ARIS SUMMARY SHEET

District C	eologist, Smithers Off Confidential: 89.02.05
ASSESSMENT	REPORT 17009 MINING DIVISION: Liard
PROPERTY:	Kutcho Creek
LOCATION:	LAT 58 10 00 LONG 128 22 00
	UTM 09 6447230 537262
	NTS 104101W
CLAIM(S):	Josh 3-4, Pipe, Pink Two
OPERATOR (S	3): Esso Res. Can.
AUTHOR(S)	Thiersch, P.:Holbeck, P.
REPORT YEA	AR: 1987. 46 Pages
COMMODITIE	
SEARCHED F	OR: Copper.Zinc.Silver
GEOLOGICAL	
SUMMARY:	The area investigated is underlain by felsic to mafic pyroclastic
	rocks of the Triassic aged Kutcho Formation. The Kutcho volcanogenic
	massive sulphide deposits are located 3 kilometres north of the study
	area. The largest of these deposits contains open pit mineable
	reserves of 17 000 000 tonnes grading 1.6 per cent copper, 2.3 per
	cent zinc and 29.2 grams per tonne silver. Kutcho Formation rocks
	have undergone greenschist facies metamorphism and have been folded
	into large scale, tight, inclined folds plunging shallowly to the
	west. Intense sericite-carbonate alteration is typical of
<u></u>	mineralized areas.
RK	
DONE :	Geochemical, Geophysical
	EMGR 13.5 km; GENI
	Map(s) - 4; $Scale(s) - 1:2500$
	GRAV 5.0 km
	Map(s) - 4: Scale(s) - 1:2500
	ROCK 10 sample(s) :ME
	SOIL 191 sample(s) :CU.PB.ZN.AS.AG
	Map(s) - 1: Scale(s) - 1:12 000
RELATED	
REPORTS	15592
MINEILE.	

1987 GEOCHEMICAL AND GEOPHYSICAL REPORT

ON THE

KUTCHO MINERAL CLAIMS

LOG NO:	0210	RD.
ACTION:		
FILE NO:		

Liard Mining Division

NTS: 104I/1

Lat: 58° 12'N Long: 128° 22'W

GEOLOGICAL BRANCH ASSESSMENT REPORT

Owned by:

Esso Resources Canada Limited 1600 - 409 Granville Street Vancouver, B.C. V6C T2

Operated by:

Esso Resources Canada Limited

Report By:

Peter Thiersch Peter Holbek

December 10, 1987



FILMED

<u>Distribution</u>: Ministry - 2 copies EMC Files - 1 copy Field - 1 copy

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1 Claim Status

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2 Work Performed at Each Target

SUMMARY

- i -

The 1987 exploration program was designed to further evaluate five geophysical conductors identified in the 1985 airborne survey. EM-GENIE surveying totalling 13.5 line kms was performed to define the conductors on the ground. In addition, 5 line kms of Bouguer gravity surveying was conducted, and 191 soil geochemical samples collected, in an attempt to classify the conductors as massive sulphides or graphitic argillites, and hence guide drilling.

Moderate to strong EM conductors were defined near surface at all target areas. They vary from 200m to 1500m in strike length, 5-10m in width, and all dip moderately to the north. Gravity responses generally reflected subtle changes in lithological density and did not identify any massive sulphide bodies near surface. Soil geochemistry results outlined weak anomolies of zinc, copper and silver over each surveyed conductor.

Recommendations include: drill testing of Target C; extension of soil geochemistry surveys along strike from Target C using deep sampling methods; and continued evaluation of other airborne conductors using EM-GENIE, gravity and geochemistry.

1.0 INTRODUCTION

1.1 Location and Access

The Kutcho Creek property is located within the Liard Mining Divison, NTS 104I/1, approximately 100 km east of Dease Lake, in northwest British Columbia (Figure 1.1). Geodetic coordinates are 58° 12' N and 128° 22' W.

Access to the property is by fixed-wing aircraft from Smithers, Dease Lake or Watson Lake to the 1100m gravel airstrip located beside Kutcho Creek. The property is connected to the airstrip by an 8 km long road, however, the large size of the property requires helicopter access to the southern claim area.

1.2 <u>Climate and Physiography</u>

Located within the Cassiar Mountains, on the divide between Arctic and Pacific watersheds, the area is moderately rugged with elevations ranging from 1400m to 2200m. Most of the area is alpine, with treeline at approximately 1500m. Snow cover can persist for nine months of the year. Structural fabric and two periods of glaciation have produced an intersecting pattern of east-west and north-south ridges. Major valleys are often filled with a deep layer of till.





Figure <u>___</u> N Claim Map

TABLE 1 - CLAIM STATUS

CLAIM NAME	UNITS	DATE LOCATED	EXPIRY <u>DATE</u>	RECORD <u>NUMBER</u>
JOSH 1	16	Aug. 25/84	Sept. 7/89	3185
JOSH 2	18	June 21/85	July 17/89	3359
JOSH 3	18	June 21/85	July 17/89	3360
JOSH 4	18	June 21/85	July 17/89	3361
JOSH 5	20	July 21/85	Aug. 19/88	3371
JOSH 6	20	Jan. 24/86	Feb. 7/88	3494
JOSH 7	20	Jan. 24/86	Feb. 7/89	3495
JOSH 8	2	June 27/86	July 7/93	3567
PHIL 1	2	June 27/86	July 7/88	3564
PHIL 2	12	June 27/86	July 7/88	3565
PHIL 3	4	June 27/86	July 7/88	3566
DANGEROUS	20	Jan. 24/86	Feb. 7/88	3498
MONEY PENNY	12	Jan. 24/86	Feb. 7/88	3497
PIPE	15	Jan. 25/86	Feb. 7/88	3501
PINK ONE	20	Jan. 26/86	Feb. 7/88	3499
PINK TWO	20	Jan. 25/86	Feb. 7/89	3500
POTASH	20	Jan. 24/86	Feb. 7/88	3502
TRC	20	Jan. 26/86	Feb. 7/88	3496

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1.3 Property and History

Claims are shown in Figure 1.2 and a summary of claim status is given in Table 1. The property lies and contiguous with, to the south of, claims covering the Kutcho Creek polymetallic volcanogenic massive sulphide deposits. Various portions of the property have been held and worked by different in the past. The most significant companies exploration was carried out by Imperial Oil Ltd. (Esso Minerals Canada) who, in 1975, drilled three short holes to test airborne EM conductors. Recent work has included a Questor airborne MKVII INPUT EM and Magnetic survey flown in November 1985 and ground follow-up in 1986 consisting of relogging and lithogeochemical sampling of drill core from the 1975 program, and ground geophysics, geology and EM geochemistry surveys over two conductors identified in the 1985 airborne survey.

1.4 Work Done

Work conducted in 1986 determined that favourable stratigraphy underlies the southern property area, and that a number of EM conductors coincide with graphitic argillites within this stratigraphy. However, relogging of core in 1986 identified evidence of hydrothermal alteration and suggested an association between these argillites and a distal exhalative horizon.

The 1987 exploration program evaluated five EM conductors identified in the 1985 airborne survey and, using gravity and orientation geochemistry surveys, attempted to distinguish between massive

sulphide and argillaceous conductors. Ground work included a total of 13.5 line kms of EM-GENIE surveying, 5 line kms of Bouguer Gravity surveying, and collection of 191 soil geochemical samples and 10 lithogeochemical samples. This work was conducted by a four-man crew over nine days between August 2 and 10. Table 1 provides a breakdown of the work performed at each target and lists the corresponding claim.

<u>TARGET</u>	EM-GENIE (km)	<u>GRAVITY</u> (km)	<u>GEOCHEM</u> (km)	CLAIM
С	6.8	2.4	2.0	Pink Two
I (KI)	1.6	0.8	0.8	Josh 4
I (KIG)	1.6	0.8	0.8	Josh 4
G (KGH)	2.0	1.0	1.0	Josh 3/Pipe
F	1.5			Pipe
moma r				
TOTAL	13.3	5.0	4.0	

TABLE 2 - WORK PERFORMED AT EACH TARGET

- 6 -

2.0 GEOLOGY

2.1 <u>Regional Geology</u>

The Kutcho property lies within the King Salmon Allochthon, a narrow belt of Triassic island arc volcanics and Jurassic sediments sandwiched between two northerly dipping thrust faults. Penetrative foliation and axial planes of the major folds are parallel to these bounding faults. The belt of volcanics is thickest in the area where it hosts volcanogenic massive sulphide deposits; due in part to primary deposition, but also to stratigraphic repetition by folding and thrusting. Major folds are delineated by the Sinwa Limestone and the contact between Kutcho Formation volcanics and Inklin Formation argillites.

Volcanogenic mineralization of the Kutcho deposits occurs at the contact between footwall lapilli tuffs and hanging wall quartz and quartz-feldspar crystal tuffs. The main sulphide bearing horizon is marked by extensive hydrothermal alteration and the presence of thinly bedded ash tuffs, the latter indicating a temporary hiatus in volcanic activity. This sulphide horizon is geochemically, and often visually, recognizable over a strike length of 8 km.

The coarsest grained pyroclastic rocks of the Kutcho Formation occur in the vicinity of the known deposits and become noticeably sulphide finer grained towards the south and east. The major center of volcanism is postulated to be northeast of Kutcho sulphide lens, although subordinate the centers may exist elsewhere on the property.



FIGURE 2.1 GENERALIZED GEOLOGY AND TARGET GRID LOCATIONS.

2.2 Property Geology

A generalized property geology map is shown in Figure 2.1. Geology of the target C area was described by Holbek and Thiersch (1986) and their map (Figure 2.2) is included here to assist and geophysical evaluation. geochemical The conductive zone is underlain by a narrow band (5-30m) of sericite schist (ash tuffs), silica exhalite and massive to semi-massive pyrite showing some similarities to rocks at the main Kutcho Both the hanging wall and footwall rocks horizon. are chlorite-epidote schists that were probably basalts. Pyritic float is scattered throughout the grid area but is concentrated at the eastern end. Due to scarcity of outcrop no additional detailed mapping was conducted in 1987.

- 9 -

3.0 GEOCHEMISTRY

3.1 Methods

A total of 191 soil samples were collected at 25m on grid lines established over intervals each conductor except at target F. Samples were taken from the B horizon where possible, at depths between 10-15cm. Some sample lines were located in moderately swampy areas, particularly on the KI and KIG targets. Samples were placed in kraft paper bags and air dried before shipment.

Analyses were performed by Bondar-Clegg Ltd. of Vancouver using Atomic Absorption methods for Cu, Pb, Zn, As, and Ag. Gold was analyzed by Fire Assay.

Ten lithogeochemical samples were also collected from sub-crops of pyritic ash tuff and silica exhalite. Samples, consisting of 1-2 kg of rock chips, were analyzed by Bondar-Clegg for 16 elements using DCP and gold by Fire Assay.

Geochemical data and details of analytical techniques are located in Appendix I. Grid plots of soil geochemical data are shown in Figures 3.1 to 3.8. These plots are labelled to correspond with the geophysical survey grids.

3.2 Discussion of Results

3.2.1 Soil Geochemistry

Geochemical responses were generally weak, due in part to thick overburden cover in the surveyed areas. Nevertheless, low contrast anomalies were recognized at each target. Overall, Zn, Cu and Ag gave the best definition of anomalous areas and were generally coincident. Au and As values were correlated. Highest spotty and poorly overall values were 435ppm Cu, 270ppm Zn, 17ppm Pb, 52ppm As, 1.7ppm Ag and 25ppb Au. statistical No rigorous analyses were of distances undertaken because between sample grids (up to 6 km) and local differences in sampled media. Threshold values appear to be in the order of 30ppm Cu, 70ppm Zn, 8ppm Pb, 10ppm As, 0.3ppm Ag and 5ppb Au.

In 1986, an orientation soil geochemistry survey was conducted over target C to test the effects of deep soil sampling (.3 - .5 m)in overburden covered areas (1986 in-house Kutcho Report). The values obtained show a similar response to the 1987 survey (.1 - .2 m sample depth) but both the average values and the contrast between background and anomalous values were roughly doubled. Although the deep soil sampling technique is the time-consuming, benefits more of increased geochemical response outweigh any decrease in productivity.

Target C

- 12 -

Eighty-five samples were collected on five 400m long lines with 100m separation. Four small (25x100m) zinc anomalies were defined by eight anomalous values of +100 ppm (Figs. coincident with 3.1, 3.2). They are geophysical conductors and sub-crops of pyritic ash tuff or silica exhalite. Α zone of slightly elevated silver broader 100m wide by 400m values (+0.3ppm) long encloses the area of sub-crop and two of the zinc anomalies. Best sample was L100W-225N with 270ppm Zn, 78ppm Cu, 26ppm As and .3ppm Ag.

Target I (KI, KIG)

Thirty-four samples were collected from the KI grid on two 400m lines separated by 300m (Figs. 3.3, 3.4). Anomalous values of Zn (>100 ppm) and Ag (>1.0 ppm) occur over 2-3 stations (50-75m) on both lines, and appear to follow the regional structural trend. Best sample was L100E-075N which returned 158ppm Cu, 56ppm Zn, 1.4ppm Ag and 15ppb Au.

On the KIG grid thirty-four samples were collected on two 400m lines with 200m separation (Figs. 3.5, 3.6). Cu, Zn and Ag similarly elevated values were over 3 - 4line, offset from the stations on one geophysical conductor by 50m. Best results were from sample L200E-125N with 120ppm Zn, 56ppm Cu and 1.3ppm Ag.

Target G (KGH)

- 13 -

Fourty-two samples were collected on the KGH grid on 500m lines separated by 200m (Figs. 3.7, 3.8). Elevated values of Cu and Zn (+100ppm) occur over four stations on one line, coincident with the geophysical conductor. Best sample was L000E-225N with 435ppm Cu, 86ppm Zn, 19ppm As and .4ppm Ag.

3.2.2 Lithogeochemistry

Outcrop exposure over the surveyed areas is generally very poor, except in the vicinity of target C. In this area, six rock chip samples were collected from sub-crops of thinly bedded pyritic ash tuff and silica exhalite. Two samples returned anomalous zinc values of 2700ppm and 3000ppm. These levels of enrichment are high enough to indicate hydrothermal activity and suggest proximity to an exhalative center. Other element concentrations were similar to values obtained in soil samples. Highest gold and silver values were 20ppb and 0.7ppm respectively.

4.0 GEOPHYSICS

4.1 EM Methods and Equipment

Airborne EM conductors were evaluated on the ground using a Scintrex SE-88 GENIE electromagnetic system. Test lines where run using an VLF EM-16 to locate the conductor prior to establishing grid lines perpendicular to the conductor axis. A total of 13.5 line kms of GENIE surveying was completed over five targets.

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GENIE is an acronym for Geometry Normalized In-phase This is a moving Electro-magnetometer. source frequency domain system, comprised of a transmitter and receiver that, unlike conventional horizontal systems, does not require a linking loop EM reference cable. Instead, the transmitter simultaneously outputs a selectable signal frequency and reference frequency which can be varied for the desired depth sensitivity. The separation of the two units is maintained constant, with station readings usually taken at intervals equal to one quarter of the separation. In this survey depth sensitivity was 25m.

Measurements can be made for the following combinations of signal and reference frequencies: 3037.5/112.5 Hz, 1012.5/112.5 Hz, 337.5/112.5 Hz, 3037.5/337.5 Hz, and 1012.5/337.5 Hz. The receiver detects the vertical magnetic field components at the selected frequencies and computes the amplitute ratio defined by the following equation: Where: R = GENIE reading in percent

- Aws = Amplitude of vertical magnetic field at the signal frequency
- Awr = Amplitude of vertical magnetic field at the reference frequency
 - N = Normalizing factor which corrects for differences in transmitter moments between signal and reference frequencies

Thus, the GENIE reading is a measure of the difference in amplitudes of the vertical magnetic field components detected at the signal frequency and normalized reference frequency. The response in an area of no conductors or of conductive overburden is zero. Over a conductor the response is identical in shape to that obtained using conventional horizontal loop EM systems.

4.2 Gravity Methods and Equipment

Bouguer gravity surveys were performed over EM conductors in an attempt to discriminate between massive sulphide and argillaceous conductors. Five line kms of surveying was completed over five targets.

geological condition that Any results in а in density, horizontal variation such as the presence of massive sulphides or a change in lithological density or porosity, will cause a gravity anomaly. The gravimeter is an extremely sensitive weighing device that records the relative variation in gravity, using an astatic system to measure minute changes in the length of a weighted spring. The unit of measurement is the milligal; one gal being equal to 1cm/sec/sec. Bouguer gravity is the result of corrections for various factors including: instrument drift; height of instrument; latitude and tidal effects; and changes in elevation between survey stations. The LaCoste-Romberg Model G gravimeter, with an accuracy of +/- 0.02 mgals, was used in this survey.

Station elevations were measured using a GDD Model C hydrostatic elevation meter. This instrument consists of a transducer and a fluid filled plastic tube 29m long that is stretched between survey stations. The instrument calculates the elevation difference based on relative fluid pressure and is accurate to +/- 0.005m.

4.3 <u>Discussion of Results</u>

Profile plots of EM data are presented in Figures 4.1 to 4.4 (map pocket). The GENIE surveying was successfull in delineating target conductors except at the F target, where extreme electromagnetic noise, due to thunder storm activity, rendered data inconclusive. The conductor was located however, using the VLF-EM 16 unit, and geological examination determined the conductors to be graphitic argillites.

Profile plots of gravity data can be found in Figures 4.5 to 4.8 (map pocket).

<u>Target</u> C

The GENIE survey defined a weak to moderately strong EM conductor 1.5 km in length within 10-15m of The conductor varies between 5 and 15m surface. thick, dips moderately to the north, and is complemented by two shorter sub-parallel conductors in the western grid area. The main conductor is probably continuous although it appears weaker in the central area due to thickening overburden or possibly fault displacement. The strongest response in the western grid was obtained area, where overburden is thinnest, coincident with sub-crops of pyritic ash tuff and silica exhalite.

Gravity responses were broad and shallow, indicating a diffuse zone of increased density. This may reflect near surface disseminated sulphides, such as pyritic alteration associated with hydrothermal activity or thin laminations of sulphides within the ash tuff/exhalitive horizon. This data does not discount the possibility of massive sulphide potential at depth however, and these surficial responses may mask deeper responses.

Target I (KI, KIG)

A strong conductor in excess of 400m long and 5-10m thick was defined on grid KIG. The conductor dips moderately to the north and is open but weakens to the east. This target gave a very strong single line response indicating that it virtually outcrops on line 200E. No outcrop was observed. The gradient defined by gravity surveying is due to a general increase in lithological density to the north; no massive sulphides were indicated. On grid KI a moderate conductor was defined approximately 400m long within 10m of surface. It is 5-10m wide and dips to the north. Gravity response was negligible.

Target H (KGH)

A strong conductor 500m long was detected, within 10m of surface on grid KGH. It is 5-10m wide, dips moderately to the north and is open to the east.

Gravity responses showed an increase in density to the north, possibly indicating a transition from sedimentary to volcanic or felsic to mafic lithology.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The 1987 exploration program was designed to further evaluate five geophysical conductors identified in the 1985 airborne survey. EM-GENIE surveying totalling 13.5 line kms was performed to define the conductors on the ground. In addition, 5 line kms of Bouguer gravity surveying was conducted, and 191 soil geochemical samples collected, in an attempt to classify the conductors as massive sulphides or graphitic argillites, and hence guide drilling.

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Moderate to strong EM conductors were defined near surface at all target areas. They vary from 200m to 1500m in strike length, 5-10m in width, and all dip moderately to the north. Gravity responses generally reflected subtle changes in lithological density and did not identify any massive sulphide bodies near surface. Soil geochemistry results outlined weak anomolies of zinc, copper and silver over each surveyed conductor.

Target C, located in the western property area, gave the most encouraging results. A moderate conductor 1.5km long was defined, coincident with low grade zinc, copper and silver soil anomalies and sub-crops of pyritic ash tuff and silica exhalite. Anomalous lithogeochemical zinc values from these rocks indicate an exhalitive origin. Gravity responses were positive but weak, signifying a near surface zone of disseminated sulphides over the conductor. This response does not, however, discount the potential for massive sulphides at depth. The similarities in lithology and geochemistry between target C and the main Kutcho horizon make this an attractive drill target.

Targets H and I, in the southeastern property area, gave moderate to strong EM responses, but poor gravity responses, indicating that the conductors are likely This corresponds to information graphitic argillites. gained by relogging core from DDHE-23 and 24 in 1986. However, weak enrichments of zinc and copper geochemistry of and alteration characteristics these argillites indicate some hydrothermal activity and an association This horizon should be with a distal exhalitive horizon. explored along strike and at depth.

Extensive overburden cover on the Kutcho Property may mask soil geochemical responses and requires special sampling procedures. Orientation surveys have demonstrated the value of deep soil sampling (.3 - .5 m)as an effective means of increasing anomalous values and contrasts, which encourages the continued use of soil geochemistry as an exploration tool.

Due to the lack of outcrop and poor gravity response over most EM conductors, drilling may be best guided by geochemistry, particularly copper, zinc and silver. Gravity surveying has determined that shallow drilling will not encounter massive sulphides near surface (< 75m) so deeper drilling is required to adequately test the favourable horizon.

Recommendations include: Phase I drill testing of Target C with two holes of 150 m each; Phase II drilling of a further 500 m in two holes, if warranted; extension of the existing Target C soil geochemistry grid 1 km along strike in both directions, using deep auger sampling methods; and continuing evaluation of remaining airborne conductors using EM-GENIE, gravity and geochemistry. This exploration program would take about three weeks to complete at a cost of approximately \$120,000.

APPENDIX I

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STATEMENT OF COSTS

STATEMENT OF COSTS

<u>LABOUR</u> - August 2-10, 1987	en de la companya de La companya de la comp	
Z. Doborzynski - @ \$325 for 9 days P. Holbek - @ \$245 for 2 days P. Thiersch - @ \$140 for 9 days	2925 490 1260	
S. Lowe - @ \$180 for 5 days	1080	
B. Carmichael - @ \$140 for 5 days	700	
Van Alphen contract - 2 men @ \$150 for 5 days	1500	
		\$ 7955
FOOD AND ACCOMMODATION		Ç 7555
4 men - @ \$50 for 9 davs	1800	
		\$ 1800
EQUIPMENT RENTAL		
EM GENIE	960	
Gravimeter	1625	
Software	260	
Scintrex	1125	
GEOCHEMICAL ANALYSIS		\$ 3970
101 goil gomplog - 5 clements L RA gold		
$a \leq 14.50$	2770	
10 rock samples - 16 element DCP + FA gold	2110	
@ \$22.50	225	
		\$ 2995
TRANSPORTATION		
Fixed-wing charter Central Mountain Air		
Smithers - Kutcho	1190	
Helicopter charter Northern Mountain	1100	
2 x Sturdee - Kutcho	4280	
Helicopter charter Trans North		
4.5 hrs @ \$560 incl. fuel	2520	
Freight	235	
		2 8225
Report Preparation	1500	\$ 1500
TOTAL		<u>\$26,445</u>

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APPENDIX II

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STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Peter Thiersch, of 5839 Falcon Road, West Vancouver B.C., hereby certify that:

I graduated from the University of British Columbia in 1986 with a B.Sc. degree in Geological Sciences;

I have practiced my profession in B.C. for the past two years as an employee of Esso Minerals Canada;

The work described herein was conducted under my supervision.

I have no financial interest in the Property described herein.

Peter Thiersch Geologist B.Sc.

DATED THIS 3rd DAY OF February 1988 AT VANCOUVER, B.C.

STATEMENT OF QUALIFICATIONS

I, Peter Holbek, of 1276 West 21st Street, North Vancouver, B.C. V7P 2C9, to hereby certify that:

- 1. I am a Geologist in the employment of Esso Minerals Canada, a Division of Esso Resources Canada Limited of 1600 - 409 Granville Street, Vancouver, B.C. V6C 1T2.
- 2. I am graduate of the University of British Columbia B.Sc. (Honors) 1980.
- 3. I have been employed as an exploration geologist for seven (7) years.
- 4. I have no financial interest in the property described herein.

DATED THIS lO DAY OF DECEMBER, 1987 AT VANCOUVER, B.C.

P. Holbek, Project Geologist

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APPENDIX III

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GEOCHEMICAL DATA, GRID PLOTS

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Figure 3.1

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			SCA	LE 1:2	500			C TARGET	Figure 3.2

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KI TARGET

Copper / Silver ppm

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KI TARGET

Zinc / Lead ppm

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KIG TARGET

Copper / Silver ppm

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KIG TARGET

Zinc / Lead ppm

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2	W	SCALE 1:2500	0	E
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46	3		78	4
27	.5		15	.2
36	.3		12	.1
42 -	5		31	- 4
30	.3		13	
18	3		18	.3
26	.1		19	.7
25	.1		60 _	3
19	1		435	.4
9	.5		104	٤.
10	.3		48	.1
8.	.3		161	.6
11	.3		21	.3
14	A		16	1
. (8	.3		42	- 1
53			10	- 4
59	.7		- 34	A
25	.3		2(.1
15	.1		17	
22	1.6	KGH TARGET	13	1.7

Copper / Silver ppm

2	W	SCALE 1:2500	0E			
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10 8	٩		55	4		
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16	10		110	8		
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60	- 13		(56	8		
60	11		56	5		
59	10		72	6		
110	7		33 .	1.17		
70	4		107	10		
92	8		76	4		
64	7		64	6		
40	6		40	12		
	•	KGH TARGET				

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Zinc / Lead ppm

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REPORT: 227-6756 (COMPLETE)

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REFERENCE INFO:

CLIENT: ESSO MINERALS CANADA PROJECT: SHASTA 123 SUBMITTED BY: PETER THIERSEH DATE PRINTED: 9-NOV-87

	ORDER		ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	NETHOD
	1	Cu	Copper	10	1 PPN	MULT ACID TOT DIG	PLASMA
	2	Pb	Lead	. 10	5 PPN	MULT ACID TOT DIG	PLASNA
	3	Zn	Zinc	10	1 PP#	MULT ACID TOT DIG	PLASNA
eta. Carta	4	Mo	No lybdenus		1 PPN	MULT ACID TOT DIG	PLASHA
	5	Aa	Silver	10	0.5 PPM	MULT ACID TOT DIG	PLASHA
91. A. D	6	Ni	Nickel	10	1 PPN	MULT ACID TOT DIG	PLASNA
	•7	Co	Cobalt	10	1 PPM	MULT ACID TOT DIG	PLASNA
	8	Nn	Manganese	10	1 PPN	MULT ACID TOT DIG	PLASNA
	9	Fe	Iron	10	0.05 PCT	MULT ACID TOT DIG	PLASNA
	10	As	Arsenic	10	5 PPM	MULT ACID TOT DIG	PLASNA
	11	Sr	Strontium	10	5 PPN	MULT ACID TOT DIG	PLASMA
	12	K	Potassium	10	0.05 PCT	MULT ACID TOT DIG	PLASMA
ſ	13	Ca	Calcium	10	0.05 PCT	MULT ACID TOT DIG	PLASNA
	14	Mg	Magnesium	10	0.05 PCT	MULT ACID TOT DIG	PLASMA
	15	Na	Sodium	10	0.05 PCT	MULT ACID TOT DIG	PLASHA
	16	F	Fluorine	10	20 PPH	POT HYDROXIDE FUS	ION Specific Ion
	17	Au	Gold - Fire Assay	10	5 PPB	FIRE-ASSAY	Fire Assay AA
· · · · · · · · · · · · · · · · · · ·	SAMPLE	TYI	PES NUMBER	SIZE F	RACTIONS	NUMBER SAM	PLE PREPARATIONS NUMBER

R ROCK OR BED ROCK 10 2 -150

REMARKS: IBM diskette to follow.

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REPORT: 227-67	56					
SAMPLE NUMBER	ELEMENT K Units Pct	Ca PCT	ng Na PCT PCT	F PPN	AU PPB	HASTA 123 PAG
R2 R7KT-01 R2 R7KT-02 R2 R7KT-03 R2 R7KT-04 R2 R7KT-05	<0.05 <0.05 <0.05 <0.05 0.30	0.13 <0.05 <0.05 2.85 0.59	0.12 4.45 0.13 3.83 0.17 3.90 3.37 2.29 0.76 5.23	30 25 30 85 210	20 <5 <5 <5 <5 <5	
R2 R7KT-06 R2 R87KP-01 R2 R87KP-02 R2 R87KP-03 R2 R87KP-07	0.13 <0.00 0.67 0.07 0.06	0.19 0.13 1.33 1.62 3.68	1.47 1.87 0.23 0.19 0.69 3.21 0.92 5.20 4.34 2.61	90 55 210 100 240	ব্য ব্য ব্য ব্য ব্য ব্য	

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Geoc Lab

Bondar-Cleg. & Company Ltd. 30 Pemberton Ave. North Vancouver, B.C. Canada V7P 2R3 Phone: (604) 985-0681 Telex: 04-352667



 REPORT: 227-67	756	الم المعد الم					PROJECT:	SHASTA 123	- 1: 1	PAGE
 SAMPLE NUMBER	ELEMENT Cu UNITS PPM	Pb PPM	Zn PP#	tio PPti	Ag PPM	Ni PPM	Co PPti	Mn PPM	Fe PCT	As PPM
R2 R7KT-01 R2 R7KT-02 R2 R7KT-03 R2 R7KT-04 R2 R7KT-05 '	52 36 9 27 5	27 19 27 44 13	3082 2718 158 100 99	4 3 5 21 1	0.7 <0.5 <0.5 0.5 <0.5	7 5 4 30 1	2 2 <1 12 3	98 125 119 960 229	2.60 3.50 5.20 7.70	<5 5 12 <5
R2 R7KT-06 R2 R87KP-01 R2 R87KP-02 R2 R87KP-03 R2 R87KP-07	10 8 9 37 340	26 29 20 24 43	73 59 114 55 168	24 6 <1 4 1	0.7 <0.5 <0.5 0.6 <0.5	5 13 7 10 - 28	<1 3 4 13 33	328 1047 664 590 2562	3.60 3.60 6.50 2.90 4.90 8.70	<5 28 <5 12



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REPORT: 127-6756 (COMPLETE)

REFERENCE INFO:

CLIENT: ESSO MINERALS CANADA PROJECT: SHASTA 123

SUBMITTED BY: PETER THIERSEH DATE PRINTED: 9-NOV-87

ORDER	ELENENT	NUMBER OF ANALYSES	LOWER DETECTION LINIT	EXTRACTION	NETHOD
1 C 2 F	Cu Copper Pb Lead	191 191	1 PPN 2 PPN	HNO3-HCL HOT EXTR HNO3-HCL HOT EXTR	Atomic Absorption Atomic Absorption
3 Z 4 (5 4	In Zinc Ag Silver As Arsenic	191 191 191	1 PPH 0.1 PPN 2 PPH 5 PPB	HNO3-HCL HOT EXTR HNO3-HCL HOT EXTR NITRIC PERCHLOR DIG ETRE-ASSAY	Atomic Absorption Atomic Absorption Colourimetric Fire Assay AA
6 7	Au Gold - Fire Hssay Au/Ht Sample Height/grams	171	0.1 G	3 T// HOOH I	

8 Au/wt -20 Au Sample Weight 17 0.1 G

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS NUMBER	
S_SOILS	191		191	DRY, SIEVE -80 191	

REMARKS: Please note: Corrected weights and report recipients.

IBM diskette to follow.

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ny LAG -Clege & Com 130 Pemberion Ave. North Vancouver, B.C. Canada V7P 2R5 Phone: (604) 985-0681 Telex: 04-332667

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Geochemi Lab Rep

SAMPLE ELEMENT UNITIS Cu PPH PPH PH		REPORT:	127-6756			رومین (ری س م مع بر از این س م مع				PI	ROJECT: S	HASTA 123	PAGE 1
HUNGER DETTS PPH PH PH PH PH <th>•</th> <th>SAMPLE</th> <th></th> <th>ELENENT</th> <th>Cu</th> <th>РЬ</th> <th>Zn</th> <th>Âg</th> <th>As</th> <th>Au</th> <th>Au/wt</th> <th>Au/wt</th> <th></th>	•	SAMPLE		ELENENT	Cu	РЬ	Zn	Âg	As	Au	Au/wt	Au/wt	
S1 K6H 00E 00N 21 9 76 0.1 5 CS 10.0 S1 K6H 00E 00N 10 17 33 0.4 C2 C5 10.0 S1 K6H 00E 00N 16 5 56 0.2 4 5 10.0 S1 K6H 00E 10N 16 5 56 0.2 4 5 10.0 S1 K6H 00E 10N 16 5 56 0.2 4 5 10.0 S1 K6H 00E 10N 16 5 56 0.2 4 5 10.0 S1 K6H 00E 10N 16 5 56 0.3 2 -5 10.0 S1 K6H 00E 20N 104 4 110 0.4 19 10 5.0 S1 K6H 00E 20N 60 9 56 0.3 2 5 10.0 S1 K6H 00E 20N 19 8 50 0.2 4 10 10.0 S1 K6H 00E 30N 13 14 73 0.4 c2 5 10.0 S1 K6H 00E 30N 31 14 70		NUMBER		UNITS	PPN	PPN	PPN	PPN	PPN	PP8	G	G	
31 KeN DE 2N 34 10 107 0.4 -2 -5 10.0 S1 KeN DE CON 10 17 33 0.4 -2 -5 10.0 S1 KeN DE CON 10 17 33 0.4 -2 -5 10.0 S1 KeN DE CON 16 5 5.4 0.2 4 5 10.0 S1 KeN DE CON 16 5 5.4 0.2 4 5 10.0 S1 KeN DE CON 16 5 6.0 0.4 1.0 5.0 S1 KeN DE CON 164 5 6.0 0.4 1.0 5.0 S1 KeN DE ZON 44 7 10.0 5.0 5.0 5.0 S1 KeN DE ZON 60 9 -56 0.3 -2 5 10.0 S1 KeN DE ZON 60 9 -56 0.3 -2 5 10.0 S1 KeN DE ZON 70 3 5 10.0 5.0 10.0 <td>۰۰۰۰ د مشاهده مستقله مده د مشاهده مستقلها</td> <td>C1 KCH 0</td> <td>0F 00N</td> <td></td> <td>21</td> <td>9</td> <td>76</td> <td>n 1</td> <td>5</td> <td><5</td> <td>10.0</td> <td></td> <td></td>	۰۰۰۰ د مشاهده مستقله مده د مشاهده مستقلها	C1 KCH 0	0F 00N		21	9	76	n 1	5	<5	10.0		
Si KeH ODE 650N 10 17 33 0.4 C2 C3 10.0 Si KeH ODE 10N 42 6 72 0.2 6 C5 5.0 Si KeH ODE 12N 21 6 10.0 5.0 5.0 Si KeH ODE 12N 21 6 155 0.0 5 5.0 Si KeH ODE 12N 21 6 156 0.2 4 5 10.0 Si KeH ODE 12N 21 6 156 0.3 2 -5 10.0 Si KeH ODE 22N 43 7 64 0.4 19 10 5.0 Si KeH ODE 22N 435 7 64 0.4 19 10 5.0 Si KeH ODE 22N 43 10 0.3 4 50 0.2 4 10 0.0 Si KeH ODE 22N 31 17 0 0.3 4 50 0.0 Si KeH ODE 22N 31 17 0 0.3 4 50 0.0 Si KeH ODE 42N 78 4 50 0.2		S1 KGH 0	NE 25N		36	10	107	0.1 0.4	(2	Ś	10.0		
S1 K8H 00E 075N 42 6 72 0.2 4 45 5.0 S1 K8H 00E 100N 16 5 56 0.2 4 5 10.0 S1 K8H 00E 125N 21 8 156 0.3 2 -5 10.0 S1 K8H 00E 125N 44 7 171 0.2 7 -5 10.0 S1 K8H 00E 20N 194 8 10 0.4 17 -5 10.0 S1 K8H 00E 20N 194 8 50 0.2 4 10 10.0 S1 K8H 00E 25N 43 7 784 0.4 19 10 0.0 S1 K8H 00E 25N 19 8 50 0.2 4 10 10.0 S1 K8H 00E 40DH 18 12 100 0.3 3 5 10.0 S1 K8H 00E 50H 31 14 73 0.4 62 10.0 10.0 S1 K8H 00E 425N 78 4 55 0.4 5 10.0 10.0 S1 K8H 00E 425N 78 4	•	S1 KGH 0	OF OSON		10	17	33	0.4	<2	Ś	10.0		
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S1 KeN DE 125M 361 5 60 0.5 12 C 3 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10			05 4951		24		40/	n 2			10.0		
S1 KGH 0DE 175N A3 7 171 D.2 7 C5 10.0 S1 KGH 0DE 200N 104 8 110 O.6 17 C5 10.0 S1 KGH 0DE 22SN 435 7 86 0.4 19 10 5.0 S1 KGH 0DE 22SN 435 7 86 0.2 4 10 10.0 S1 KGH 0DE 22SN 19 8 50 0.2 4 10 10.0 S1 KGH 0DE 22SN 19 8 50 0.2 4 10 10.0 S1 KGH 0DE 300N 18 12 100 0.3 3 5 10.0 S1 KGH 0DE 30N 31 14 73 0.4 4 5 10.0 S1 KGH 0DE 40N 15 4 50 0.2 3 5 10.0 S1 KGH 0DE 27SN 12 10 101 0.2 4 4 5 10.0 S1 KGH 0DE 27SN 12 10 0.2 3 45 10.0 10.0 S1 KGH 0DE 22SN 78		SI KOH U	OF 150N		161	5	60. 130	0.5	4 11	5	10.0		
S1 KGH 0DE 20N 104 8 110 0.6 17 45 10.0 S1 KGH 0DE 22SN 435 7 86 0.4 19 10 5.0 S1 KGH 0DE 22SN 435 7 86 0.2 4 10 10.0 S1 KGH 0DE 27SN 19 8 50 0.2 4 10.0 S1 KGH 0DE 32SN 23 11 70 0.3 3 4 5 10.0 S1 KGH 0DE 32SN 23 11 70 0.3 3 4 10.0 S1 KGH 0DE 32SN 12 10 101 0.2 4 5 10.0 S1 KGH 0DE 42SN 78 4 55 0.4 5 10.0 10.0 S1 KGH 0DE 42SN 78 4 55 0.4 5 10.0 10.0 S1 KGH 0DE 50S 13 12 40 0.7 3 4 10.0 S1 KGH 0DE 450N 25 7 0.3 <td></td> <td>ST KOH D</td> <td>0F 175N</td> <td>an di j</td> <td>48</td> <td>ן ד</td> <td>171</td> <td>0.0</td> <td>7</td> <td>S S</td> <td>10.0</td> <td></td> <td></td>		ST KOH D	0F 175N	an di j	48	ן ד	171	0.0	7	S S	10.0		
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S1 K6H 00E 205N S1 K6H 00E 300N S1 K6H 00E 300N S1 K6H 00E 325N S1 K6H 00E 425N S1 K6H 00E 425N S1 K6H 00E 425N S1 K6H 00E 425N S1 K6H 00E 50S S1 S1 K6H 00E 50S S1 K6H 00E 50S S1 S1 K6H 00E 50S S1 S1 K6H 00E 50S S1 S1 S1 S1 S1 K6H 2004 02SN S1 K6H 2004 02SN S1 K6H 2004 02SN S1 K6H 2004 02SN S1 K6H 2004 12SN S1 K6H 2004		S1 KGH D	OE 250N		60	9	.56	U.3	2) 	10.0		
S1 K6H 00E 30N 18 12 100 0.3 4 G 10.0 S1 K6H 00E 35N 23 11 70 0.3 3 G 10.0 S1 K6H 00E 35N 31 14 73 0.4 C G 5 10.0 S1 K6H 00E 35N 12 10 101 0.2 4 G 5 10.0 S1 K6H 00E 42N 78 4 55 0.4 5 10 - 10.0 S1 K6H 00E 42N 78 4 55 0.4 5 10 - 10.0 S1 K6H 00E 25S 17 6 64 0.4 5 G 10.0 S1 K6H 00E 50S 13 12 40 0.7 3 G5 10.0 S1 K6H 00E 50S 13 12 40 0.7 6 10.0 S1 K6H 00E 50S 13 12 40 0.7 6 10.0 S1 K6H 200 02SN 59 4 70 0.7 6 10 7.0 S1 K6H 200 02SN 59 4 70 0.7 6 10 7.0 S1 K6H 200 02SN 59 4 70 0.7 6 10 7.0 S1 K6H 200 02SN 59 4 70 0.7 6 10 7.0 S1 K6H 200 02SN 53 7 110 0.7 6 10 7.0 S1 K6H 200 02SN 53 7 110 0.7 6 10 0.0 S1 K6H 200 02SN 53 7 110 0.7 6 10 0.0 S1 K6H 200 02SN 53 7 110 0.7 6 10 0.0 S1 K6H 200 02SN 53 7 10 0.7 6 10 0.0 S1 K6H 200 02SN 53 7 10 0.7 6 10 0.0 S1 K6H 200 12SN 18 10 59 0.3 5 5 10.0 S1 K6H 200 12SN 18 10 59 0.3 5 5 10.0 S1 K6H 200 12SN 18 10 59 0.3 5 5 10.0 S1 K6H 200 12SN 18 10 59 0.3 5 5 10.0 S1 K6H 200 12SN 18 10 59 0.3 5 5 10.0 S1 K6H 200 12SN 18 10 59 0.3 5 5 10.0 S1 K6H 200 12SN 11 13 60 0.3 4 G5 10.0 S1 K6H 200 12SN 11 13 60 0.3 5 G 5.0 S1 K6H 200 12SN 11 13 60 0.3 5 G 5.0 S1 K6H 200 12SN 18 15 42 0.3 2 10 10.0 S1 K6H 200 12SN 18 15 42 0.3 5 G 5.0 S1 K6H 200 12SN 18 12 72 0.2 4 10 10.0 S1 K6H 200 12SN 18 12 72 0.2 5 G 10.0 S1 K6H 200 12SN 18 12 77 0.2 5 G 10.0 S1 K6H 200 12SN 25 5 56 0.2 4 20 10.0 S1 K6H 200 12SN 25 5 5 6 0.2 4 20 10.0 S1 K6H 200 12SN 25 5 5 6 0.2 4 20 10.0 S1 K6H 200 12SN 25 5 5 6 0.2 4 20 10.0 S1 K6H 200 12SN 25 5 5 6 0.2 4 20 10.0 S1 K6H 200 12SN 25 5 5 6 0.2 4 20 10.0 S1 K6H 200 12SN 25 7 5 5 5 0.0 3 7 G 5 0.0 S1 K6H 200 13SN 42 9 120 0.3 7 G 5 10.0 S1 K6H 200 13SN 42 9 120 0.3 7 G 5 10.0 S1 K6H 200 13SN 42 9 120 0.3 7 G 5 10.0 S1 K6H 200 13SN 42 9 120 0.3 7 G 5 10.0 S1 K6H 200 13SN 42 9 120 0.3 7 G 5 10.0 S1 K6H 200 13SN 42 9 120 0.3 7 G 5 10.0 S1 K6H 200 13SN 42 9 10 0.3 9 G 5 10.0 S1 K6H 200 13SN 42 9 10 0.3 9 G 5 10.0 S1 K6H 200 13SN 42 9 10 0.3 9 G 5 10.0 S1 K6H 200 13SN 42 9 10 0.3 9 G 5 10.0 S1 K6H 200 13SN 42 9 10 0.3 9 G 5 10.0		S1 KGH U	UE ZISN		17	ð 40	30 400	υ.Ζ η ο	∰ 4 /	7C 10	10.0		
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S1 Kon oue 3000 S1 IN FS D.N G G D.N S1 KGH 00E 375N 12 10 101 0.2 4 S5 10.0 S1 KGH 00E 400N 15 4 50 0.2 3 S5 10.0 S1 KGH 00E 425N 78 4 55 0.4 5 10.0 S1 KGH 00E 425N 21 6 82 0.3 3 C5 10.0 S1 KGH 00E 25S 17 6 64 0.7 3 C5 10.0 S1 KGH 200H 00N 25 8 92 0.3 6 S1 10.0 S1 KGH 200H 05N 53 7 10 0.4 7 5 10.0 S1 KGH 200H 05N 53 7 10 0.4 7 5 10.0 S1 KGH 200H 105N 18 10 59 0.3 5 5 10.0 S1 KGH 200H 105N 8 15 42 0.3		SI KUH U			23	11	70 77	u.s	2	5	10.0		
S1 KGH 00E 375N 12 10 101 0.2 4 <5 10.0 S1 KGH 00E 400N 15 4 50 0.2 3 <5		51 KUN U	UE 330N			14	13	0.4	×۷		10.0		
S1 KGH 00E 400N 15 4 50 0.2 3 C5 10.0 S1 KGH 00E 425N 78 4 55 0.4 5 10.0 10.0 S1 KGH 00E 450N 21 6 62 0.3 3 45 10.0 S1 KGH 00E 50S 13 12 40 0.7 3 45 10.0 S1 KGH 2004 00N 25 8 92 0.3 6 45 10.0 S1 KGH 2004 02SN 59 4 70 0.7 6 10 7.0 S1 KGH 2004 02SN 59 4 70 0.7 6 10 7.0 S1 KGH 2004 02SN 53 7 110 0.4 7 5 10.0 S1 KGH 2004 07SN 18 10 59 5 10.0 1.0 S1 KGH 2004 100N 14 11 60 0.4 5 5 10.0 S1 KGH 2004 150N 8 15 42 0.3 <td>A</td> <td>S1 KGH O</td> <td>DE 375N</td> <td></td> <td>12</td> <td>10</td> <td>101</td> <td>0.2</td> <td>4</td> <td><5</td> <td>10.0</td> <td></td> <td></td>	A	S1 KGH O	DE 375N		12	10	101	0.2	4	<5	10.0		
S1 K6H D0E $425N$ 78 4 55 0.4 5 10.0 S1 K6H D0E $450N$ 21 6 82 0.3 3 55 10.0 S1 K6H D0E $25S$ 17 6 64 0.4 5 55 10.0 S1 K6H D0E $25S$ 17 6 64 0.4 5 55 10.0 S1 K6H D0E $25S$ 13 12 40 0.7 3 55 10.0 S1 K6H 200H $02N$ 53 7 110 0.4 7 5 10.0 S1 K6H 200H $02N$ 18 10 59 0.3 55 10.0 S1 K6H 200H $100N$ 14 11 60 0.4 5 55 10.0 S1 K6H 200H $15N$ 8 15 42 0.3	U	S1 KGH O	0E 400N		15	4	50	0.2	3	<5	10.0		
S1 K6H DDE 25N 17 6 64 0.4 5 <5 10.0 S1 K6H DDE 25S 17 6 64 0.4 5 <5		S1 KGH O	IDE 425N		78	4	55	0.4	5	10	- 10.0	40.0	
S1 KCH DOE 25 17 6 64 0.4 5 C5 10.0 S1 KCH DOE 505 13 12 40 0.7 3 <5		S1 KGH O	OE 450N		21	6	82	0.3	3	<5		10.0	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		S1 KGH U	IDE 25S		- 17	6	64	U.4	5	<5	10.0		
S1 KGH 200H 00N 25 8 92 0.3 6 <5 10.0 S1 KGH 200H 02SN 59 4 70 0.7 6 10 7.0 S1 KGH 200H 02SN 53 7 110 0.4 7 5 10.0 S1 KGH 200H 07SN 18 10 59 0.3 5 5 10.0 S1 KGH 200H 07SN 18 10 59 0.3 5 5 10.0 S1 KGH 200H 100N 14 11 60 0.4 5 <5	,	S1 KGH O	0E 50S		13	12	40	0.7	3	<5	10.0		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		S1 KGH 2	200W 00N		25	8	92	0.3	6	<5	10.0		
S1 KGH 200H 050 53 7 110 0.4 7 5 10.0 S1 KGH 200H 075N 18 10 59 0.3 5 5 10.0 S1 KGH 200H 100N 14 11 60 0.4 5 <5		S1 KGH 2	1004 025N		59	4	70	0.7	6	10	7.0		
S1 KGH 200H 0.75N 18 10 59 0.3 5 5 10.0 S1 KGH 200H 100N 14 11 60 0.4 5 <5		S1 KGH 2	OOW OSON	N ST	53	7	110	0.4	7	5	10.0		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		S1 KGH 2	004 075N		18	10	59	0.3		5	10.0		
S1 KGH 200H 12SN 11 13 60 0.3 4 <5		S1 KGH 2	200W 100N	anda an	14	11	60	0.4	S	<5	10.0		
S1 KGH 200H 150N 8 15 42 0.3 2 10 10.0 S1 KGH 200H 175N 16 7 76 0.3 5 <5		S1 KGH 2	200W 125N		11	13	60	0.3	4	<5	10.0		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		S1 KGH 2	200W 150N	1	8	15	42	0.3	2	10	10.0		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		S1 KGH 2	200W 175N	E. State	16	7	76	0.3	5	<5	5.0		
$ \underbrace{ \begin{array}{c cccccccccccccccccccccccccccccccccc$		S1 KGH 2	2004 200N		9	10	16	0.5	<2	<5	10.0		· · · · · · · · · · · · · · · · · · ·
S1 KGH 200H 250N 25 5 56 0.2 4 20 10.0 S1 KGH 200H 275N 26 7 77 0.2 5 55 10.0 S1 KGH 200H 300N 18 8 60 0.3 5 <5		ST KCH 2	222N		18	12	72	Λ 2	6	10	10 D		
S1 KGH 200H 275N 26 7 77 0.2 5 <5		ST KOH 2	2230	1	25	<u>μ</u> ε 	56	n.2	4	20	10.0		
S1 KGH 200H 300N 18 8 60 0.3 5 <5		ST KGH 2	200 230		26	7		.0.2	ς	<5	10.0		
S1 KGH 200H 325N 30 11 59 0.3 7 <5 8.0 S1 KGH 200H 350N 42 9 120 0.3 7 <5		S1 KGH 2	2001 2001	1	18	8	60	<u>ຄ.</u> 3	5	.5	10.0		
S1 KGH 200H 350N 42 9 120 0.3 7 <5 10.0 S1 KGH 200H 375N 36 7 116 0.3 11 <5		S1 KGH 2	200W 325N		30	11	59	0.3	7	S	8.0		
S1 KGH 200H 375N 36 7 120 0.3 7 K5 10.0 S1 KGH 200H 375N 36 7 116 0.3 11 <5		C4 KCH 4	20011 2201		4.2	<u> </u>	420		7		10 D		
S1 KGH 200H 400N 27 7 80 0.3 6 <5		21 KCH 2	2000 330r 2000 375N	, I	42	י. ר	114	0.3	11	ري کې	10.0		
S1 KGH 200H 425N 46 9 108 0.3 9 <5 10.0 S1 KGH 200H 450N 26 10 66 0.3 7 <5 10.0	0	ST KCH 2	2004 2730	•	27	י ד	80	0.5 N 3	4	3	10.0		
S1 KGH 200W 450N 26 10 66 0.3 7 <5 10.0	U	S1 KGH 2		I	46	9	108	0.3		Ś	10.0		
		S1 KGH 2	2004 4504	1	26	10	66	0.3	7	<5	10.0		

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REPORT: 127-6756

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Geochemic Lab Repo

PROJECT: SHASTA 123

PAGE 2

Ag Au/wt Pb Zn As Au Au/Ht SAMPLE ELEMENT Cu PPM PPB G G PPM PPM PPM NUMBER UNITS PPM <5 10.0 0.3 7 S1 KGH 200W 255 15 7 64 90 3 10 10.0 S1 KGH 200H 505 22 6 0.6 S **<**5 7.0 5 116 1.2 S1 K100E 00N 68 0.4 2 <5 5.0 S1 K100E 025N 27 <2 10 10.0 8 <5 S1 K100E OSON 14 8 74 0.5 5.0 <2 56 2 15 S1 K100E 075N 158 1.4 ٢S 10.0 **S**4 10 87 0.5 8 S1 K100E 100N 5 **(**5 10.0 51 77 0.6 S1 K100E 125N 4 ٢S 10.0 S1 K100E 150N 25 6 80 0.2 6 10.0 23 6 63 0.4 4 <5 S1 K100E 175N 10.0 3 98 0.5 4 <5 34 S1 K100E 200N <5 10.0 25 104 0.6 S1 K100E 225N 6 6 S1 K100E 250N 20 <2 43 0.7 2 10 10.0 10.0 S1 K100E 275N 17 6 46 0.3 4 <5 26 0.5 <2 <5 10.0 S1 K100E 300N 21 <2 10.0 26 3 110 0.3 5 <5 S1 K100E 325N <5 5.0 0.5 12 S1 K100E 350N 40 3 70 S1 K100E 375N 40 3 119 0.9 5 ۲5 10.0 0.3 3 **<**5 5.0 80 S1 K100E 400N 85 6 60 0.5 4 ٢S 10.0 S1 K1200W 00N 3 116 3 3 **<**5 10.0 S1 K1200W 025N 78 115 0.9 1.3 2 ٢S 10.0 S1 K1200W 050N 88 4 84 7 30 0.2 <2 <٢ 10.0 S1 K1200W 075N 7 <٢ 20 2 72 0.3 <2 5.0 S1 K1200W 100N 77 0.5 7 <5 8.0 S1 K1200W 125N 36 <2 0.5 5 <5 10.0 S1 K1200W 150N 38 130 6 5 0.5 <5 10.0 28 5 112 S1 K1200W 175N S1 K1200W 200N 25 5 110 0.6 4 20 10.0 7 4.0 6.0 30 4 88 0.7 10 S1 K1200W 225N 4.0 S1 K1200W 250N 36 <2 48 0.8 24 5 7.0 5 106 0.6 7 <5 3.0 S1 K1200W 275N 49 <5 10.0 3 76 S1 K1200W 300N 60 0.6 6 3 92 2 <5 10.0 S1 K1200W 325N 56 0.9 S1 K1200W 350N 53 4 138 0.8 4 ٢S 10.0 S1 K1200W 375N 54 9 143 -0.3 11 <5 10.0 S1 K1200W 400N 40 6 80 0.4 8 **<**5 10.0 <S 10.0 S1 KIG 200E ON 47 5 56 0.7 6 9 **<**5 10.0 S1 KIG 200E 025N 51 13 90 0.3 9 <5 5.0 S1 KIG 200E 050N 105 6 106 0.7 S1 KIG 200E 075N 61 6 10 <5 6.0 112 0.7

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Geochemic Lab Repo

	REPORT: 127	-675	5						PI	ROJECT: SI	HASTA 123	PAGE 3
•	SAMPLE NUMBER		ELEMENT UNITS	Cu PPH	Pb PPM	Zn PPM	Ag PPM	As PPM	Au PPB	Au/Ht G	Au/wt G	
	S1 KIG 200E	100	N	103	8	116	0.4	8	<5	10.0		
	S1 KIG 200E	125	N	56	, 4 , **,	120	1.3.	8	S	10.0		
	S1 KIG 200E	150	N	14	10	52	0.2	5	S	10.0		
	S1 KIG 200E	175	N	18	6	46	0.2	7	<5	10.0		
	S1 KIG 200E	200	N	25	9	60	0.1	1	<5	10.0		
	S1 KIG 200E	225	N	16	5	60	0.3	6	<5	10.0		
	S1 KIG 200E	250	N	14	10	42	0.2		<5	10.0		
	S1 KIG 2008	275	N	8	13	32	0.2	3	≮5	10.0		
	S1 KIG 200E	300	N	18	9	82	0.3	10 -	<5	10.0	1. • 	
	S1 KIG 2008	325	N	20	10	59	1.6	4	<5	10.0		
Malaka v	S1 KIG 200E	350	N	24	10	86	0.4	5	۲	10.0		
	S1 KIG 2008	375	N	87	10	83	1.7	9	< S	10.0		
	S1 KIG 2008	400	N	20	4	62	0.2	8	<5	10.0		
	S1 KIG 4008	E ON		12	4	27	0.2	3	<\$	10.0		
	S1 KIG 400E	025	N	31	11	72	0.2	4	<5	10.0		
	S1 KIG 4000	E 050	IN	29	9	78	0.3	6	<5	10.0		
\bigcirc	S1 KIG 4008	075	N.	28	9	67	0.3	4	<5	10.0		
	S1 KIG 4008	E 1 00)N	39	6	88	0.5	5	<5	10.0		
	S1 KIG 4000	125	iN .	17	10	- 76	0.3	6	<5	10.0		
	S1 KIG 400	5 150	IN	19	10	86	0.1	5	<5	10.0		ئى مەنبە بىر يېرىكى مەنبە بىر بىر يېرىكى
	S1 KIG 4008	175	iN	18	7	54	0.1	6	5	· 10.0		
	S1 KIG 400	200	IN	17	. 13	65	0.2	6	<s< td=""><td></td><td>10.0</td><td></td></s<>		10.0	
	S1 KIG 4008	225	δN .	27	10	84	0.4	8	5	10.0		
	S1 KIG 400	250)N	46	5	150	0.3	3	<s><s< td=""><td>10.0</td><td></td><td></td></s<></s>	10.0		
an thin An think an thi	S1 KIG 400	275	5N	24	10	72	0.6	5	<u>ج</u>	10.0	<u>.</u>	
	S1 KIG 400	E 30(]N	14	. 9	64	0.3	6	<۲	10.0		
	S1 KIG 400	325	5N	31	5	50	0.1	5	<5	10.0		
	S1 KIG 400	E 351)N	10	5	36	0.1	3	<5	10.0		
	S1 KIG 400	E 375	ōΝ	51	6	96	0.4	11	<5	10.0		
	S1 KIG 400	E 40	DN	26	5	60	0.2	5	<5	10.0		· · · · · · · · · · · · · · · · · · ·
	S1 L2E 0+N]		21	11	63	<0.1	8	<5	10.0		
	S1 L2E 0+2	5		23	9	60	0.1	7	<5	10.0		
	S1 L2E 0+5	0		15	. 9	60	0.2	6	<5	10.0		
	S1 L2E 0+7	S		14	7	70	0.2	7	<5	10.0		
	S1 L2E 1+0	0		13	7	80	<u>.0.2</u>	7	<5	10.0	. <u></u>	
	S1 L2E 1+2	5		26	5	82	0.1	9	<\$	10.0		
	S1 L2E 1+5	0		23	10	56	0.2	13	<5	10.0		
\cap	S1 L2E 1+7	5		14	12	44	0.3	7	<5	10.0		
话 潮	04 LOF 0.0	n' .		10	9	1.1	п 2	4	75	10.0		
	- S1 LZE Z+U	U		12	U.	. 40	. U.Z	U	10	10.0		

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	REPORT: 12	7-6756						P	ROJECT:	SHASTA 123	PAGE 4
•	Sample Number	ELEMENT UNITS	Cu PPM	Pb PPM	Zn PPM	Ag PPM	As PPti	Au PPB	Au/Ht G	Au∕⊭t G	
	S1 L2E 2+5	0	15	5	60	0.1	8	<5	10.0		
	S1 L2E 2+7	5	14	8	55	0.1	7	<5	10.0		
	S1 L2E 3+0	10	35	3	55	0.1	10	<5	10.0	•	
	S1 L2E 3+2	5	27	5	60	0.1	5	<5	10.0	and a second part and a second part of the second se	
	S1 L2E 3+5	.0		5	16	0.2	5	<5	10.0		
	S1 L1W 0+0	0	164	7	112	0.6	33	<۲	10.0		
	S1 L1W 0+2	25	24	4	96	0.1	7	<5	10.0		
	S1 L1W 0+5	0	24	4	76	0.1	1	< <u>s</u>	10.0		2
	S1 L1W 0+7	5	24	11	70	0.1	6	<5	10.0		
	S1 L1W 1+0	0	27	13	60	U.1	4	- 	10.0	· · · · · · · · · · · · · · · · · · ·	
	S1 L1W 1+2	25	28	7	64	0.1	6	ৎ	10.0	an a	
	S1 L1W 1+5	10	16	11	52	0.3	6	<১	10.0		
	S1 L1W 1+7	75	20	5	120	0.4	6	S	10.0		
	S1 L1W 2+0	10	18	.9	44	0.2	9	<5	10.0		
	S1 L1W 2+2	25	78	. 7	270	0.3	~26	<s< td=""><td>10.0</td><td></td><td>an an a</td></s<>	10.0		an a
	S1 L1W 2+5	50	44	12	164	0.2	18	<۲	10.0		
	S1 L1W 2+7	75	62	4	64	0.2	20	:≺5	10.0		
	S1 L1W 3+0	10	30	4	63	0.2	18	<5	10.0		
	S1 L1W 3+2	25	20	13	44	0.3	6	<\$	10.0		
	S1 L1W 3+5	50	31	6	86	0.2	8	<5	10.0	·	
	S1 L2W 0+()) 	39	9	120	0.1	10	<5	10.0		
	S1 L2W 0+2	25	31	7	58	<0.1	8	<5	10.0		
	S1 L2W 0+9	50	27	: 7	68	0.1	19	<5	10.0		
	S1 L2W 0+7	15	22	9	57	0.2	1	<	10.0		
	S1 L24 1+0	30	79	3	72	0.4	6	<5	10.0		
	S1 L2W 1+2	25	24	7	70	0.1	6	<۲	10.0	······	n film strike. Al
	S1 L2W 1+5	50	24	5	68	0.2	7	<s< td=""><td>10.0</td><td></td><td></td></s<>	10.0		
	S1 L2W 1+7	75	49	. 7	120	0.3	14	<5	10.0		
	S1 L2W 2+0	30	46	7	73	0.3	7	25	. 10.0		
	S1 L2W 2+2	25	25	7.	48	0.3	9	<s< td=""><td>10.0</td><td></td><td></td></s<>	10.0		
	S1 124 2+4	50	61	7	168	0.2	12	<5	10.0		
	S1 12W 2+7	15	47	8	76	0.2	15		10.0		
	S1 12W 3+	n	16	10	56	<0.1		<s .<="" td=""><td>10.0</td><td></td><td></td></s>	10.0		
	S1 124 3+2	25	19	7	64	0.1	8	<	10.0		
	S1 L2W 3+	50	33	9	82	0.3	9	~<5	10.0		
	Ct 120 3.	15	20		<u>۹</u> /	n /	2 2	/C	10 0		
	01 LZW 34	בז חח	20 20	7	00 50	ป.9 ก.1	0 1/	() 25	10.0		
1	51 LZW 4+1	บบ กเ	24	0 	70 70	0.1 0.1	14 R	· · · · · · · · · · · · · · · · · · ·	10.0		
and the second	01 100 U+	50 95	20	0	12	U.1 20 1	0 7	U - 25	10.0		
	01 L3W U*/	2J 50	JL 10	.9 10	423	τυ. 1.υ/	י ר	√C	10.0		
	91 F2M A4:	JU	42	10	173	0.3	1	 < > 	10.0		

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REPORT: 127-6	756						PROJECT: S	SHASTA 123	PAGE 5
• SAMPLE NUMBER	ELEMENT C UNITS PF	u Pb Ph Pph	Zn PPM	Ág PPM	As PPN	Au PPB	Au∕wt G	Au/wt G	
S1 L3W 0+75	2	2 6	73	<0.1	8	<5	10.0		
S1 L3W 1+00		23 6	66	0.2	8	<5	10.0		
S1 L3W 1+25		1 5	72	0.2	14	< S	10.0		
S1 L3W 1+50		6 3	61	<0.1	5	< <u>s</u>	10.0		
S1 L3W 1+75	1	5 7	46	0.3			10.0		-
S1 L3W 2+00		2 6	52	0.1	7	<5	10.0		
S1 L3H 2+25	14) 14)	80 🧑 S	- 64	0.2	8	5	10.0		
S1 L3W 2+50		18 3	50	0.2	5	<s S</s 	10.0		
S1 L3W 2+75		21 10	76	0.1	- 6	<5	10.0		
S1 L34 3+00		38 4	57	0.1	10	<\$	10.0		
S1 L3W 3+25		24 8	76	0.2	10	<5	10.0		
S1 L3W 3+50		58 7	96	0.1	8	<5	10.0		
S1 L3W 3+75	영양 같이 안 같	31 7	72	0.1	7	< S	10.0		
S1 L3W 4+00		21 6	113	8.1	11	<5	10.0		
S1 L4W 0+00	1	10 5	76	0.1	52	<5	10.0	· · ·	
S1 L4H 0+25		34 8	108	0.5	7	<5	10.0		
S1 L4W 0+50	· · · · ·	39 8	78	0.3	14	<5	10.0		
S1 L4H 0+75		16 14	72	0.2	8	< <5	10.0		
S1 L4W 1+00		20 7	76	0.2	8	<5	10.0		
S1 L4W 1+25		27 9	82	0.1	7	<5	10.0	······	n de la companya de l La companya de la comp
S1 L4H 1+50		12 10	65	0.3	8	<u></u> <5	10.0		
S1 L4W 1+75		29 9	64	0.2	6	5	10.0		
S1 L4W 2+00		22 7	65	0.2	10	5	10.0		
S1 L4W 2+25		17 7	54	0.2	6	<5	10.0		
S1 L4W 2+50		24 8	65	<0.1	9	<5	10.0		
S1 144 2+75		23 12		0.3	8	5	10.0		
S1 L4W 3+00		37 7	93	0.1	11	<5	10.0		
S1 L4W 3+25		21 9	80	0.1	11	<s< td=""><td>10.0</td><td></td><td></td></s<>	10.0		
S1 L4H 3+50		18 7	64	0.1	9	<5	10.0		
S1 L4H 3+75		23 10	78	<0.1	9	<5	10.0		
S1 L4W 4+00		18 7	62	<0.1	5	<5	10.0		



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	By	Date	Approv.By	Project No: MA22 Report No: C.933 Hining Div: Liard N.1.5.: 1041 Survey By: Z.D. Drafted By: S. Date: Oct. 1987 Nap No: 4





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10 L 200 W 544.63 544.61 544.48+ 544.391 544.69 544.65+ 1 400 W 544.37 544.63+ 544.34 544.54 544.3 544.36 544.2 544.09 544.12 400 N-544.05+ 543.864 543.68 543.92 350 N-543.87 + 543.74 543.767 543.82 300 N-543.78 543.75 543.86 t 543.68 250 N-543.76+ 543.64 543.521 543.71 200 N-543.69 543.44 543.63+ 543.7 543 150 N-543.644 543.577 100 N-543.35+ 543.31 543.31 50 N-L 200 W 0-50 5-L 400 W

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Survey By: Z.D. Date: Oct. 1987	Drafted By: Nap No:

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5	QXAT QFXT	QUARTZ CR QUARTZ-FE	YSTAL TUFFS: LDSPAR CRYSTA	L TUFFS			
4	ASTF	ASH TUFFS	; VARIABLE CO	MPOSITION			
3	LATF LXTF	LITHIC ASH TUFFS; LITHIC CRYSTAL TUFFS; FINE GRAINED FELSIC TUFFS; QUARTZ-SERICITE SCHIST					
2	MTFW	MAFIC TUFFS AND WACKES; FINE GRAINED CHLORITIC SCHISTS WITH FRAGMENTAL TO EPICLASTIC TEXTURES					
1	BSLT	SLT BASALT; FINE TO MEDIUM GRAINED CHLORITIC SCHISTS; COMMONLY WITH COARSE EPIDOTE KNOTS, MAY INCLUDE SOME MTFW					
	411-11-120	LIMITS OF	OUTCROP				
Þ	Geological contact - defined, inferred, approximate					l	
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