mackie Property) for Wedgewood Resources Ltd., unpublished report.

CREMONESE, D.M.
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DEWONCK, B.
1989: Summary Report on E.L.E. Energy Inc.'s Gamma Property, Private Report.

GROVE, E.W.
1971: Geology and Mineral Deposits of the Stewart Area, B.C., BCMEMPR, Bulletin No. 58.

1982: Unuk River, Salmon River, Anyox Map Areas. Ministry of Energy, Mines and Petroleum Resources, B.C.

1983: Geological Report and Work Proposal on the Teuton Resources Corp. Catspaw Property in the Bowser River Area, Stewart District, Northwestern B.C., Skeena M.D., NTS 104A/5W.

1987: Geology and Mineral Deposits of the Unuk River-Salmon River-Anyox Area, Bulletin 63, BCMEMPR.

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GROVES, W.D. and SHELDRAKE, R.
1984: Assessment Report on Geophysical Work on Five Areas in the Bowser River Area, B.C.; on file with BCMEMPR.

KRUCHKOWSKI, E.R., AND KONKIN, K.
1988: Assessment Report on the Gamma Claim, Stewart, B.C., Skeena Mining Division, NTS 104B/8E; on file with BCMEMPR.

1988: Draft Report -- Catspaw-Gamma Claim Group, Stewart, B.C. Private

SHEARING, R.
1986: Field notes and maps, 1986 work program on the Gamma, John and Jonas claims.

E. Summary of Work Done.

The 1993 work on the Gamma claim was part of a larger program covering several Stewart area properties spanning the period from Aug. 22 to Oct. 2. The field crew consisted of the author and an assistant.

Access to the property was by helicopter from the Vancouver Island Helicopter base alongside the Stewart airstrip. Because of the small scheduled duration of the program it was more economical to shuttle in and out of the property rather than set up a camp (recent government regulations requiring reclamation bonds for even the smallest of camps have changed the logistics of exploring in the Stewart area).

The object of the 1993 work program was to search for extensions of mineralization defined during programs carried out between 1986 and 1991. After stations from the 1991 Fairweather grid were relocated, a "Beep Mat" was used to quickly survey the area over and around the most promising occurrences known on the property. The Beep Mat did not respond to the mineralization so the focus of the work program was switched to sampling. Altogether four rock geochem samples and three petrographic samples were collected at various locations throughout the property.

All rock samples were analyzed at the Pioneer Laboratories facility in New Westminster, B.C. Petrographic reports were prepared by Dr. Northcote of Vancouver Petrographics. The Beep-Mat was rented directly from the manufacturer, GDD Instrumentation Inc. of Ste-Foy, Quebec.

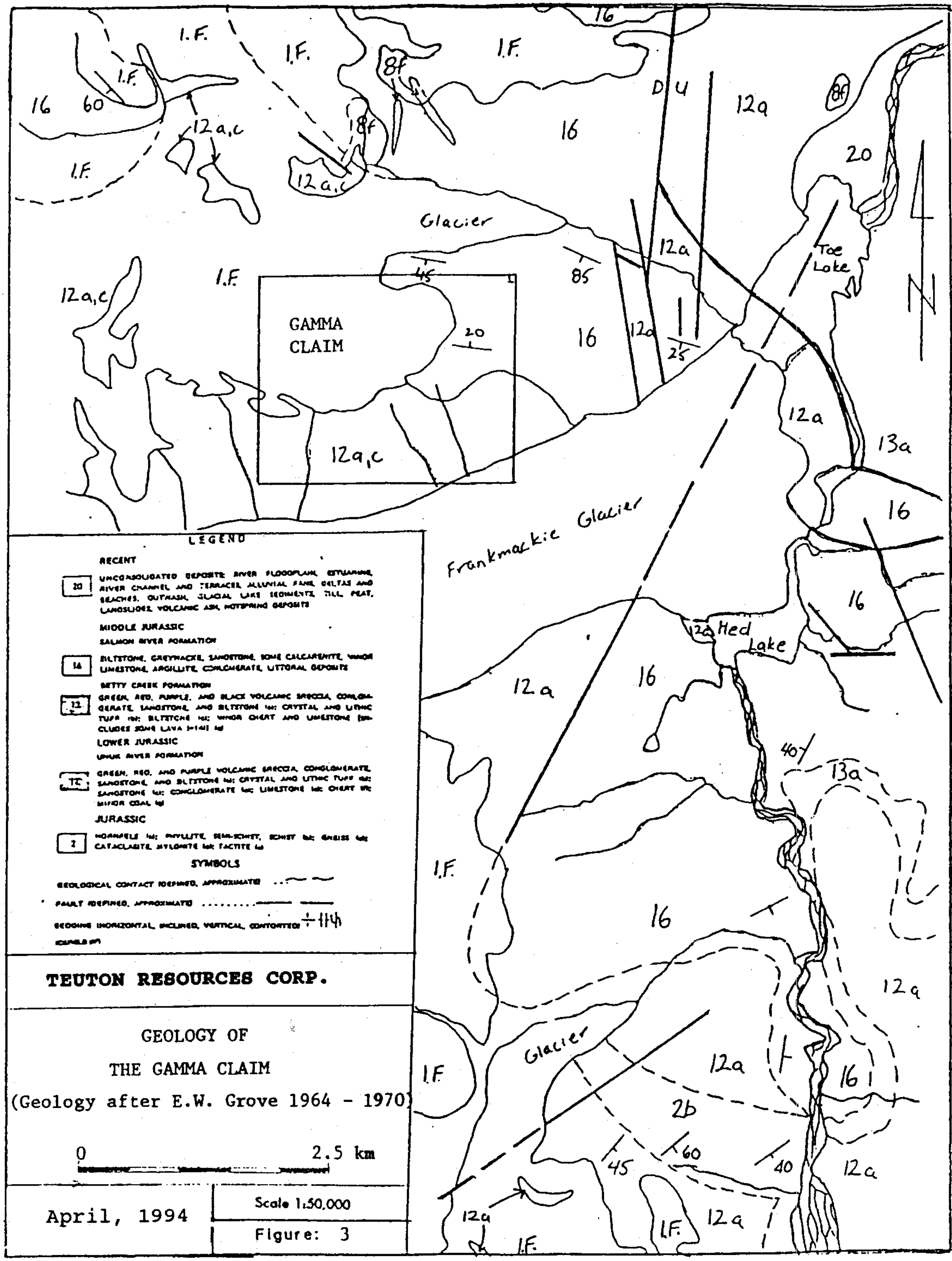
2. TECHNICAL DATA AND INTERPRETATION

A. Regional Geology

The Stewart area is adjacent to the east margin of the Coast Plutonic Complex. Mesozoic volcanic and sedimentary rocks are intruded by Coast granitic rocks ranging in age from early Jurassic to Tertiary and which take the form of large plutons and related dyke swarms.

Mineral deposits in the area are of several styles, and include quartz sulfide veins and replacement systems related principally to repeated Mesozoic volcanism and Tertiary granitic intrusions (Alldrick, 1985).

Oldest rocks in the area are a late Triassic-early Jurassic subaerial andesitic volcanic sequence with intercalated silt-stones, equivalent to Grove's Unuk River Formation. These are overlain by epiclastic and felsic volcanic sequences (Betty Creek Formation--Grove, 1983) of early to middle Jurassic age, and by a



TEUTON RESOURCES CORP.

GEOLOGY OF
THE GAMMA CLAIM
(Geology after E.W. Grove 1964 - 1970)

0 2.5 km

April, 1994

Scale 1:50,000

Figure: 3

sedimentary sequence (Salmon River Formation--Grove, 1983), part of the middle to late Jurassic Bowser assemblage.

These Mesozoic layered rocks are contained in a regional north-trending synclinal structure, modified by northeast and northwest faults.

Intrusive rocks, principally the Summit Lake granodiorite (Alldrick, 1985), are coeval with lower units of the andesitic volcanic sequence. Related to the main intrusion are feldspar porphyry dykes and sills.

Mineral deposits in the vicinity of the Gamma property include Scottie Gold massive pyrrhotite veins in andesitic rocks adjacent to the Summit Lake granodiorite pluton and quartz-carbonate veins containing base and precious metal sulfides in schistose volcanic rocks at the East Gold and Haida (Portland) prospects.

Geology in relation to claim area is shown in Fig. 3.

B. Property Geology and Mineralization

Pyroclastic andesites of the Unuk River Formation outcrop in the western and southern portions of the claim area. Overlying in the northeastern portion of the property are red-weathering, black carbonaceous shales of the Salmon River Formation. The latter are intruded in places by minor unmapped feldspar porphyry dykes and sills. Several gossanous areas are apparent in the andesitic rocks.

Most of the known mineralized occurrences on the property occur within the Fairweather zone (cf. grid area, Fig. 4), located in the southwest corner of the Gamma claim. Prospecting in this area in 1986 revealed several narrow, northwest-trending, vertically dipping, argentiferous quartz-sulfide veins ranging from a few centimeters to 0.6m in width. The veins contained galena, sphalerite and pyrite with silver values associated with massive tetrahedrite. A select grab sample from one of the veins assayed as high as 377 oz/ton silver. Trenching in 1987 of this sample site exposed a 10m strike length of vein averaging 10 to 15 cm in width (best assay 221.64 oz/ton silver across 14 cm).

Work in 1986-87 also uncovered an occurrence described variously as a pyritic, quartz brecciated conglomerate (Kruchkowski and Konkin, 1988) and a sulfide-matrix agglomerate (W.D. Groves, 1988). [Author's note: Recently completed petrographic analyses by Dr. Northcote (cf. Appendix, this report) indicate this rock type is best described as a "polymictic lithic tuff breccia"]. At its southern exposure (on Line 99+00N, cf. Fig. 4-"Au Trench"), sampling by Konkin in 1987 returned a weighted average of 0.118 oz/ton over a 7.15m interval accompanied by elevated arsenic values. Limited trenching of similar mineralization exposed about 125m to the NNW on Line 100+00N returned gold values ranging from 720 to 1045 ppb gold (three grab samples). Continuity of the zone between the exposures was obscured by talus cover.

Follow-up work by Burson (1988) suggested that the 7.15m interval reported by Kruchkowski and Konkin was in fact an extension along strike of an erosional stratiform remnant approximately 1m thick which slumped from beneath a more resistant siltstone or wacke. Further excavation of the "Au Trench" by Burson did not expose new mineralization, and other small pits put in to the northeast and southwest did not encounter bedrock. Talus in the area is of undetermined depth but is at least 1.5m thick. Burson infers that the sulfide mineralization dips moderately to the northwest based on the attitude of the overlying sediments.

The descriptions of property mineralization above have been largely excerpted from Dewonck (1989).

C. Geochemistry--Rock Samples

a. Introduction

During the 1993 program a cursory examination of the area west of the previously discovered, Line 100+00N mineralized occurrences revealed a train of copper-stained angular float. After a number of small test pits were dug through a thin mantle of debris, a narrow vein was eventually uncovered and stripped over a 3m length. A sample from the float train (GM FLT-1) and a grab sample along the stripped exposure (GM 93-1) were taken.

Similar mineralization was noticed in angular float to the west but digging failed to locate source. A sample of the float was taken (GM 93-3).

The "Au Trench" area was also located and a 1m chip sample was taken 1m east of the eastern end of the trench (GM 93-2).

b. Treatment of Data

Geochemical reconnaissance sampling results are presented in this report on Fig. 4 at a scale of 1:5,000. Locations were fixed by reference to the previously established grid. Values for gold, silver, arsenic, copper, lead and zinc are presented in a table inset into Fig. 4.

Because the samples were, for the most part, highly selected and came from different geological settings, not to mention the small size of the sample set, a statistical treatment according to standard methods was deemed impractical.

c. Sample Descriptions

The samples have been described as follows:

GM-93-1 Grab along 3m of strike. Narrow vein breccia, bright green, mariposite stain. 020, dip unknown, possibly shallow. Vein varies from 10 to 20 cm in width. Pyrite with minor tetrahedrite.

GM-93-2 1m chip, 1m east of east end of Au Trench. Agglomerate with sulfides, predominantly fine-grained pyrite in matrix.

GM-93-3 Grab from angular float boulder (subcrop?). Very similar appearance to GM-93-1 except more highly weathered.

GM FLT-1 Small angular float boulder. Vein breccia, pyrite with tetrahedrite.

c. Discussion

The geochemical signature of all four rock samples taken during the program was quite similar. Elevated levels of gold, silver, arsenic, copper, lead and zinc were obtained in all samples. Gold values ranged from 650 to 2300 ppb; silver values were less anomalous with a range of 16.5 to 23.8 ppm.

The base metal values obtained suggest tetrahedrite mineralization with accompanying minor galena and sphalerite. Petrographic analyses (supra) suggest that gold values are associated with tetrahedrite.

D. Petrographic Samples

a. Introduction

As an adjunct to the 1993 assessment program, three samples were collected for petrographic analyses. Each sample was taken as representative of a distinct mineralization type previously defined on the property:

G-1 Taken from northern exposure of so-called sulphide matrix agglomerate (Au values from previous grab samples at this site ranged from 720 to 1045 ppb, arsenic from 675 to 832 ppm).

G-2 Taken from narrow vein breccia occurrence mineralized in places with massive tetrahedrite and carrying high silver and anomalous gold values.

G-3 Taken from small quartz sulfide vein, predominantly mineralized with galena and carrying moderate to high silver values (minor gold).

b. Treatment of data

Petrographic sample location sites are presented in this report as solid squares on Fig. 4, drawn at a scale of 1:5,000. Locations were fixed by reference to the previously established grid.

Petrographic analyses were prepared by Dr. Northcote, P.Eng. of Vancouver Petrographics and are presented in this report in Appendix IV.

c. Discussion

The petrographic analysis of the G-1 sample, from the upper agglomerate exposure, shows that this is more properly termed a "polymictic lithic tuff breccia". Dr. Northcote also describes the G-2 sample as a polymictic lithic tuff breccia tuff but with strong carbonate alteration. Interestingly, a few scattered gold grains were tentatively identified embedded in tetrahedrite in the G-2 sample.

The galena-rich G-3 sample also features multistage brecciation with a hypothesized clinozoisite stage and a quartz stage.

Significantly, no pure silver sulfides or sulfosalts were noted in either of the G-2 and G-3 samples (both of these samples were taken from occurrences which previously had produced silver assays running to 377 oz/ton). It is possible the silver values are bound up with the tetrahedrite and/or galena mineralization.

E. Beep Mat Survey

a. Introduction

A little time was spent with a Beep-Mat criss-crossing previously defined mineralization on Lines 99+00N and 100+00N to see whether the instrument could prove useful in following structures beneath the talus cover. Unfortunately, the Beep Mat did not respond to either the agglomerate, vein breccia or galena vein mineralization defined by previous work.

[Note: in the previous week and on another Stewart area property, the Beep Mat had proven to be an excellent reconnaissance tool for outlining sulfide zone extensions. Apparently it is not possible to rigorously predict in advance whether or not the Beep Mat will respond to a particular type of sulfide occurrence. The Beep Mat is a miniaturized electromagnetic survey instrument that has been likened to a simplified version of the helicopter-borne unicoil. It consists of a unicoil operating at about 2.1 megaHertz inserted in a polyethylene shell with a separate readout module that allows the measurement of the relative value of the conductivity of 3 cubic metres or susceptibility (magnetite content) of 1 cubic metre of any material immediately underlying the instrument (penetrating to a depth of about 1.5m). If conductive and magnetic materials are simultaneously present, it cannot independently measure both parameters, however a new version of the instrument available in 1994 will allow detection of conductors even when they occur in a highly magnetic background. The Beep Map is utilized by dragging it along the ground behind the operator; it is connected to a readout module on the operator's chest by a 2m long cable].

b. Treatment of data

As the Beep Mat did not respond to any of the Gamma mineralization, the survey was quickly terminated and the focus of the assessment program redirected to geochemical and petrographic sampling.

F. Field Procedure and Laboratory Technique

Analysis of rock specimens collected during the 1993 program was carried out at the Pioneer Laboratories facility in New Westminster.

After standard rock sample preparation, the 30 element Inductively Coupled Argon Plasma analysis was initiated by digesting a 0.5 gm sub-sample from each field specimen with 3ml 3-1-2 HCl-HNO3-H20 at 95 deg. C for one hour, followed by dilution to 10 ml with water. The Atomic Absorption measurement for ppb tolerance gold was preceded by subjecting 10 gram samples to standard fire-assay preconcentration techniques to produce silver beads which were subsequently dissolved.

G. Conclusions

Regrettably, the Beep Mat did not respond well to any of the interesting forms of mineralization previously identified on the Gamma property However, follow-up reconnaissance geochemical sampling did result in the discovery of a new vein breccia occurrence carrying anomalous gold values to 2,300 ppb. A float sample of similar material discovered to the east, also containing anomalous gold, possibly signals another vein.

The petrographic samples and subsequent analyses were very useful in defining similarities between forms of mineralization on the property that were previously thought to be much more distinct in nature. It was also useful in identifying multistage brecciation in a lithic tuff host, generally a good scenario for precious metal mineralization.

Although occurrences discovered to date are all of rather limited extent, the property still retains significant potential for hosting a deposit of economic dimensions. More work is warranted. This work would include extension of the Fairweather grid to the north, south and east followed by geological mapping, prospecting, soil geochem surveys and trenching of targets. Prospecting should also be carried out in zones of ablation in the northern portion of the claim along regional strike from the Fairweather area.

Respectfully submitted,

D. Cremonese, P.Eng.
April 21, 1994

APPENDIX I -- WORK COST STATEMENT

Field Personnel--Period Aug. 22 to Oct. 2, 1993:	
D. Cremonese, P. Eng.	
1 day @ $300/day	$300
D. Shilling, Assistant	
1 day @ $150/day	150
Helicopter -- VIH/Stewart Base	
Crew drop-offs/pick-up: Aug. 31, 1993	
1.5 hrs @ $755/hr.	1,132
Food -- 2 man-days @ $30/man-day	60
Personnel: mob/demob (home base to Stewart, return)	
(prorated--5.36% of $2,200)	118
Beep Mat Rental (GDD Instrumentation--Quebec)	
(prorated--5% of total charges of $2,307.95)	115
Assay costs--Pioneer Labs	
Au geochem + 30 elem. ICP + rock sample prep	
4 @ $14.25/sample	57
Petrographic analyses--Vancouver Petrographics	
3 PTS/offcuts/k-spar stains @ $24.25 each	73
Set up and photos	130
Report by Dr. K. Northcote, P.Eng.	315
Assessment Report Costs	
Report and map preparation, compilation and research	
D. Cremonese, P.Eng., 2 days @ $300/day	600
Draughting-- RPM Computer	90
Word Processor - 3 hrs. @ $25/hr.	75
Copies, report, jackets, maps, etc.	35
TOTAL............	**$ 3,250**

Amount Claimed Per Statement of Exploration: $2,650

APPENDIX II - CERTIFICATE

I, Dino M. Cremonese, do hereby certify that:

1. I am a mineral property consultant with an office at Suite 509-675 W. Hastings, Vancouver, B.C.

2. I am a graduate of the University of British Columbia (B.A.Sc. in metallurgical engineering, 1972, and L.L.B., 1979).

3. I am a Professional Engineer registered with the Association of Professional Engineers of the Province of British Columbia as a resident member, #13876.

4. I have practised my profession since 1979.

5. This report is based upon work carried out on the Gamma claim, Skeena Mining Division in August-October of 1993.

6. I am a principal of Teuton Resources Corp., owner of the Gamma claim: this report was prepared solely for satisfying assessment work requirements in accordance with government regulations.

Dated at Vancouver, B.C. this 21st day of April, 1994.

D. Cremonese, P.Eng.

APPENDIX III

ASSAY CERTIFICATES

PIONEER LABORATORIES INC. 5-730 EATON WAY NEW WESTMINSTER, BC CANADA V3M 6J9 TELEPHONE (604)522-3830

GEOCHEMICAL ANALYSIS CERTIFICATE

TEUTON RESOURCES CORP.
Project:
Sample Type: Rocks

Multi-element ICP Analysis - .500 gram sample is digested with 3 ml of aqua regia, diluted to 10 ml with Water. This leach is partial for Mn, Fe, Ca, P, La, Cr, Mg, Ba, Ti, B, W and limited for Na, K and Al. Detection Limit for Au is 3 ppm.
*Au Analysis- 10 gram sample is digested with aqua regia, MIBK extracted, graphite furnace AA finished to 1 ppb detection.

Analyst ____________________
Report No. 9320675
Date: September 08, 1993

ELEMENT	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au*
SAMPLE	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppb
DEL 93-1	3	674	6653	6030	11.3	1	1	2819	9.96	43	12	ND	2	12	51.1	5	10	5	.07	.028	5	61	.03	140	.01	3	.22	.01	.22	11	480
DEL 93-2	9	329	16750	322	26.1	2	1	166	5.61	55	5	ND	2	21	.6	6	19	4	.02	.006	2	128	.01	321	.01	4	.08	.01	.04	40	1840
DEL 93-3	16	594	26538	3207	285.1	2	2	3609	15.39	152	14	3	2	29	17.8	11	590	11	.07	.031	7	55	.02	86	.01	5	.28	.01	.28	132	1810
DEL 93-SD38	40	780	27312	2115	293.5	2	1	617	11.91	108	5	5	2	60	10.1	2	594	4	.01	.014	3	89	.01	100	.01	4	.14	.01	.15	45	17800
DEL 93-GAL	7	358	31273	9011	111.3	2	2	101	3.00	53	5	ND	2	39	82.8	59	94	3	.03	.006	2	79	.01	13	.01	4	.08	.01	.05	31	3350
BR 93-1	3	376	77	18	3.5	11	60	40	16.38	99999	11	7	2	4	.2	355	70	25	.27	.039	2	39	.06	15	.02	3	.33	.01	.07	2	4050
BR 93-2	6	96	41	12	6.8	15	30	32	24.49	99999	23	20	3	1	.2	372	229	12	.01	.018	2	36	.02	10	.01	16	.12	.01	.06	12	12400
BR 93-3	6	375	22	102	19.1	11	101	12	16.35	99999	20	34	2	2	2.4	651	971	5	.09	.023	2	68	.01	13	.01	7	.05	.01	.04	5	28100
BR 93-4	7	2188	8	42	12.1	58	47	272	38.82	862	5	11	2	3	.6	15	108	31	.17	.029	2	6	.21	4	.03	6	.34	.01	.01	1	8600
BR 93-5	2	541	10	62	5.0	2	2	1350	.28	29	5	ND	2	245	.9	3	2	4	32.96	.008	3	3	.08	2	.01	3	.10	.01	.01	1	18
BR 93-6	2	358	22	41	2.2	67	49	111	11.97	272	5	ND	2	63	.4	2	4	11	1.28	.057	2	17	.08	11	.08	2	1.64	.45	.04	1	50
BR 93-7	2	1496	5	38	6.0	28	134	387	39.80	380	5	ND	2	3	.2	2	3	3	.77	.006	2	5	.04	3	.01	2	.09	.01	.01	1	180
BR 93-8	1	1266	15	42	4.4	26	118	424	39.19	24	5	ND	2	2	.5	2	8	7	.31	.013	2	22	.06	7	.01	2	.24	.01	.01	1	125
BR 93-9	2	949	12	44	2.5	27	106	191	25.03	82	5	3	2	46	.5	2	2	34	.88	.043	2	26	.04	19	.05	4	1.99	.30	.07	2	52
BR 93-10	1	16	23	13	.4	4	2	936	.48	29	5	ND	2	275	.2	2	2	3	40.28	.012	2	1	.13	9	.01	2	.31	.02	.01	1	1
BR 93-11	5	135	143	53	1.8	16	7	405	2.32	107	5	ND	2	92	.5	2	3	120	2.18	.137	7	102	1.03	24	.17	2	3.49	.69	.31	1	22
TM 93-1	8	2863	7595	23270	156.9	32	18	1649	10.22	370	5	3	2	139	147.7	631	2	8	2.15	.052	3	31	.73	14	.01	3	.52	.01	.39	30	2100
TM 93-2	5	3502	1392	2226	5.1	4	10	523	6.70	144	5	ND	2	81	27.3	10	2	10	.93	.072	3	52	.13	22	.01	5	.40	.01	.34	1	280
TM 93-3	10	223	63	191	2.5	6	28	1455	6.03	69	5	ND	2	176	.3	41	2	11	2.50	.149	5	39	.52	28	.01	5	.35	.01	.33	1	52
TM 93-4	15	2507	85	250	2.2	5	10	396	5.84	105	5	ND	2	60	1.0	13	2	9	.83	.074	4	33	.11	18	.01	8	.49	.01	.44	1	360
TM 93-5	1	218	405	68	13.8	32	1	41	21.72	2766	5	ND	2	2	.2	128	2	2	.02	.007	2	33	.02	3	.01	5	.11	.01	.08	1	1350
TM 93-6	149	244	46	121	2.2	15	122	459	18.51	130	5	ND	2	34	.2	28	2	10	.75	.053	2	53	.18	8	.01	6	.24	.01	.22	1	210
TM 93-7	5	634	5687	2993	57.2	4	2	35	20.38	521	9	ND	2	23	11.7	354	2	5	.19	.018	2	66	.02	3	.01	7	.15	.01	.12	3	1020
TM 93-LP	2	168	197	192	.8	71	30	2775	5.58	53	11	ND	2	195	.2	7	2	29	4.62	.112	3	44	1.59	92	.01	2	.52	.01	.29	1	80
GM 93-1	3	910	1073	235	16.6	3	3	176	13.09	1602	5	4	2	4	1.0	28	4	25	.07	.046	2	48	.38	12	.01	3	.90	.01	.14	1	2300
GM 93-2	1	2761	1030	3056	24.0	6	15	970	11.44	783	7	ND	2	6	31.6	7	13	50	.23	.047	4	47	.99	21	.01	2	2.17	.01	.09	1	790
GM 93-3	3	4129	393	3479	23.8	4	7	827	9.78	625	5	ND	2	7	35.7	2	5	46	.43	.040	4	60	.87	25	.01	2	1.89	.01	.11	1	650
GM FLT-1	2	2031	286	2932	16.5	6	13	1483	8.43	3309	5	3	2	8	18.8	7	40	86	.36	.060	3	46	1.39	60	.01	2	3.07	.01	.09	1	1060

GAMMA

APPENDIX IV

PETROGRAPHIC ANALYSES

BY

DR. NORTHCOTE, P.ENG.

VANCOUVER PETROGRAPHICS

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509-675 West Hastings Street
Vancouver, B.C. V6B 1N2
Tel 682-3680, Fax 682-3992

JOB #940162
April 20, 1994

Dear Mr. Cremonese,

Re: Samples G-1 to G-3

Petrographic analyses have been completed on three samples marked G-1, G-2, G-3 submitted by Teuton Resources Corp. No details were provided regarding location of the property or the geology.

Geochemical or scanning electron microscope analyses are recommended to confirm presence of gold grains in G-2 as noted in the descriptions and to confirm presence of tetrahedrite/ tennantite in G-2 and in G-3 where distinct colour differences were noted. Photomicrographs were taken to illustrate these and other observations.

Hopefully delivery of this portion of the report will allow you to fulfil your assessment work commitment. The remaining three samples, presumably from other locations, will be completed within the next few days.

Yours very truly,

Ken Northcote

K.E. Northcote, Ph.D., P.Eng. [604] 796-2068

[1] G-1
Polymictic lithic tuff breccia, multistage breccia healed by quartz, mineralized pyrite, sphalerite, chalcopyrite, covellite.

Summary description
Polymictic volcanic fragments, all appear to be of volcanic origin, exhibit a variety of textures including tuff, crystal tuff, lithic tuff breccia and possible flow fragments. Wide range of lithic fragments probably a result of polymictic lithic tuff character of protolith. In addition, lithic fragments show a range of intensity and type of alteration, mainly chloritic, lesser sericitic. Masked to varied degrees by iron-staining, jarosite.

Brecciated, fragments of microcrystalline felted sericite fragments may represent first stage breccia infilling. Subsequent rebrecciation, infilled and partially impregnated/replaced by quartz but leaves vugs. Quartz breccia infilling is mineralized, in approximate order of abundance, by euhedral/subhedral pyrite with interstitial intergrowths of sphalerite, chalcopyrite and sphalerite-chalcopyrite. Secondary covellite is associated with/replaces chalcopyrite.

Subsequent crackle fracturing, earthy hematite with associated iron-stain. Partial leaching of primary sulphides.

Microscopic description: Percentages very approximate because of heterogeneous brecciated nature of rock.

Lithic fragments
Polymictic, 50%, angular (<1.0 mm to several cm in hand specimen). All of volcanic origin showing a variety of textures, lithic tuff breccia and components derived from them including tuff, crystal tuff and possible flow fragments. Varied intensity of chloritic and lesser sericitic alteration.

Brecciation and infilling
First stage
Chlorite; 5-6%, anhedral (microcrystalline to .05 mm). Felted masses as breccia fragments. Also see sericite/chlorite (altered biotite in Alteration section below)

Second stage
Quartz; 35-40%, anhedral (<.01 to >2.0 mm). Interlocking irregular crystals with wide size-range. Dominant breccia infilling, permeates and replaces lithic fragments locally. Subsequent crackling and infilling by earthy hematite, jarosite and associated iron stain.

[1] Continued

Opaques; See Reflected light below

Cavities drusy; some original(?) others a result of leaching of sulphides.

Alteration: Percentages included in host lithic fragments

Chlorite; See first stage brecciation

Sericite/chlorite; 25-30%(?), anhedral (microcrystalline to 0.1 mm). [a] Alteration of tuffaceous groundmass of lithic fragments. [b] Felted wispy masses, discontinuous fracture controlled diffuse networks. Suspect altered biotite hornfels. Preferential iron-stain.

Dusting; 3-4%, microgranular, opaque/semiopaque. Varied abundance in tuffaceous groundmass of adjacent lithic fragments.

Reflected light
Opaques

Pyrite; 5-7%, euhedral/subhedral (<.01 to 1.0 mm). Disseminated crystals, clusters of crystals. Very minor chalcopyrite, sphalerite. In quartz gangue.

Sphalerite; <1%, anhedral (<.05 to 1.0 mm). Irregular grains, isolated in quartz gangue and interstitial to pyrite. Intimate intergrowths with chalcopyrite, unmixing(?) (microblebs to >.05 mm).

Chalcopyrite; <0.5%, anhedral (<.01 to 0.4 mm). Irregular grains.clusters of grains. Isolated in quartz gangue, interstitial to pyrite, unmixing blebs (crystallographic control) in sphalerite.

Covellite; traces(+), anhedral (<.01 to 0.1 mm). Rimming chalcopyrite and as small inclusions in sphalerite. Few small fracture controlled clusters.

Hematite/jarosite/iron-stain; anhedral (microcrystalline to solid microveinlets). Fracture controlled. Discontinuous irregular microfractures.

94 R VIII-1 and 2 Plane and Polarized light Scale 0.1 mm

G-1
Multistage brecciated, polymictic lithic tuff; altered mineralized.

<u>Photomicrographs 1 and 2</u>
Polymictic lithic tuff containing a variety of lithic tuff fragments in a crystal tuff groundmass. Shows varied intensity <u>chlorite/</u> sericite alteration and discontinuous fracture controlled sericite-chlorite networks. Varied intensity semiopaque dusting of lithic fragments. Impregnation by quartz. Preferential iron staining of sericite-chlorite and jarosite/hematite/iron stain in late fractures.

94 R VIII-4 Reflected light

94 R VIII-3 Polarized light
Scale 0.1 mm

G-1
Multistage brecciated, polymictic lithic tuff; altered, mineralized

<u>Photomicrograph 3</u>
Sphalerite containing chalcopyrite blebs, covellite clusters three small irregular chalcopyrite grains in quartz beside coarser pyrite in lower left corner. Addition euhedral pyrite top left quadrant and upper right corner. Second small grain sphalerite lower right.

<u>Photomicrograph 4</u>
As for [1] and [2] but shows a wider variety of smaller lithic tuff fragments. Varied intensity of chloritic and sericitic alteration. Slight quartz replacement.

[2] G-2
Polymictic(?) lithic tuff breccia, multistage rebrecciation, mineralized

Summary description
Composed of altered lithic fragments of tuff with wide size range, more uniform textures and composition than G-1 (but probably a function of size of thin section). Lithic fragments of tuff almost completely obscured by intermixed microcrystalline carbonate and felted sericite.

First stage brecciation has carbonate-rich vein infilling. Second stage brecciation more disruptive with quartz infilling showing a wide range of grain sizes.

Mineralized by tetrahedrite predominantly with lesser associated sphalerite, chalcopyrite, and traces pyrite. Locally has diffuse copper and iron-stain; most conspicuous in hand specimen.

Note: Tetrahedrite poses some question in this section because it appears much lighter in colour than usual, very similar to galena. However it lacks abundance of characteristic cleavage pits and perfect cleavage of galena. Tetrahedrite shows internal reflections when powdered. See G-3 which contains both galena and tetrahedrite.

Microscopic description: Percentages are very approximate.

Lithic fragments (breccia)

Altered tuff; 50-55%, angular fragments (<2 mm to several cms). Almost completely obscured by microcrystalline to very fine intermixed carbonate/sericite alteration with locally one or the other predominating. Shows varied intensity of impregnation and replacement by quartz.

Alteration: Percentages included with host.

Carbonate; 25-30%, anhedral/subhedral (microcrystalline to 0.1 mm). Strong alteration overprint intermixed with sericite, replacing lithic fragments. One or other locally dominates.

Sericite; 20-25%, anhedral (microcrystalline to .05 mm) Strong alteration overprint intermixed with sericite. One or other locally dominates.

Quartz; see breccia matrix, below.

Breccia infilling
Early stage(?)
Carbonate; 10-12%, anhedral/subhedral (0.1 to 0.3 mm). Lithic fragments veined locally by carbonate coarser than alteration component, some intermixing with quartz. Appearance of subsequent brecciation with crystal fragments,

[2] Continued

irregular compact and loose clusters in later stage quartz infilling.

Second stage(?)
Quartz; 25-30%, euhedral/anhedral (<.05 to >2.0 mm). Interlocking crystals of wide size range. Intermixed with lesser carbonate particularly adjacent to margins of lithic fragments. Mineralized by interstitial sulphides.

Reflected light
Tetrahedrite/tennantite; 10-12%, anhedral (<.01 to masses several cm). Very similar appearance to galena in G-3. However, lacks abundance of characteristic wedge-shaped pits (G-3). Very pale greenish-brown. Thin films of covellite on margins and in fractures. Powder has a reddish internal reflection. Associated copper stain. No cleavage planes are opened when scratched by needle.
Tetrahedrite/tennantite requires confirmation by scanning electron microscope analysis.

Sphalerite; <1/5, anhedral (<.01 to >1.0 mm). Very irregular clusters commonly associated with tetrahedrite/tennantite.

Galena; suspected, but not confirmed in thin section. Additional samples would probably reveal it. See G-3.

Gold; six grains noted, anhedral (.0025 to .038 mm)
All as minute grains embedded in tetrahedrite.
[a] .00875 mm
[b] <.0025, .005, .025 mm
[c] .0375 mm
[d] .015 mm
Gold requires confirmation by geochemical analysis or scanning electron microscope analysis.

Chalcopyrite; <<0.5%, anhedral (<.01 to 0.2 mm). As irregular grains concentrated around the margins of tetrahedrite/tennantite. Localized distribution.

Pyrite; traces(+), subhedral (.01 to .07 mm). Widely scattered grains in gangue

Covellite; <<<0.5%, anhedral (microcrystalline) Forms thin films on margins and in microveinlets. Scattered diffuse clots/masses affecting lithic fragments. Associated diffuse, green secondary copper stain.

Iron-stain, associated with covellite and green copper stain. Masks other components.

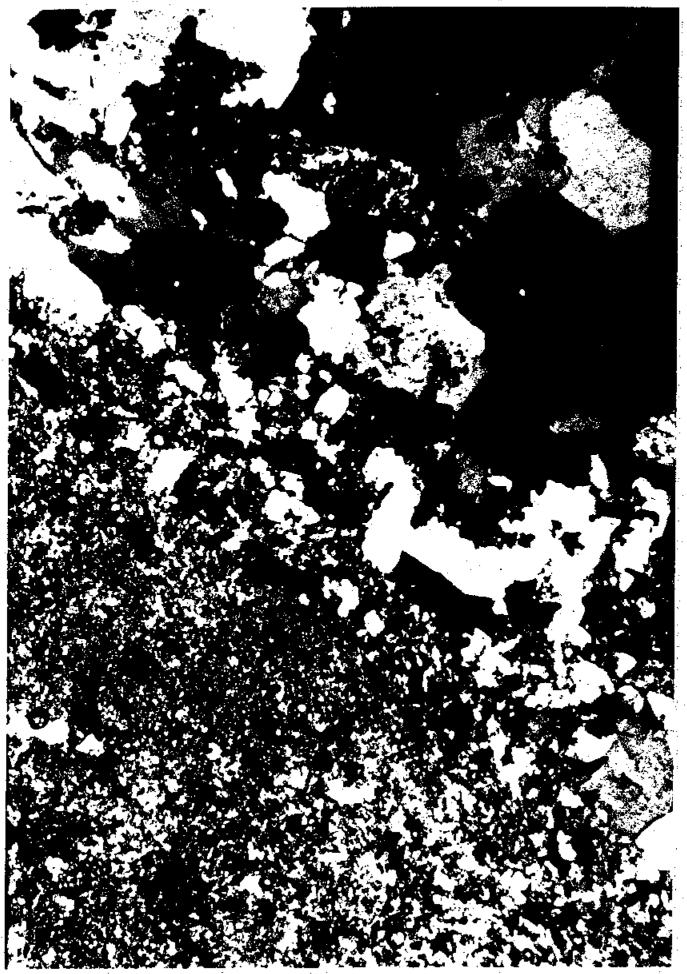
 

94 R VIII-5, 6 Reflected light Scale 0.1 mm

G-2
Mineralization in multistage rebrecciated lithic tuff breccia

<u>Photomicrograph 5</u>
Gold grain (.02 mm) in tetrahedrite. Note blue covellite in microfractures in tetrahedrite.
<u>Photomicrograph 6</u> Gold grain (.015 mm) in tetrahedrite. Note scratch going through tetrahedrite and gold.

N.B. Gold and tennantite/tetrahedrite should be confirmed by scanning electron microscope analysis. Gold would also be confimed by geochemical analysis.



94 R VIII-7, 8   Polarized and Reflected light   Scale 0.1 mm

G-2
Multistage rebrecciated altered lithic tuff breccia

Photomicrograph 7
Intermixed microcrystalline carbonate and sericite alteration masking lithic tuff fragment. Fine crystals of carbonate scattered along margin of lithic clast. Late breccia infilling by euhedral to subhedral quartz.

Photomicrograph 8
Mineralized by tetrahedrite/tennantite. Note: Looks pale/galena-like in photomicrograph and in thin section but powder gives internal reflection and lacks prominent cleavage of galena.

[3] G-3
Mineralized multistage breccia

Summary description
There appears to have been at least two generations of brecciation, infilling, impregnation and replacement.

[a] Quartz stage accompanied by sulphides.
Composed of interlocking quartz crystals showing a broad size range. Void infilling and replacement by sulphides.

[b] Clinozoisite(?) stage.
Quartz breccia contains fracture controlled irregular screens of intensely altered material, which is locally completely obscured by semiopaque dusting. Requires electron microprobe analyses for positive identification of all the component minerals. For the most part appears to be composed of clinozoisite(?) which is obscured by diffuse semiopaque dustings, and secondary copper minerals. The presence of euhedral quartz and irregular sulphide masses and associated secondary copper minerals suggests overlap of quartz, mineralization and clinozoisite events or possibly some of this obscured material is intensely altered protolith remnants.

Sulphides include, in approximate order of abundance: galena, tetrahedrite/tennantite, arsenopyrite, chalcopyrite, secondary covellite and malachite(?).

Microscopic description
Quartz breccia infilling, impregnation, replacement:

Quartz; 18-20%, subhedral/anhedral (<.05 to >3.0 mm).
Interlocking crystals showing wide range of grain-size filled breccia voids. Euhedral quartz occurs in clinozoisite-rich material. Mineralized by interstitial sulphides, void infillings, replacement.

Clinozoisite(?) assemblage: A largely fracture controlled assortment of intricately intermixed and obscured components which require electron microprobe analyses for positive identification. Some of this material may be protolith remnants.

Clinozoisite(?); 6-8%, subhedral (<.01 to 2.0 mm) Irregular fracture controlled screens of interlocking crystals of varied size. Partially to nearly completely obscured by semiopaque dusting. Some of these irregular masses appear to be replaced by quartz and sulphides and may represent altered protolith???? Additional thin sections are required to resolve this apparent age discrepancy.

[Colourless, high (+) R.I., varied extinction angles, low birefringence to first order yellow, no striking anomalous colours but gives biaxial (+) interference figures with fairly large 2V consistent with clinozoisite.]

G-3 (Continued)

Reflected light

Primary sulphides

Galena; 55-60%, anhedral (<.05 to continuous masses). Irregular shaped clusters masses interstitial to and replacing quartz breccia matrix and screens of altered impregnated replaced protolith. [Characteristic cleavage pits, conspicuous cubic cleavage, slightly lighter colour than tetrahedrite/ tennantite.]

Tetrahedrite/tennantite; 2-3%, anhedral (<.05 to >6.0 mm). Irregular masses in galena. When the two are in contact tetrahedrite/tennantite has a distinct but very pale greenish blue/or pale brownish tints. Brownish tint occurs as clusters of disseminated grains with chalcopyrite in altered screens. Powder with needle shows internal reflections. lacks conspicuous cleavage and green secondary copper association. Requires confirmation by scanning electron microscope analysis.

Chalcopyrite; <<0.5%, anhedral (<.01 to 0.5 mm). Irregular grains, clusters of grains mainly in screen material associated with clusters of disseminated very pale brown tint tetrahedrite/tennantite in altered screens.

Arsenopyrite; 3-4%, euhedral (<.01 to 0.4 mm). Disseminated crystals, loose clusters of crystals in galena, quartz and altered protolith(?) screens.

Secondary minerals

Covellite; 3-4%, (microcrystalline) associated with tetrahedrite/tennantite and chalcopyrite. In fractures and at margins of sulphides and diffuse clots in altered screens.

Malachite-like mineral; 2-3%, anhedral (microcrystalline). Diffuse clusters in altered screens.

94 R VIII-10, 11   Reflected and Plane light   Scale 0.1 mm

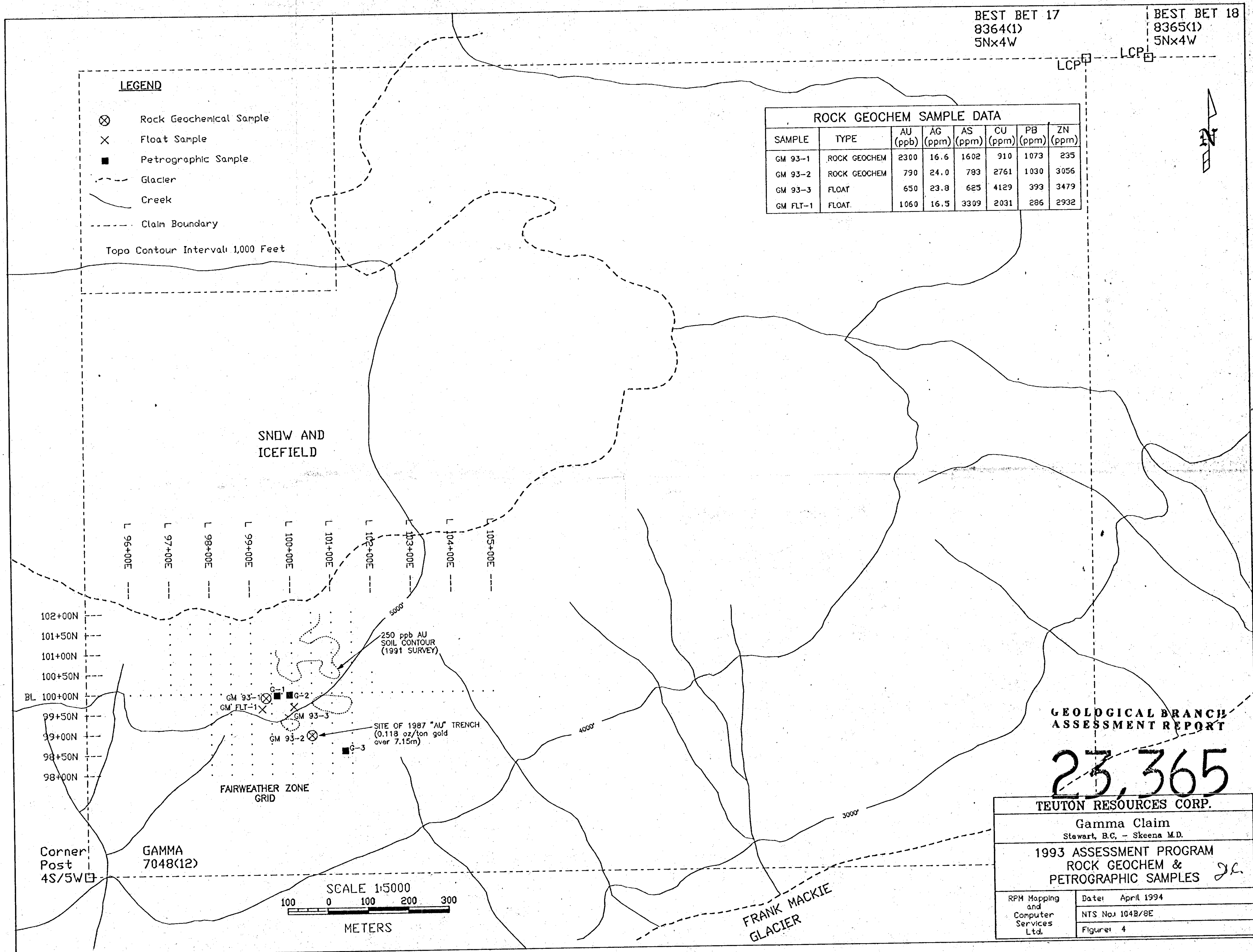
G-3
Multistage breccia

Photomicrograph 10 Euhedral arsenopyrite in galena and quartz gangue.
Photomicrograph 11. Clinozoisite(?) veinlet in altered possible protolith remnant. Mineralized by sulphides, associated secondary malachite and unidentified material. Strong semiopaque dusting.

94 R VIII-9, 12 Reflected light Scale 0.1 mm

G-3
Multistage breccia, mineralized

<u>Photomicrographs 9 and 12</u>
Galena [paler colour] note cleavage and cleavage pits. Tetrahedrite/tennantite(?) slightly darker than galena. Pale blue green tint [top half of 9] but note two distinct colours of tetrahedrite/tennantite in [12]. Pale blue-green [top centre] and brownish grey [bottom] with associated chalcopyrite blebs. Covellite in fractures in all tetrahedrite grains.



ROCK GEOCHEM SAMPLE DATA

SAMPLE	TYPE	AU (ppb)	AG (ppm)	AS (ppm)	CU (ppm)	PB (ppm)	ZN (ppm)
GM 93-1	ROCK GEOCHEM	2300	16.6	1602	910	1073	235
GM 93-2	ROCK GEOCHEM	790	24.0	783	2761	1030	3056
GM 93-3	FLOAT	650	23.8	625	4129	393	3479
GM FLT-1	FLOAT	1060	16.5	3309	2031	286	2932

TEUTON RESOURCES CORP.

Gamma Claim

Stewart, B.C. – Skeena M.D.

1993 ASSESSMENT PROGRAM
ROCK GEOCHEM &
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