### Exploration Work on the Tan

### Claims, 2001

Claims:	TAN 1 TAN 2 TAN 3 TAN 4	record 386619 record 386620 record 386621 record 386622
Mining Division:	Omineca	
NTS Map Sheet:	94 E 11	
Latitude: Longitude:	57°37' N 127°20' W	
Owner of Claims:	Electrum Res	source Corporation
Project Operator:	Electrum Res	source Corporation
Consultant:	New Caledor	ian Geological Consulting
Report by:	Peter Ronnin	g
Date of Report:	02 April 2002	

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### I. Summary and Conclusions

The Tan Claims are located approximately 320 kilometres north of Smithers, B.C., in the northern part of the Toodoggone district. The district is known for porphyry copper-gold deposits and epithermal gold-silver deposits. The area is mountainous and there is no road access to the claims. The Kemess Mine, in operation at present, is located about 75 kilometres southeast of the Tan Claims. In 2001 the field crew used a helicopter based at the mine site to reach the Tan Claims.

The 2001 field program consisted of a one-day visit by two geologists and two prospectors. The geologists visited some of the known showings and a relatively unexplored alteration zone near the northeast corner of the property. They collected nine rock chip samples, five soil samples and one stream sediment sample.

The largest part of the Tan Claims is underlain by mafic volcanics belonging to the upper Triassic Stuhini Group. On the northeastern part of the claims the Stuhini is in fault contact with volcanics ascribed to the lower Jurassic Hazelton Group. In the far northeastern corner of the property the Hazelton is intruded by similar age granitic rocks. There is a poorly-studied zone of sericitization and pyritization near the contact.

In the area now covered by the Tan Claims a number of occurrences of copper sulphides and secondary copper minerals, controlled by brittle shears, have been sporadically explored since 1964. Exploration work has included stream sediment, soil and rock chip sampling, some hand trenching, and 1,130 metres of core drilling.

Rock chip samples collected in 2001 contained copper values in the range 61 ppm to 2.37%.

The prior work done on what is now the Tan Claims should be compiled into a single data base. A better understanding of the possibility for a porphyry deposit in this area would best be gained through geological mapping of the property and its vicinity, with emphasis on alteration and structures.

### II. Introduction

### A. Location and Access

The Tan Claims are located approximately 320 kilometres due north of Smithers, B.C., centred at latitude 57°37' N, 127°20' W on NTS sheet 94E 11. They are in the Omineca Mining Division. Road access is via a network of logging roads from Windy Point, on the John Hart Highway 164 kilometers north of Prince George, B.C. From Windy Point, a 433 kilometre drive, generally northwesterly, on logging roads leads to the Sturdee River Airstrip. The airstrip is no longer maintained, but was still useable in 2001. From the airstrip, the Tan Claims are located 50 kilometres to the north-northwest. They are 4 kilometres northwest of Claw Mountain and 8 kilometres southwest of Mount McNamera on the southwest side of a tributary of the Chukachida River (Northcote, 1983).

### **B.** Physiography

The claims lie in rugged terrain covering valley bottoms as low as 1,300 metres elevation and ridge tops as high as 2,100 metres. Tree line for the largely coniferous forests is at about 1,600 metres.

### **C.** Property Definition

The Tan Claims were staked in May of 2001. In March of 2002 they were all listed as being owned by Electrum Resource Corporation.

### 1. Claims

The claims that make up the Tan property are listed in Table 1 below. They are illustrated on Figure 2 and Figure 3:

AN 1 AN 2	20020517 20020517	20 20	233972 233973
AN 2	20020517	20	233073
		20	200010
AN 3	20020517	18	233974
AN 4	20020517	18	233975
		AN 4 20020517 table was obtained from the	

Table 1: Mineral Claims in the Tan Property

All of these claims are in the Omineca Mining Division.

### 2. History

- 1931: A claim post found in 1968 had this date carved in it, probably the earliest indication of exploration work in the area.
- 1964: Canadian Superior Exploration Limited staked chalcocite-bornite mineralization in fractures in Takla andesite south of the Chukachida River.
- 1965: Canadian Superior Exploration Limited, Canadian Exploration and Asbestos Corporation, in a joint venture, investigated the mineralization by trenching.
- 1968: Kennco Exploration (Western) Ltd. staked the Nama and McNamera claims in this area and carried out a program of prospecting and stream sediment sampling.
- 1973: Union Miniere Explorations and Mining Corporation Ltd. (UMEX) carried out an exploration program that included the collecting of 178 soil samples (Dyson, 1973).
- 1974: UMEX collected a further 86 soil samples, did a ground magnetometer survey, geological mapping, and drilled two core holes for a total of 176 metres (Dyson, 1974a,b).
- 1975: UMEX drilled five core holes for a total of 954 metres (Pauwels and Burgoyne, 1975a, b).
- 1983: A four person crew staked the Copper King and Namera IV claims and conducted a geological prospecting and rock chip sampling program for Western Horizons Resources.
- 1986: The Silver Glance and Silver Bluff claims were staked and the owner-operators did prospecting, rock and soil geochemistry and geological mapping (Gower, 1986).
- 1990: The Silver Glance and Silver Bluff claims were transferred to Electrum Resource Corp. Electrum undertook a program of rock chip and stream sediment sampling (Gower, 1990).
- 1997: The McNamara 1-4 mineral claims were staked following a release of Regional Geochemical Survey data for the 94E map area. A geological reconnaissance was done on September 20 1997 (Carter, 1998).
- 2001: Electrum Resource Corp. staked the Tan Claims and did a one-day reconnaissance of the property (this report).

### 3. Economic Potential

No economically exploitable mineralization is known at present to exist on the Tan Claims. However, widespread copper showings, copper in stream sediments, and visible alteration of intrusive and volcanic rocks indicate a potential for porphyry-style copper mineralization. There is more speculative potential for epithermal gold-silver mineralization, based on government regional stream sediment information (Carter, 1997) and on the property's situation in the northern part of a known precious metal camp.

### **D.** Work Program

On 28 July, 2001, the writer, along with another geologist and two prospectors, spent one day on the Tan Claims. The purpose of the visit was to gain an initial familiarization with the

property and to confirm that the mineralization reported in earlier work (see "History") was indeed situated on the Tan Claims staked in 2001.

The crew visited known showings, and prospected the northeast corner of the property where alteration is evident but less is known about potential mineralization. Work was done on the Tan 1, Tan 2 and Tan 4 claims.

The writer collected six rock chip samples and one stream sediment sample. R. F. Brown collected an additional three rock chip samples and five soil samples.

Access to the property was via helicopter using an aircraft based at the Kemess mine site, about 75 kilometres straight line distance to the southeast of the Tan Claims. The crew was based at an exploration map on the Pil Claims, about 40 kilometres southeast of the Tan Claims.

### III. <u>Geology</u>

### A. Regional Geological Setting

Geology in the region "... is dominated by successive volcano-plutonic arcs which were constructed from Permian time, ... but mainly during the late Triassic and early Jurassic." (Diakow et al, 1993).

Staargaard (1994) summarized the regional geology of the Toodoggone Area:

"The Toodoggone area is situated in the Intermontane Belt, near its eastern margin. The oldest rocks in the region are limestones and rhyolitic tuffs of the Permian Asitka Group. These are overlain by mafic to intermediate flows and related fragmental and sedimentary rocks of the Upper Triassic Takla Group. Overlying these in turn are volcanics of the Lower Jurassic Toodoggone Formation, a complexly intercalated pile of largely subaerial, high potassium, calc-alkaline latite and dacite flows, fragmental rocks and related sediments exceeding 2,200 metres in thickness.

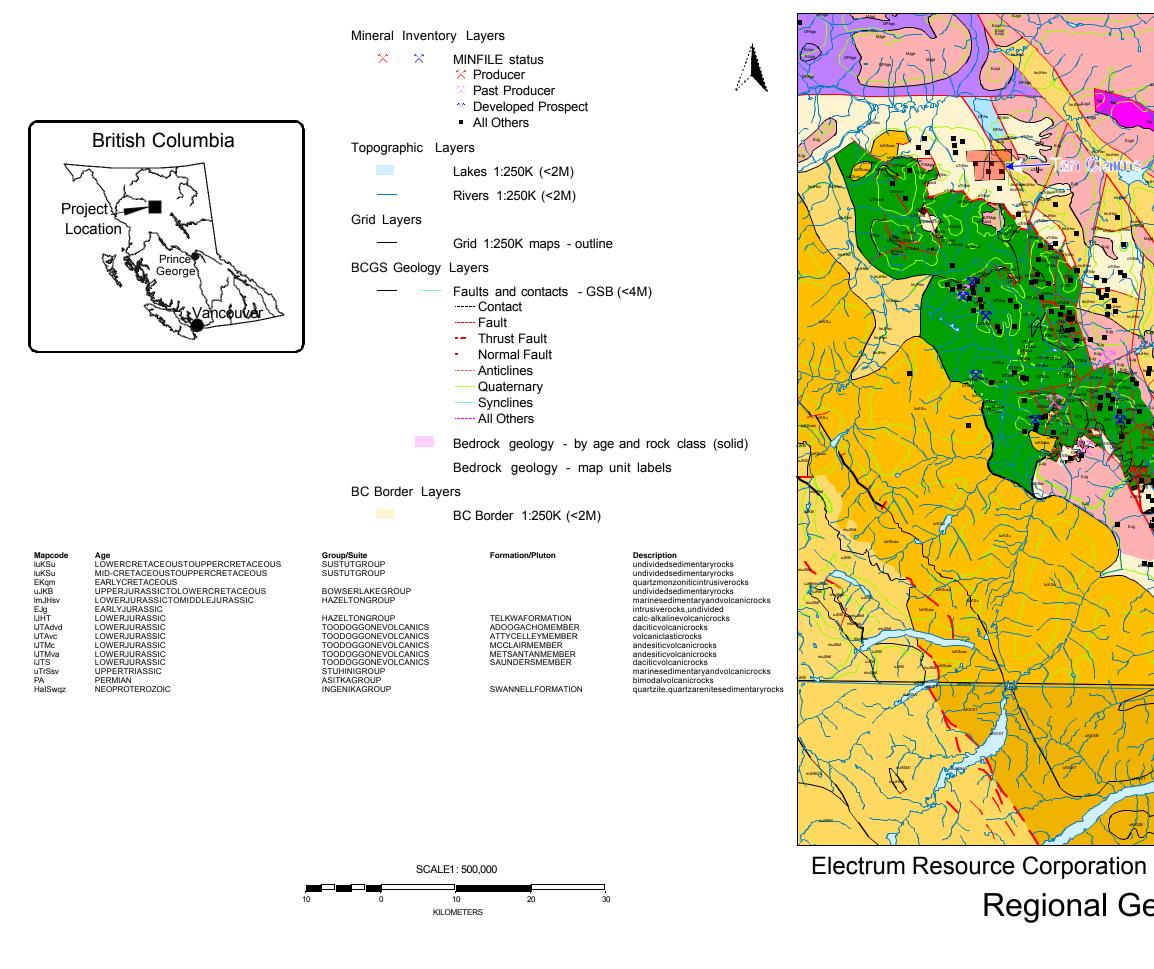
"Two main periods of eruptive activity are evident and the formation is subdivided into six members on the basis of lithology, mineral assemblage, texture and field relationships. A series of comagmatic plutons were emplaced during the lower volcanic cycle and were partly unroofed and eroded during a brief period of uplift before commencement of the upper cycle.

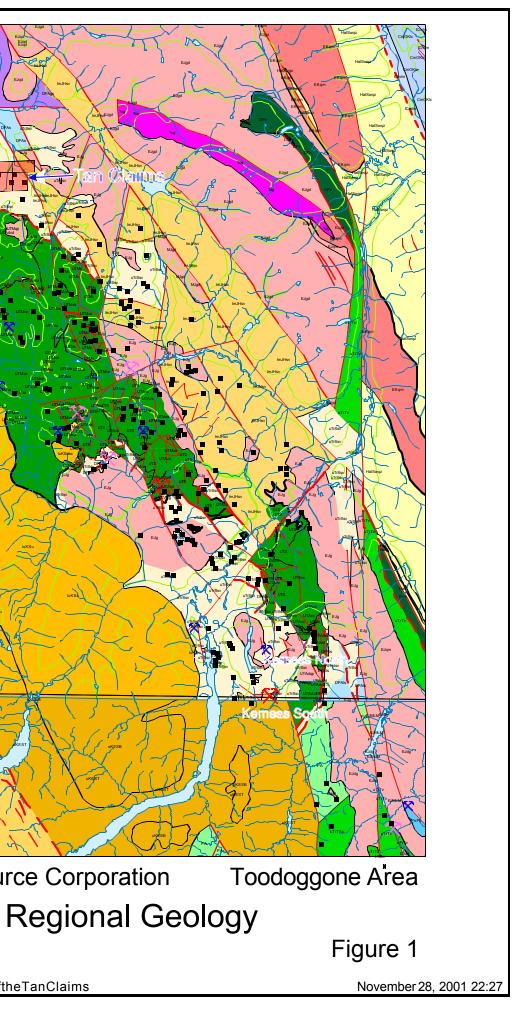
"Extensive and repeated faulting led to the development of an asymmetric collapse feature and served to localize epithermal, vein-type gold-silver mineralization. ... A number of porphyry copper gold deposits and prospects, including the Kemess Mine and the North Kemess deposit, are apparently related to some of the comagmatic (*with the Toodoggone Fm – PR*) plutons situated in the southern portions of the Toodoggone area."

The regional stratigraphy of the Toodoggone Area is summarized in Table 2, which follows.

		c z. Regional c			
Period	Group	Formatio	ion Lithology		
Upper and Lower Cretaceous	Sustut	Brothers Peak Tango Creek		Nonmarine conglomerate, siltstone, shale, sandstone; minor ash-tuff	
			Cassiar Intrusions: Quartz monzonite and granodiorite		
		Major Unconfor	mity		
Lower Cretaceous to Middle Jurassic	Bowser Lake		Marine and nonmarine shale, siltstone and conglomerate		
		Conformable Co	ntact	·	
Middle and Lower Jurassic	Spatsizi			Marine equivalent of the Hazelton Group; shale, siltstone and conglomerate, subordinate fine tuffs	
	Hazelton	Toodoggone		Subaerial andesite to dacite flows and tuffs, rare basalt and rhyolite flows; subordinate volcanic siltstone to conglomerate; rare limestone lenses	
			Black Lake Intrusive Suite: Granodiorite and quartz monzonite		
		Unconformit	y		
Upper Triassic	Takla, Stuhini			Submarine basalt to andesite flows and tuffs, minor limestone and argillite	
	•	Unconformit	у	·	
Lower Permian	Asitka			Limestone, chert, argillite	
	1	Major Terrane Bound	ary Fault		
Cambrian and Proterozoic			·	Siltstone, shale, sandstone, limestone; regionally metamorphosed to greenschist and amphibolite grade	
from Diakow et al., 1993, afte	er Gabrielse et al.,	1977		•	

### **Table 2: Regional Stratigraphy**





### **B.** Mineral Deposits in the District

[Most of the material in this section is extracted from Diakow et al (1993).]

Diakow et al (1993) make the following general statement about mineral deposits in the Toodoggone Region:

"The study area contains several ore deposits and a variety of metal concentrations that can be broadly categorized according to the nature of their occurrence and mode of origin as volcanic-hosted epithermal gold-silver, porphyry copper-molybdenum, skarn and placer gold occurrences"

The epithermal deposits are genetically related to and for the most part hosted within the early Jurassic Toodoggone Volcanics. A significant exception is the Baker Mine which, though of the same general age as the other deposits, is hosted by older Takla Group rocks.

During the 1980's, epithermal gold and silver deposits were the major economic attraction in the district. At present, however, the most important deposit and the only large-scale producer is the Kemess South porphyry copper-gold deposit, at the southern end of the district.

Of the epithermal deposits, the most significant ones are of the adularia-sericite type, as described by Hayba et al (1985) and Heald et al (1987). The three most significant past producers of the district, Lawyers, Chappelle<sup>1</sup> (Baker) and Shasta fit this category.

A group of acid-sulphate epithermal deposits exists in the Toodoggone camp, but it hasn't been as important, in economic terms, as the group of adularia-sericite ones.

Porphyry deposits in the district are related to Early Jurassic calc-alkaline intrusions that are probably co-magmatic with the Toodoggone volcanics. They are hosted by their related intrusions, by Takla volcanics, or by Toodoggone Volcanics. Kemess South, put into production in 1998, is the only producing deposit of this type.

<sup>&</sup>lt;sup>1</sup> This deposit continues to be operated seasonally on a small scale.

Name	Host Rock	Status as of 2001	Reserves plus Production, Jan 92	
Epithermal Gold-Silve	er			
Lawyers dacite & latite of Toodoggone Fm		past producer	661,000 tonnes @ 8.4 g Au/t & 192 g Ag/t	
Baker Mine	Baker Mine basalt & andesite of Takla Group		cer 87,490 tonnes @ 13.7 g Au/t & 273 g Ag/t	
Shasta	dacite & latite of Toodoggone Fm	past producer	106,300 tonnes @ 4.5 g Au/t & 250 g Ag/t	
others	Toodoggone Fm	prospects & minor past production	2,628,855 tonnes @ 2.8 g Au/t	
Porphyry Copper-Go	bld			
Kemess North	early Jurassic gd & qt monz intruding Hazelton & Takla groups	Inferred resource	170,000,000 tonnes @ 0.50 g Au/t & 0.29 % Cu	
Kemess South	early Jurassic gd & qt monz intruding Hazelton & Takla groups	in production	231.7 million tonnes @ 0.62 g Au/t & 0.22 % Cu (1998) (see Error! Reference source not found. for recent reserves)	

### C. Local and Property Geology

The geology presented in Figure 2 and Figure 3 was obtained via download from a British Columbia government internet site, "The Map Place" (<u>http://www.em.gov.bc.ca/mining/geolsurv/MapPlace/default.htm</u>), on 23 March 2002. The downloaded map is regional in scope and does not show details of the local geology. A map of the local geology is not available at present.

Some differences are noted between the geology obtained from the Map Place and that described by earlier workers in the Tan area. The upper Triassic volcanic rocks that Northcote (1983) described as Takla are designated as belonging to the Stuhini Group in the current map. Carter (1998) referred to a prominent gossan in what he called Stuhini volcanic rocks marginal to a fault contact with granitic rocks, near what is now the northeast corner of the Tan Claims. According to the current map, the Stuhini Group is in fault contact with Hazelton volcanics on the northeast side of the Tan Claims. The Hazelton in turn is in contact with granitic rocks.

The present writer found the intrusive and adjacent volcanic rocks along the eastern edge of the Tan 4 claim to be so sericitized and pyritized that the protolith could not be reliably determined in the field. This precluded determining whether the volcanic rocks in contact with the intrusive belong to the Takla Group or the Hazelton Group.

### 4. Lithologic Units

The largest part of the claims area is underlain by Takla or Stuhini volcanics. The following description of the Takla is quoted from Northcote (1983):

"The main rock types are porphyritic andesite flows (and fragmentals) with conspicuous medium to coarse grained plagioclase phenocrysts in a fine-grained to aphanitic matrix.

Flows containing coarse hornblende or augite with or without accompanying plagioclase phenocrysts also occur in the succession. In addition, hematitic flows and tuffs and lesser agglomerates were noted."

Northcote also described local intrusions:

"The volcanic sequence is intruded locally by fine to medium grained seriate to porphyritic syenite dykes and small plugs. In addition dark green to black fine-grained andesitic (?) dykes in varied attitudes are also common."

### 5. Structural Geology

According to Northcote (1983):

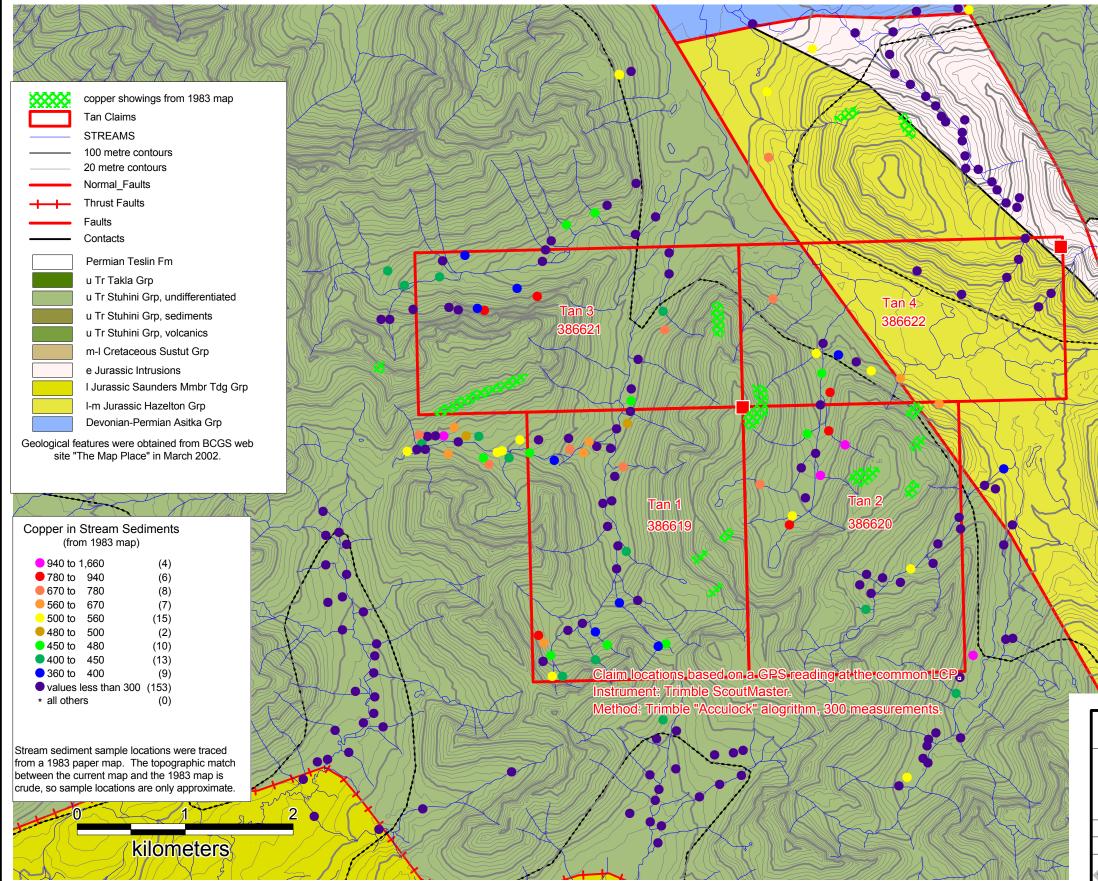
"The volcanic rocks are block faulted and exhibit northerly to easterly strikes with gentle to moderate westerly to northerly dips. Shearing is abundant generally trending easterly or south easterly with steep dips."

### **D.** Mineralization and Alteration

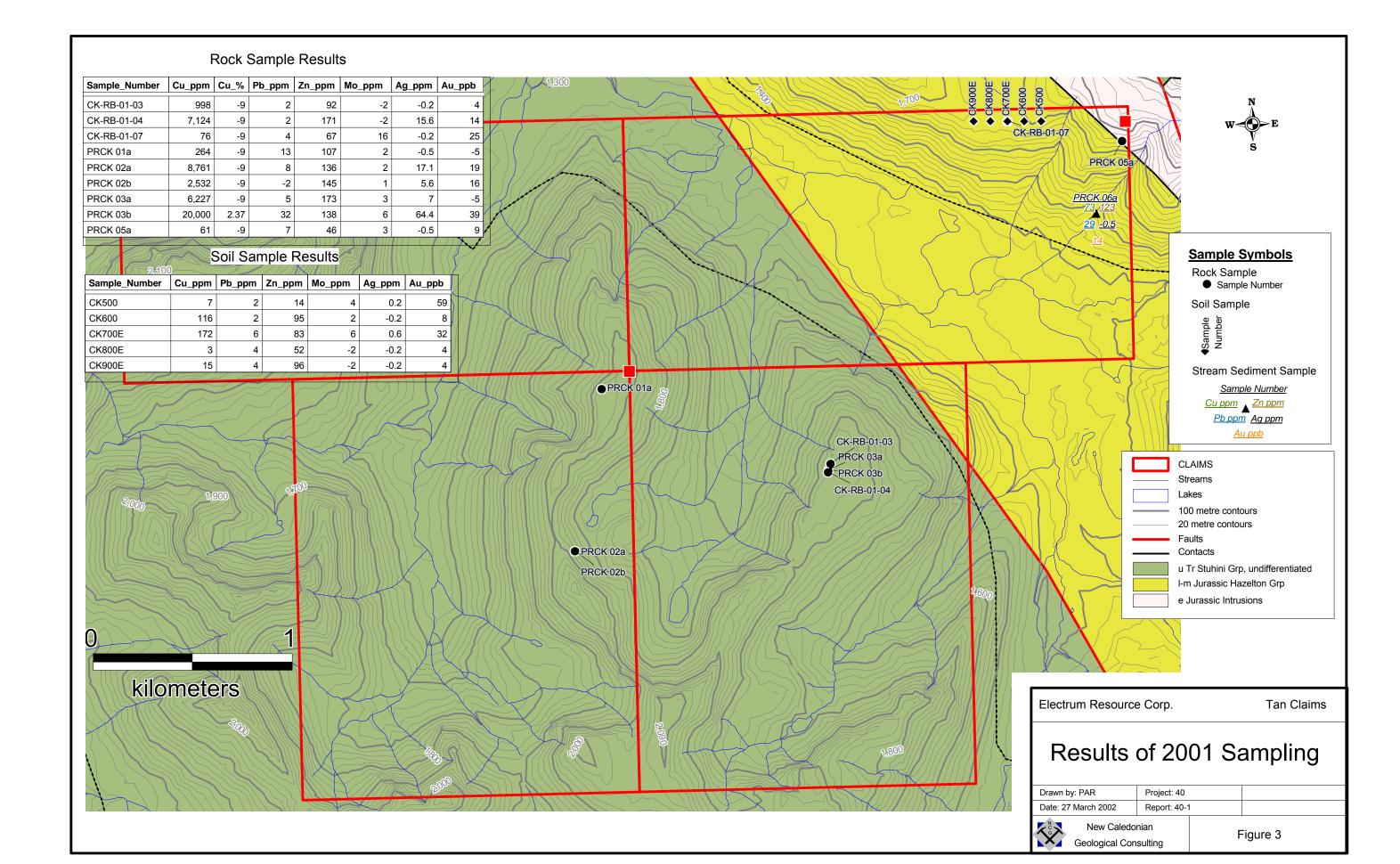
Northcote (1983) described mineralization on the property:

"Chalcocite-bornite-chalcopyrite-pyrite mineralization occurs within many early shear zones associated with hydrothermal alteration minerals. In addition strong disseminated chalcocite, bornite, chalcopyrite, lesser pyrite was noted in altered volcanics at a number of localities. Copper mineralization is evident by abundant secondary malachite and lesser azurite."

Carter (1998) reported a prominent gossan in what he called Stuhini volcanic rocks marginal to a fault contact with granitic rocks, near what is now the northeast corner of the Tan Claims. Carter referred to samples reported by Fox (1992) that contained silver values between 1.1 and 2.3 parts per million. A sample collected from the same area in 1997 contained 21 ppb gold, 0.1 ppm silver, 88 ppm copper, 17 ppm lead and 66 ppm zinc. For the results from a sample collected in 2001, see PRCK 05 on page 14.



	Tan Claims Occal Geology
New Caledonian Geological Consulting	Figure 2



### IV. Results of 2001 Work Program

The one-day field program of 2001 focused on visiting mineral occurrences and alteration zones to confirm their characteristics as described in earlier reports. Descriptions of the rock chip samples collected in 2001 follow. The descriptions encompass the geological observations made during the field program. Appendix 2 contains complete analytical results for all of the rock chip, stream sediment and soil samples collected in 2001, and descriptions of the analytical procedures. The sample locations, and some analytical results, appear on Figure 3.

The existence of widespread copper occurrences, with slightly elevated zinc values, is confirmed. The known copper occurrences are discrete, fracture-controlled entities that would not be individually exploitable and could not be combined for bulk mining. Nevertheless, there is widespread copper, as well as the as-yet poorly-studied zone of pyritization and sericitization near the northeast corner of the property, in the vicinity of sites PRCK 04 (see page 14) and PRCK 05 (see page 14). These offer the speculative possibility that an as-yet undiscovered porphyry-style copper deposit exists in the area.

Two soil samples collected along the northern edge of the Tan 4 claim contained 116 ppm and 172 ppm copper. These moderately high values suggest that the zone of sericite-pyrite alteration near the northeast corner of the property warrants further prospecting.

Sample Number	r: PRC	CK 01a	UTM Easting:			599796
Site Name:	PRC	CK 01	U	TM Northin	g:	6387137
Field Notes: Outcrop on upper edge of steep west facing slope. Massive feldspar porphyry andesite. Piece of float that cannot have fallen more than 5 meters. Open fracture in boulder is lined with vuggy quartz & calcite. Trace malachite visible within quartz.						
Sample Desc	ription:	grab sample	e from bould	er selected f	or malachite	content
C	Cu ppm	Au ppb	Ag ppm	Zn ppm	Pb ppm	Mo ppm
	264	-5	-0.5	107	13	2
Sample Numb	ber: <u>PRC</u>	CK 02a	U.	TM Easting:		599638
Site Name:	PRC	CK 02	UTM Northing:			6386172
Field Notes:	Country	rock is ande	site, variably	/ feldspar ph	yric. Malachi	ully to this point. ite is concentrated in see PRCK 02a)
	a few pieces that show evidence of chloritic brittle shear. (see PRCK 02a) At the base of a cliff at the top of the gulley there is a copper-enriched fracture zone. Visible malachite is confined to a pocket about 10 cms wide by 20 cms along the trend of the fracture zone. The fracture zone is about a meter wide and trends roughly up the fall line.					

Helicopter schedule limited time for sampling and description.

•		talus slope	llus slope			c, concercac	
	Cu ppm	Au ppb	Ag ppm	Zn ppm	Pb ppm	Мо ррт	
	8761	3761 19	17.1	136	8	2	
Sample Numbe	er: <u>PRC</u>	K 02b	U	TM Easting:		599638	
Site Name:	PRC	K 02	L	JTM Northin	6386172		
Field Notes	: Same as	for PRCK (	)2a				
Sample Des	cription:	grab of chip	os from brittle	e fracture zo	ne, selected	for visible malachite	
	Cu ppm	Au ppb	Ag ppm	Zn ppm	Pb ppm	Мо ррт	
	2532	16	5.6	145	-2	1	
Sample Numbe	er: <u>PRC</u>	CK 03a	U	TM Easting:		601143	
Site Name:	PRC	K 03	ι	JTM Northin	g:	6386653	
Field Notes	Two old trenches located on the upper edge of the steep valley slope, eastwards across a valley from PRCK 02.						
	From the GPS location, one trench trends $166^{\circ}$ for ~ 21 metres. The other trends $242^{\circ}$ for ~ 10 metres.						
	The mineralization takes the form of seams and fracture fillings and sub- centimetric quartz veinlets containing sub-centimetric blebs of bornite with mino disseminated chalcopyrite.						
	A sub-horizontal attitude is common for mineralized fractures and veinlets, but the structural control on the mineralization is not understood.						
	The host volcanics are variably feldpsar phyric andesites. They are chloritized and may be bleached due to sericite alteration within a few centimetres of the aquartz veinlets.						
	The thicker quartz veinlets are vuggy with terminated quartz crystals growing into the vugs. Some vugs are lined or filled with bornite $\pm$ goethite after some sulphide.						
	One boulder in the bottom of the 166° trench contains what looks like a vein $\pm$ 10 centimetres wide of finely crystalline pink potassium feldspar. The vein is fractured and laced with veinlets of quartz $\pm$ bornite $\pm$ chalcopyrite $\pm$ malachit Copper minerals make up about 5% of the boulder. The vein wall for at least centimetres into the rock contains incipient potassium feldspar alteration $\pm$ chlorite $\pm$ sericite. Malachite is disseminated in the wall rock within the boulde which before being broken for sampling was about 30 centimetres across. PRCK 03b is collected from this boulder.						

Sample Description: collection of pieces of mineralized float from talus, collected while climbing talus slope **Sample Description:** series of chips collected along the full length of the 242° trench, spaced at 40 centimetre intervals to minimize bias and selectivity in sample.

	Cu ppm	Au ppb	Ag ppm	Zn ppm	Pb ppm	Мо ррт
	6227	-5	7	173	5	3
Sample Nur	nber: <u>PRC</u>	<u>X 03b</u>	U	TM Easting:		601143
Site Name:	PRC	CK 03	U	TM Northing	g:	6386653
Field Notes	: Same as	for PRCK (	)3a			
Sample Des		selected gra d in Field No		f well minera	lized materia	l from boulder
	Cu %	Au ppb	Ag ppm	Zn ppm	Pb ppm	Mo ppm
	2.37%	39	64.4	138	32	6
Sample Numb	er: <u>PRC</u>	CK 04a	U.	TM Easting:		602910
Site Name:	PRC	CK 04	U	TM Northing	g:	6388710
Field Notes	medium LCP, the	crystalline, v	weakly magr sericitized an	netic syenite.	On the slop	country rock here is e below (south) of t ls have been
			ery finely dis ellow Fe oxid		Weathered s	surfaces are coated
Sample Des	scription:	random gra	b of chips of	pyritized roo	ck within a 5	metre radius.
	-	Au ppb				
	Cu ppm	Au ppp	Ag ppm	Zn ppm	Pb ppm	Mo ppm
	••		011		••	Mo ppm I. Not analyzed)
Sample Nur	(Sample ca	ached in fiel	d for later pi		ever retrieved	
	(Sample ca	ached in fiel	d for later pie	ck-up and ne	ever retrieved	I. Not analyzed)
Sample Nur Site Name:	(Sample ca nber: <u>PRC</u> PRC s: Part way sericitize	ached in fiel <u>CK 05a</u> CK 05	d for later pie U U lope south of zed that the p	ck-up and ne TM Easting: TM Northin f the TAN 5 I	ever retrieved	I. Not analyzed) 602887
Sample Nur Site Name:	(Sample ca <b>nber:</b> <u>PRC</u> PRC S: Part way sericitize same sy	ached in fiel CK 05a CK 05 down the s d and pyritiz enite as at F	lope south of zed that the p PRCK 04.	ck-up and ne TM Easting: TM Northin f the TAN 5 I protolith is ur	ever retrieved	I. Not analyzed) 602887 6388607 cone of rock so h it was probably th

<sup>&</sup>lt;sup>2</sup> The Tan 5 claim was not recorded. The reference to the LCP is used as it may help others to locate the sample site in the field.

Sample Description:	grab sample of chips randomly collected within 5 metre radius of
nominal	site.

	Cu ppm	Au ppb	Ag ppm	Zn ppm	Pb ppm	Mo ppm
	61	9	-0.5	46	7	3
Sample Numbe	er: <u>PRC</u>	K 06a	U	TM Easting	:	602726
Site Name:	PRC	K 06	ι	JTM Northin	g:	6388245
Field Notes						h a spot where the diment sample.
			nere is no wa able for sam		resent but rec	ent deposits of sand
		is ~ 3 metro Slope is ~		ulders up to	1 metre of Ta	kla volcanics and
	The sand	ly sediment	t is damp.			
Sample Des	cription:	convention	al stream se	diment samp	ole.	
	Cu ppm	Au ppb	Ag ppm	Zn ppm	Pb ppm	Мо ррт
	73	14	-0.5	123	29	11
Sample Numbe Site Name: Field Notes	CK-F : Cache of		L xes. Core is		<b>g:</b> phyry andesi	601156 6386691 te, mostly complete ow weak epidote
			specks of ch		s conceled an	
Sample Des	cription:	samples fro	om core boxe	es		
	Cu	Au	Ag	Zn ppm	Pb ppm	Мо ррт
	998	4	-0.2	92	2	-2
Sample Numbe	er: CK-I	RB-01-04	U	TM Easting	:	601141
Site Name:	CK-F	RB-01-04	ι	ITM Northin	g:	6386640
Field Notes					steep and sha (<10cm), ma	allow dipping some alachite and

Sample Description: grab sample from trench at cliff edge

	Cu	Au	Ag	Zn ppm	Pb ppm	Mo ppm
	7124	14	15.6	171	2	-2
Sample Numbe	r: CK-RE	8-01-07	U	TM Easting:		602206
Site Name:	CK-RB	8-01-07	U	TM Northing	j:	6388725
Field Notes:						all o/c at same s py., fractures with
Sample Desc	<b>ription:</b> gr	ab sample				
	Cu	Au	Ag	Zn ppm	Pb ppm	Mo ppm
	76	25	-0.2	67	4	16

### V. <u>Recommendations</u>

Much of the prior work on what is now the Tan property has not yet been compiled into a single data base. This should be done.

A better understanding of the possibility for a porphyry deposit in this area would best be gained through geological mapping of the property and its vicinity. Emphasis should be placed on the distribution and zoning of alteration and mineralization. Structures should be looked at in terms of how they may have affected the distribution of alteration and mineralization.

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1990: Report on Exploration During 1990 on the Silver Bluff & Silver Glance Claims. Consultants report for Electrum Resource Corporation, AR 20729

Northcote, K.E.

1983: Report on Exploration During 1983 on the Copper King – Namera IV Property. Consultant's report for Western Horizons and Redfern-Sutton Joint Venture.

Pauwels, Andre M. and Burgoyne, Alfred A.

1975: Assessment Report on Diamond Drilling on Claw # 5, Claw # 8 Mineral Claims. Inhouse report for Union Miniere Explorations and Mining Corporation Ltd. Assessment Report 5635

Pauwels, Andre M. and Burgoyne, Alfred A.

1975: Assessment Report on Diamond Drilling on Claw # 6, Claw # 7, Claw # 8 Mineral Claims. In-house report for Union Miniere Explorations and Mining Corporation Ltd. Assessment Report 5657

Staargaard, C.F.

1994: Geochemical Sampling and Reconnaissance Geology of the Pil 1-13 Claims, Toodoggone Area, British Columbia. Consultant's report for Electrum Resource Corporation.

### VII. Statement of Qualifications

I, Peter Arthur Ronning, of 1450 Davidson Road, Langdale, B.C., hereby certify that:

- 1. I am a consulting geological engineer, doing business under the registered name New Caledonian Geological Consulting. My business address is 1450 Davidson Road, Langdale, B.C., V0N 1V6.
- 2. I am a member in good standing of the Association of Professional Engineers and Geoscientists of the Province of British Columbia.
- 3. I am a graduate of the University of British Columbia in geological engineering, with the degree of B.A.Sc. granted in 1973.
- 4. I hold the degree of M.Sc. (applied) in geology from Queen's University in Kingston, Ontario, granted in 1983.
- 5. I have worked as a geologist and latterly as a geological engineer in the field of mineral exploration since 1973.
- 6. I am the author of the report entitled " Exploration Work on the Tan Claims, 2001" and dated 2 April 2002.
- 7. I participated in the work described in this report.
- 8. I hold no beneficial interest in the mineral claims which are the subject of this report, nor in any corporation or other entity whose value could reasonably be expected to be affected by the conclusions expressed herein.
- 9. I authorize Electrum Resource Corporation to use this report, but only in its entire and unabridged form, for any lawful purpose.

### "P. Ronning"

Peter A. Ronning, P.Eng.

Tan Claims	2001		
Statement of Explo	ration Costs		
Item	Quantity	Rate	Cost
Professional Fees, Field Work			
P. A. Ronning, P.Eng.	1.0 day(s)	\$500.00 /day	\$500.00
R. F. Brown, P.Eng.	1.0 day(s)	\$400.00 /day	\$400.00
Room and board in Pil field camp	2.0 man day(s)	\$60.00 /man day	\$120.00
Travel Costs, apportioned by estimation			
P.A. Ronning			\$100.00
R.F. Brown			\$100.00
Canadian Helicopters; charter	2.5 hour(s)	\$880.00 /hour	\$2,200.00
Expendable field supplies, estimated			\$100.00
Bondar Clegg & Company, analyses			
(costs determined from catalogue)			
rock sample preparation (code PCSP)	6	\$5.50 each	\$33.00
stream sed sample preparation (codes PSIR & PDRY)	1	\$3.35 each	\$3.35
gold analyses (code FA35) plus multi-element ICP	7	\$18.60 each	\$130.20
copper by multi-acid digestion & AA	1	\$11.40 each	\$11.40
Assayers Canada, analyses			
(costs determined from catalogue)			
rock sample preparation	3	\$5.25 each	\$15.75
soil sample preparation	5	\$1.80 each	\$9.00
gold analyses plus multi-element ICP	8	\$16.50 each	\$132.00
Drafting (P. A. Ronning, P.Eng.)			
prepare topographic base map	0.5 man day(s)	\$500.00 /day	\$250.00
trace 1983 geochem data onto new topo base	0.5 man day(s)	\$500.00 /day	\$250.00
prepare maps for report	1.5 man day(s)	\$500.00 /day	\$750.00
Report Preparation, P.A. Ronning, P.Eng.	1.5 man day(s)	\$500.00 /day	\$750.00
Total non-tax Cost			\$5,854.70
GST			\$409.83
Total Cost			\$6,264.53

### Appendix 1: Statement of Costs

### **Appendix 2: Analytical Results and Analytical Procedures**

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Boudar Clegg Canada Limited, 130 Pemherton Avenue, North Vancouver, BC, V7P 2RS, (604) 985-0681

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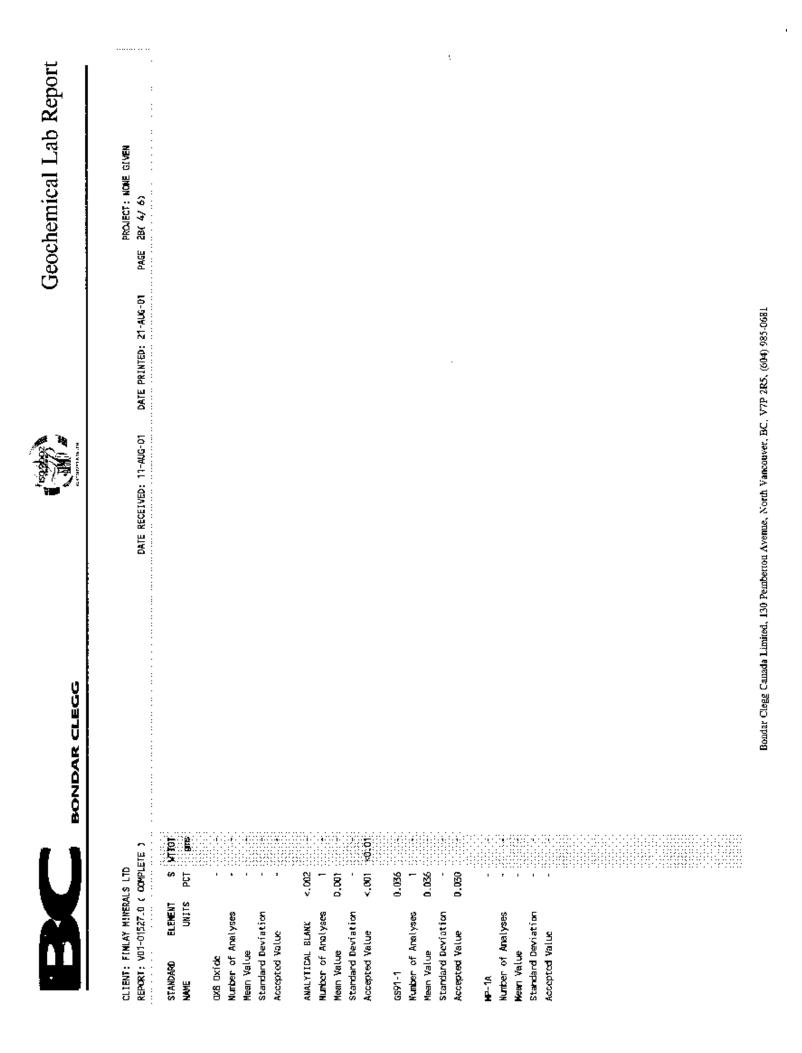




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NUMBER - -: This report must not be reproduced except in full. The data presented in this . . . . . . . . . . . . . SAMPLE PREPARATIONS report is specific to those samples identified under "Sample Number" and is applicable only to the samples as received expressed on a dry basis unices otherwise indicated INVOIDE TO: MR. JOHN BARAKSA Ŗ DRYING DRY, SIEVE . . NUMBER DATE PRIMTED: 27-AUG-01 -: ..... Due to digestion limitations based upon sample mineralization, IC30 results for SIZE FRACTIONS ŝ SUBMITTED BY: P. RONNING DATE RECEIVED: 10-AUG-01 REPORT COPIES TO: MR. JOHN BARAKSA MR. PETER RONNING Al, Ba and Cr may vary. MMBER REFERENCE T STREAM SED, SILT SAMPLE TYPES REMARKS: . PLASMA 30g Fire Assay - AA INCUC. COUP. PLASMA PLASMA PLASMA PLASM PLASMA **MISPI** PLASMA PLASNA PLASH PLASH PLASIG PLASH PLASMA PLASMA PLASMA PLASMA PLASMA PLASMA PLASHA PLASMA PLASMA COUP. PLASM PLASE PLASMA PLASE COUP. COP. 3 3 8 -100 000 Sup. -000 000 <u>8</u> GUP. 8 9 9 9 9 500-<u>8</u> . 000 ਤਿੰ , 100 8 -198 8 <u>.</u> 98 . 100 100 100 COUP. - 400 - 400 8 38 8 8 88 ĝ 1<u>1</u>100 INDUC. INDUC. INDUC. INDUC: NDUC. INDUC. INDUC. INDUC. INDUC. INDUC. CNDUC. INDUC. NDUC. NDUC, INDUC. Non: NOUC. NDUC. CNDUC. TNDUC. CNDUC. INDEC. CIDAC. CNDUC. COC. INDUC. INDUC. INDUC. NOUC: NDUC. INDUC. ENDUC: Fire Assay of 309 HF-KN03-NCL04-HCL HF-KN03-NCL04-HCL HF-KN03-NCL04-HCL HF-KN03-HCL04-HCL HF-KN03-HCL04-HCL HF-HING-HCLO4-HCL HF-HING3-HCLO4-HCL HF-HING3-HCLO4-HCL HF-HING3-KCLO4-HCL HF-HING3-KCLO4-HCL HF-HING3-KCLO4-HCL HF-HN03-HCL04-HCL HF-HN03-HCL04-HCL HF-HN03-HCL04-HCL HF-HN03-HCL04-HCL HF-HN03-HCL04-HCL HF-HN03-HCL04-HCL НР- нид3-нсцс4-нсц НF- нид3-нсцс4-нсц НF- нид3-нсцс4-нсц НF- нид3-нсцс4-нсц HF- нид3-нсцс4-нсц HF- нид3-нсцс4-нсц HF-HN03-HCL04-HCL HF-HN03-HCL04-HCL HF-HN03-HCL04-HCL HF-HN03-HCL04-HCL HF-HN03-HCL04-HCL HF-HN03-HCL04-HCL HF-HN03-HCL04-HCL HF - HNO3 - HCLO4 - HCL HF - HNO3 - HCLO4 - HCL HF-HNO3-HCLO4-HCL HF-HNO3-HCLO4-HCL HF-HND3-HCLO4-HCL EXTRACT JON BONDAR CLEGG 20 PPM 20 PPM 7 0 2 7 PPM 7 0 DEFECTION C B B B B B C LOLER ۍ م 2 in in ŝ 0.0 ŝ 00000 0.01 0.002 LC1 AUMBER OF ANALYSES REPORT: V01-01515.0 ( COMPLETE ) CLIENT: FINLAY MINERALS LTD - - - - -55555 - 1030 - 1030 - 1030 Te - 1030 Ba - 1030 Cr - 1030 V - 1030 K - 1030 Nb - 1030 Sr - 1030 Y - 1030 1000 1000 1000 20 8 <u>8</u> <u> ទី ទី ទី</u> 1030 <u>1</u> 2 2 - 1030 u - 1030 . 21 - 2 ı. . . • . . . ī ı ۶ , 0 ELEMENT 2222222 2882**2**8 Ŧ មេខឹមិន £ PROVECT: NONE GIVEN föt 11 As 12 Sb 7 Wi 3 3 ŝ និទីស្ទីល នៃទីស្ទីនីទីនី と見かえなみ と見なれたの £ ä æ ¢ 2 2 ⊉ date Approved 010824

Bowlar Clerge Cansda Limited, 130 Pemberton Avenue, North Vancouver, BC. V7P 2R5, (604) 985-0681

Geochemical Lab Report



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## Rock Chip and Soil Sample Results from Assayers Canada Ltd.

### **Rock Chip Samples**

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Certificate Sample Au Hg Ag Number Number ppb ppm These results were received in electronic form. The certificate numbers may be verified with Assayers Canada Ltd.





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### **Procedure Summary:**

Barium Geochem

Parameter(s) Analyzed:

Barium concentration, ppm

### **Procedure:**

- 0.2 grams of sample is mixed with NaCO3 and NaOH
- Fuse at 550°C for 10 minutes.
- Add 10 ml of de-ionized water, and allow to leach overnight.
- Filter. Discard filtrate
- Wash residue with 1:1 HCl, collecting the solution
- Read on ICP-AES.



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### **Procedure Summary:**

Gold (Au) Geochemical Analysis - 15 gram

### Element(s) Analyzed:

Gold (Au)

### **Procedure:**

15g subsamples are fluxed, a silver inquart added and mixed. The assays are fused in batches of 24 assays along with a natural standard and a blank. This batch of 26 assays is carried through the whole procedure as a set. After cupellation the precious metal beads are transferred into new glassware, dissolved with aqua regia solution, diluted to volume and mixed.

These resulting solutions are analyzed on an atomic absorption spectrometer using a suitable standard set. The natural standard fused along with this set must be within 2 standard deviations of its known or the whole set is re-assayed.

A minimum of 10% of all assays are rechecked, then reported in parts per billion (ppb). The detection limit is 1 ppb.



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### **Procedure Summary:**

30 Element Aqua Regia Leach ICP-AES Analysis

### **Elements Analyzed:**

Ag, Al, As, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Sn, Sr, Th, Ti, U, W, Zn

### **Procedure:**

- Digest 0.500 grams of the sample for 2 hours at 95°C with an 1:3:4 HNO<sub>3</sub>:HCl:H<sub>2</sub>O mixture.
- After cooling, the sample is diluted to standard volume.
- Analyze by Perkin Elmer Optima 3000 Inductively Coupled Plasma spectrophotometers using standardized operating conditions.
- Detection limit and analytical range are element specific.



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### **Procedure Summary:**

Trace Level Mercury Geochemical Analysis

### **Elements Analyzed:**

(Mercury) Hg

### **Procedure:**

0.500 grams of the sample pulp is digested for 2 hours at  $95^{\circ}$ C with an 1:3:4 HNO<sub>3</sub>:HCl:H<sub>2</sub>O mixture. After cooling, the sample is diluted to standard volume.

The solutions are analysed using the cold vapour hydride method on a Varian atomic absorption spectrophotometer using a suitable solution standard set and standardized operating conditions.

A minimum of 10% of all analyses are rechecked, then reported in parts per billion (ppb). The detection limit is 5 ppb.