ARIS SUMMARY SHEET

District Geologist, Nelson Off Confidential: 92.04.15 ASSESSMENT REPORT 21505 MINING DIVISION: Fort Steele **PROPERTY:** Lamb LAT 49 17 00 LONG 116 00 00 LOCATION: UTM 11 5459215 572728 082F08E 082G05W NTS 001 Purcell Belt (Sullivan) CAMP: Lamb 14,Lamb 20,Lamb 23,Purcell 2,Purcell 4,Selkirk 4,Cozy 1-4 CLAIM(S): Selkirk 6 Klewchuck, P. Morgan, L.D. Fairclough, F. Gass, N. OPERATOR(S): AUTHOR(S): Klewchuck, P. **REPORT YEAR:** 1991, 16 Pages COMMODITIES SEARCHED FOR: Copper, Gold **KEYWORDS:** Helikian, Purcell Supergroup, Aldridge Formation, Siltstones Quartzites,Gabbro sills,Kitchener Formation,Dolomitic siltstones Moyie fault WORK DONE: Geochemical, Geophysical, Drilling DIAD 27.4 m 1 hole(s);EX HMIN 9 sample(s) ;ME 1.0 km MAGG Map(s) - 1; Scale(s) - 1:50039 sample(s) ;ME SOIL

ASSESSMENT REPORT

on

GEOCHEMISTRY, GEOPHYSICS, DIAMOND DRILLING

LAMB CLAIM GROUP

Lamb Creek Area

Fort Steele Mining Division

NTS 82 F/8 E & 82 G/5W

Latitude 49⁰ 17'N Longitude 116⁰ 00'W

Owners and Operators

Frank Fairclough Nick Gass Gordon Johnstone Peter Klewchuk Lloyd Morgan

Report by Peter Klewchuk Geologist

July 12, 1991

LOG NO: JUL	19	1991	RD.
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GEOLOGICAL BRANCH ASSESSMENT REPORT

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1.00 INTRODUCTION

1.10 Location and Access

The Lamb group of mineral claims are located at the headwaters of Lamb Creek, approximately 30 kilometers southwest of Cranbrook, B.C. The claims are centered approximately at 49° 17'N, 116° 00'W on NTS map sheets 82 F/8 E and 82 G/5 W.

Access is by road from Cranbrook south along Highway 3/95 to just north of Moyie Lake, then via the Lamb Creek logging road. Older but useable logging roads provide access to the claims on both sides of Lamb Creek (Fig. 1).

1.20 History

A small placer gold operation has been operated in the headwaters of Lamb Creek, near the junction of Irish 1 & 4, Purcell 2 & 4 mineral claims (Figs. 2 and 3). The immediate area of the claim block has no known history of previous mineral exploration.

1.30 Property

The Lamb property reported on here consists of 18 2-post mineral claims (Fig. 2) with details as follows:

Claim Name	Record No.	Record Date	Due	Owner
IRISH 1	4387	90-04-13	1992	Fairclough
IRISH 2	4388	90-04-13	1992	ŧ1 Ű
IRISH 3	4389	90-04-13	1992	H -
IRISH 4	4390	90-04-13	1992	¥
LAMB 13	4738	90-07-07	1992	Klewchuk
LAMB 14	4739	90-07-07	1992	11
LAMB 20	4385	90-04-13	1993	11
LAMB 21	4386	90-04-13	1993	**
LAMB 22	4894	90-09-21	1993	Morgan
LAMB 23	4895	90-09-21	1992	n
LAMB 24	4896	90-09-21	1992	21
LAMB 25	4897	90-09-21	1992	11
LAMB 26	4898	90-09-21	1992	Ħ
LAMB 27	4899	90-09-21	1992	11
SELKIRK 1	4379	90-04-13	1992	Fairclough
SELKIRK 2	4380	90-04-13	1992	
SELKIRK 3	4381	90-04-13	1992	9 E
SELKIRK 4	4382	90-04-13	1992	Į1
SELKIRK 5	4383	90-04-13	1992	11
SELKIRK 6	4384	90-04-13	1992	88



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Figure 2. Lamb Group Claim Map

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Claim Name	Record No.	Record Date	Due	Owner
PURCELL 1	4363	90-04-13	1992	Gass
PURCELL 2	4364	90-04-13	1992	£\$
PURCELL 3	4365	90-04-13	1992	99
PURCELL 4	4366	90-04-13	1992	Ħ
HEMI 1	4834	90-09-09	1992	Johnstone
HEMI 2	4835	90-09-09	1992	TT
HEMI 3	4836	90-09-09	1992	11
HEMI 4	4837	90-09-09	1992	H1
HEMI 5	4838	90-09-09	1992	11
HEMI 6	4839	90-09-09	1992	**
HEMI 7	4840	90-09-09	1992	11
HEMI 8	4841	90-09-09	1992	88
HEMI 9	4842	90-09-09	1992	P#
HEMI 10	4843	90-09-09	1992	11
COZY 1	4521	90-09-09	1992	Fairclough
COZY 2	4522	90-09-09	1992	H
COZY 3	4523	90-09-09	1992	61
COZY 4	4524	90-09-09	1992	· \$1

1.30 Program

In 1990, soil and stream geochemistry, geophysics and diamond drilling were used to evaluate parts of the Lamb claim group.

2.00 GEOLOGY

The Lamb property straddles the Moyie Fault, a major northeaststriking, northwest-dipping reverse fault which displaces Precambrian Aldridge Formation on the northwest against younger Precambrian Kitchener Formation on the southeast. The southeast portion of the property is underlain by Creston Formation which occurs stratigraphically between the Aldridge and Kitchener Formations.

The Aldridge Formation is composed of fine-grained siliciclastic rocks - argillites to fine-grained impure quartzites - of turbidite affinity. The Creston Formation is a shallow water sequence of siltstones and quartzites while the Kitchener Formation is mainly siltstone and dolomitic siltstone.

Extensive silicification occurs associated with the Moyie Fault in places on the Lamb property where exposure allows observation.

Copper mineralization occurs on fractures in the Kitchener Formation on the immediate footwall side of the Moyie Fault.





3.00 GEOCHEMISTRY

3.10 Heavy Mineral Stream Geochemistry

A small placer gold operation is known to have been worked in the upper Lamb Creek area, within the claim block. To help evaluate the property's potential for lode gold mineralization, nine heavy mineral samples were collected on the Lamb claim group. Approximately two kilograms of active stream material was collected at each sample site through a 20 mesh screen. The samples were sent to Acme Analytical Laboratories in Vancouver where the heavy fraction was obtained by passing the samples through a heavy liquid. The heavy fraction was then analyzed for a 30 element ICP package and geochemical gold by standard geochemical techniques (Appendix 1). Sample sites are shown on Fig. 3 and complete geochemical results are provided in Appendix 1.

The results include three encouraging analyses. Sample LH-05 located downstream of the Moyie Fault and below the collar site of drill hole L-90-1, returned a gold value of 286 ppb. Samples LH-08 and LH-09 returned anomalous values in copper and arsenic. These are of interest because they come from the stream where placer gold has been produced in the past.

3.20 Soil Geochemistry

Two soil lines were run in an area where copper mineralization occurs in bedrock, as fracture coatings and veins within brecciated Kitchener Formation siltstones and dolomitic siltstones. One soil line also occurs near the gold placer workings.

Soils were collected from the B Horizon, at an approximate depth of 15 or 20 cm. They were placed in Kraft paper bags, dried and shipped to Acme Analytical Laboratories Ltd. in Vancouver where they were analyzed for a 30 element ICP package and geochemical gold by standard laboratory procedures (Appendix 1).

The line locations are shown on Figure 3; Figure 4 shows a summary of copper, lead, zinc and gold values and complete geochemical analyses are provided in Appendix 1.

Results show a moderate copper anomaly of values >30 ppm on the east line, reflecting the copper mineralization seen in bedrock in this vicinity. There tends to be corresponding higher silver with the copper, although values are generally low. No other obvious anomalous results were detected.



Figure 4. Summary of Soil Geochem Results. Values for Cu, Pb, Zn (ppm), Au (ppb). For location see Figure 3.

4.00 GEOPHYSICS

A ground magnetic survey was done on the Cozy claims, across a north-striking fault which hosts guartz vein material. Location of the survey is given on Fig. 3 and Fig. 5 provides the detailed survey data and magnetic contours.

The instrument used was a Geometrics Portable Proton Magnetometer Model G-816 with a detection capability of one gamma. A system of closed-loop traverses was used to minimize the effects of diurnal variation. Four 250 meter long survey lines were spaced 25 meters apart with readings taken every 10 meters along the lines.

The results show a variation in magnetic response of about 260 gammas across the survey area. Two localized lows occur immediately east of the quartz vein-bearing fault, but not in the vicinity of the exposed quartz vein. The lows each occur on only one line and are one station responses. If the results are valid, they may be indicating localized more massive development of quartz within the fault zone.

The north-striking fault which bisects the survey area appears to mark a magnetic boundary between rocks of higher magnetic response on the east, suggesting that magnetic surveying is a useful technique for providing geologic information.

5.00 DIAMOND DRILLING

One EX hole was drilled to 27.4 meters on the Selkirk 4 mineral claim. The hole was oriented at an azimuth of 282 degrees and angled at -48 degrees. The hole was collared to test a sheared, silicified, copper-mineralized zone within Kitchener Formation siltstones and in the immediate footwall of the Moyie Fault (Fig. 3).

The hole was entirely within Kitchener Formation siltstones which are sheared, schistose, chloritic and sericitic. Minor guartz veining is common and cataclastic textures occur through much of the core. Limonitic spots noted in the core may be from weathered pyrite. No copper mineralization was noted in the core although copper occurs on surface in association with guartz veins immediately ahead of the drill hole collar.

Poor recovery was experienced due to the small core size.

A log of the drill hole is provided in Appendix 2 and Figure 6 is a graphic log. The core is stored at 402 Briar Street in Cranbrook, the home of F. Fairclough.

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Figure 6. Graphic Log, DDH L-90-1

6.00 CONCLUSIONS

- 1. Heavy Mineral sampling has detected gold, copper and arsenic anomalies on the Lamb claims. Gold may be associated with the major Moyie Fault.
- 2. Low copper values in soils near a bedrock occurrence of copper mineralization are restricted in extent and suggest the surface bedrock mineralization is not very extensive.
- 3. Results of a detailed ground magnetic survey suggest that localized magnetic lows are associated with guartz veining within a fault. The magnetometer appears to be a useful tool for tracing geologic fault contacts.
- 4. Drill Hole L-90-1 did not intersect any of the copper mineralization evident on surface in the vicinity of the drill collar but drill core provides evidence of considerable cataclastic deformation within the nearby Moyie Fault. Anomalous gold mineralization in one heavy sample draining the fault warrants follow-up exploration.

1.00 STRIEMENT OF COSTS	
Heavy Sampling	
2 man-days @ \$170.00/day	\$340.00
2 days truck @ \$50.00/day	100.00
Analyses and freight	221.75
	\$661.75
Soil Sampling	
2 man-days @ \$170.00/day	\$340.00
2 days truck @ \$50.00/day	100.00
Analyses and freight	383,65
	\$823.65
Magnetometer Survey	
1 man-day @ \$170.00/day	\$170.00
truck	50.00
Magnetometer rental	25.00
	\$245.00
Diamond Drilling	
6 man-days @ \$170.00/day	\$1020.00
3 days truck @ \$50.00/day	150.00
Drill, bits, fuel @ \$175.00/day	525.00
	\$1695.00
Core logging and report	\$450.00
Drafting	240.00
	\$690.00
TOTAL COS	TS

STATEMENT OF COSTS

\$4115.40 ========

8.00 AUTHOR'S QUALIFICATIONS

As author of this report I, Peter Klewchuk, certify that:

- 1. I am an independent consulting geologist with offices at 246 Moyie Street, Kimberley, British Columbia.
- 2. I am a graduate geologist with a BSc degree (1969) from the University of British Columbia and an MSc degree (1972) from the University of Calgary.
- 3. I am a Fellow in good standing of the Geological Association of Canada.
- 4. I have been actively involved in mining and exploration geology, primarily in the province of British Columbia, for the past 18 years.
- 5. I have been employed by major mining companies and provincial government geological departments.

Dated at Kimberley, British Columbia, this 12th day of July, 1991.

Pet Klint

Peter Klewchuk Geologist ACME ANALYTICAL LABORATORIES LTD.

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PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ALYSIS CERTIFICATE

LAMB CR

Frank Fairclough File # 90-4578 Page 1 402 Brian Ave, Crambrook BC V1C 485

AMPLE#	Ho ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni	Co ppm	Mn ppm	Fe X	As	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppre	Sb ppm	Bi ppm	V ppm	Ca X	P X	La ppm	Cr ppm	Mg X	Ba Ti ppm X	8 ppm	AL X	Na X	K M X DDM	Au ⁺	AF
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- SAMPLE TYPE: P1 TO P2 SOIL P3 ROCK AU* ANALYSIS BY ACID LEACH/AA FROM 10 GH SAMPLE.

DATE RECEIVED: SEP 18 1990 DATE REPORT MAILED:

Sept 25/90 SIGNED BY .D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS



Frank Fairclough FILE # 90-4578

SAMPLE# Cu Pb Zn Ag Ni No Co Mn Fe AS U Au Th Sr Cd Sb Bi V. Ca 🚿 P La Cr Mg Ba 🔍 Ti B AL Na DDR: **ODB** pon pon pon ppm ppm ppm % ppn ppm ppm X X ppm ppm ppm. ppm DDM . **POR** ppm DOM * **ppm** ×. X X X ppm ppb ppm. 300E 50S 12 74 8 A. 8 503 2.03 6 1 11 12 5 .2 ND 3 5 2 3 19 .12 .037 21 15 .77 146 .05 3 1.95 .01 .06 88 P 1 56 .2 350E 50N 1 16 14 14 8 419 2.16 9 5 7 .2 ND 5 2 2 15 .15 .026 32 17 1.12 79 04 4 1.68 .01 .11 1 400E 50N 1 14 15 54 1 13 6 8 202 2.42 5 ND 5 5 🏼 .2 2 2 22 .08 .026 25 17 1.24 4 1.93 .01 .09 ésé i 1

ACME ANALYTICAL LABORATORIES LTD.

. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Peter Klewchuk PROJECT LAMB/HARMONY File # 90-4815 246 Moyie St., Kimberley BC V1A 2N8

SAMPLE#	Mo	Cu	₽b	Zn	Ag	j Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	٧	Ca	P	La	Cr	Ma	8a	TI	B	AL	Na	K	86	Autor	H.N.	H.M
	ppm	ppm	ppn	ppm	рря	ppm	ppm	ppm	*	ppm	ppm	ppm	ppin	ppm	ppm	ppm	ppm	ppm	X	*	ppm	ppm	X	ppm	*	ppm	. X	*	7	ppm	ppb	X	gm
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LH-03	1	43	12	48	៍តិ	19	26	407	5.07	12	5	ND	Ť	11	1	2	5	63	76	037	12	20	54	27	20	2	1 70	.07	40		47	2.02	02.YU
LH-04	1	58	23	48	2	31	67	305	5.91	20	5	ND	4	13	-	5	2	~	47	015	0	34		22		2	1.07	.00	. 10		74	4 53	/4.20
LH+05	1	51	22	56	.2	28	44	371	4.75	18	5	ND	5	15	.9	2	2	69	.57	015	11	37	.47	30	.21	5	1.16	.03	.04		286	1.22	31.80
LH-06	1	38	8	39	2	24	29	421	11.15	26	5	ND	5	13	2	2	4	67	-55	017	13	20	45	37	27	,	06	07	٥.		•	97	14 00
LH-07	1	51	26	48	.2	38	45	665	18.43	26	9	ND	9	13	2	2	3	80	.50	010	10	38	36	- 67	-54	5	.70 R1	.05	.04			.03	9 70
LH-08	1	78	- 47	56	.2	41	56	600	12.08	95	7	ND	5	12	2	6	3	72	.57	ักรถ	12	31	.51	76	52	ž	08	.04	.05		10	4 10	27 70
LH-09	1	104	29	53	_3	34	49	527	12.40	68	5	ND	7	12	2	5	ž	73	.60	028	11	35	51	47		ž	1 01	.04	.05		2	1 02	24 00
HH-01	1	36	21	44	.1	40	39	353	27.47	6	5	ND	10	4	.2	2	10	62	.03	.010	22	41	.24	27	.08	2	.54	.01	.04	1	11	1.03	18.60
HH-02	1	56	21	55	1.2	64	70	396	33.77	26	7	4	12	6	2	3	12	71	.05	010	20	51	23	77) no	6	54	01	05		8082		17 10
STANDARD C/AU-S	19	58	38	132	7.0	72	31	1056	3.97	41	20	8	39	53	18.0	16	19	56	.45	.095	38	60	.90	181	.07	39	1.89	.06	.14	13	51		13.10

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. - SAMPLE TYPE: H.M. AU** ANALYSIS BY FA\ICP FROM 10 GM SAMPLE.

Oct 3/90. DATE RECEIVED: SEP 25 1990 DATE REPORT MAILED:

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APPENDIX 2. Diamond Drill Log, DDH L-90-1

Completed September 11, 1990 Core Size EX Azimuth 282 degrees Dip -48 degrees Length 27.4 meters (90 feet) Target Test quartz veining within sheared Kitchener Formation siltstone on Footwall side of Moyie Fault. Copper mineralization is present with quartz veining on surface.	DRILL HOLE Commenced Completed Core Size Azimuth Dip Length Target	L-90-1 September 8, 1990 September 11, 1990 EX 282 degrees -48 degrees 27.4 meters (90 feet) Test quartz veining within sheared Kitchener Formation siltstone on Footwall side of Moyie Fault. Copper mineralization is present with quartz veining on surface.
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- 0 -10.7m Siliceous siltstone. Light gray-green colored. Chloritic and sericitic throughout. Strong cleavage / shearing at about 70 degrees to core axis. Some bands with cataclastic texture - fine lensey banding with differentiation of more siliceous ('quartz vein') bands. Lenses of milky white quartz are present, most with weak limonitic staining on healed fractures.
- 10.7-13.7m Phyllitic siliceous siltstone. Light gray-green color; chloritic and sericitic. Lenses of milky white quartz up to 4cm wide are scattered through the siltstone, generally parallel to cleavage / shearing at about 70 degrees to core axis. Limonitic spots are common throughout, as from oxidation of fine-grained pyrite, although no fresh sulfides are noted.
- 13.7-21.3m Similar to above but with some sections displaying strong cataclastic or mylonitic texture. Fine lensey banding contains apparent recrystallized quartz and crushed, healed siliceous siltstone. A few quartz lenses are present, one with stronger development of limonite, possibly with specular hematite.
- 21.3-27.4m No core recovered; cuttings collected display similar characteristics as those seen in the upper part of the hole. Siliceous siltstone, chloritic and sericitic, evidently guite strongly cleaved / sheared.

No obvious copper mineralization was noted in the core although no analyses have been made and considerable core loss was experienced due to the sheared nature of the rock and the small core diameter.

It is concluded that the drill hole is entirely within strongly deformed Kitchener Formation siliceous siltstones. The major Moyie Fault (vertical displacement in the order of 4500 meters in the area of the drill hole) occurs immediately to the northwest of the drill hole. Deformation seen in core, including extensive cataclastic texture, is evidently due to movement along this major fault.

Core logged by Peter Klewchuk, Geologist.

Peter Themas

