# REPORT ON CHAPLEAU RESOURCES LTD.

SUN CLAIMS

South Moyie Lake Area Southeastern British Columbia

826/4

October, 1991

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#### REPORT ON CHAPLEAU RESOURCES LTD.

#### SUN CLAIMS

# Southern Moyie Lake Area Southeastern British Columbia

#### 1.00 SUMMARY

The Sun claims were acquired by Chapleau Resources Ltd. in 1991. The 32 two post claims are located 30 kilometers south of Cranbrook, B.C. and about 5 kilometers south of Moyie Lake, in the Fort Steele Mining Division, reference map NTS 82 G/4 W.

The claims cover an area underlain by Helikian age Aldridge Formation rocks, which host the Sullivan Orebody immediately north of Kimberley, B.C. Within the property, the Aldridge Formation rocks have been intruded by Precambrian gabbroic and dioritic composition sills and dikes.

Minimal work has been completed on the property. Prospecting has identified strata-bound lead-zinc mineralization and bedded massive tourmalinite, a feature of the Sullivan deposit. Preliminary VLF-EM geophysical work has detected an anomaly corresponding with a structural break that may host vein sulfides and may be related to the strata-bound mineralization. The association of stratiform and vein sulfides is prevalent in the Sullivan area.

The Sun claims represent a good exploration target and warrant an evaluative exploration program of \$75,000 to define drill targets according to the proposed work program.

#### 1.00 INTRODUCTION

This report was requested by Mr. William Daly of Chapleau Resources Ltd. to provide an independent opinion of the Sun claims and, if warranted, to recommend an exploration program.

#### 1.10 Location and Access

The Sun claims are located 30 kilometers due south of Cranbrook, B.C. and 5 kilometers south of Moyie Lake, in the Fort Steele Mining Division, reference map 82 G/4 W (Figures 1 and 2).

Good access by road exists from Highway 3/95 along the Sundown Creek logging road and a new logging road which crosses the lower portions of Sundown and Stone Creeks; both roads cross parts of the claim block. Elevation on the property ranges from 900 to 1500 meters with annual precipitation of about 30 cm.

The claims are located immediately north of Highway 3/95. They are at low elevation and have good year-round road access; topographically the claims are very favourably located for cost-effective exploration.

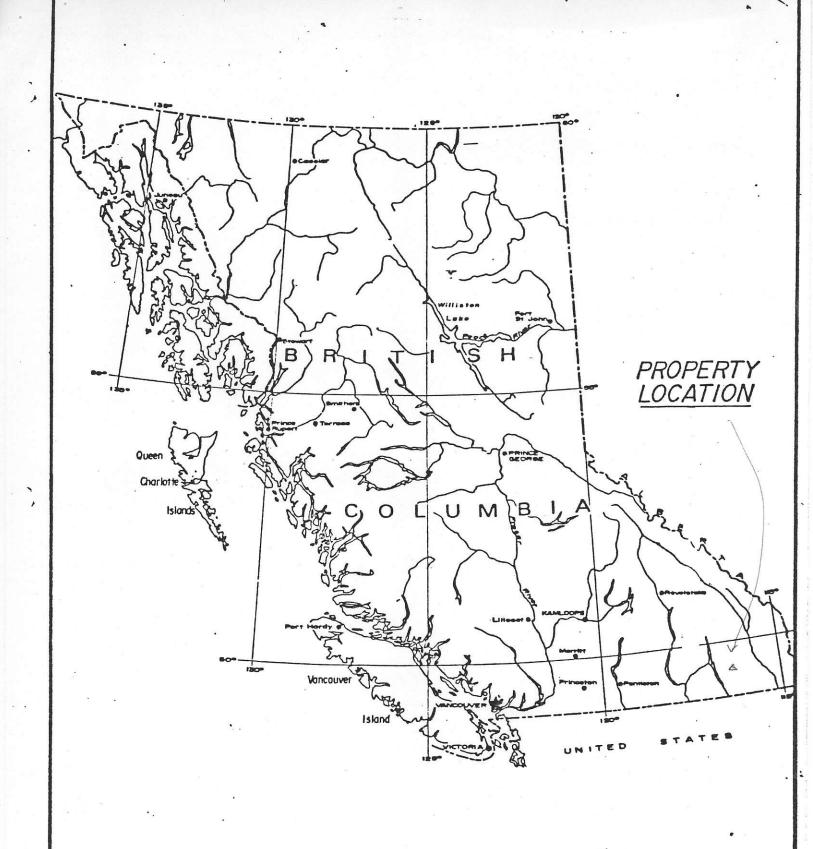
## 1.20 Property

The Sun property consists of 32 two post claims, Sun 1 to 32, held directly by Chapleau Resources Ltd. The claims were staked in April and May of 1991. They have been verified by the author as validly recorded at the Gold Commissioners office in Cranbrook. Their location and configuration is shown in Figure 2 and Appendix 1 is a reference list of the claims.

#### 1.30 Previous Work

Limited mineral exploration has occurred in the area of the Sun claims. The stratabound lead-zinc mineralization exposed in Sundown Creek has been staked in the past but only minimal work, such as hand trenching, has been completed.

Cominco Ltd. holds the Ald claims to the northeast. Available assessment reports show geochemical analyses of rock chips from a deep petroleum exploration-related drill hole. This hole was drilled less than 3 kilometers north of the Sun claims. A significant portion of the hole provided strongly anomalous lead and zinc values up to 2440 ppm for each element. Selected analyses for the upper portion of the hole, taken from Assessment Report 16,681, are provided in Appendix II.

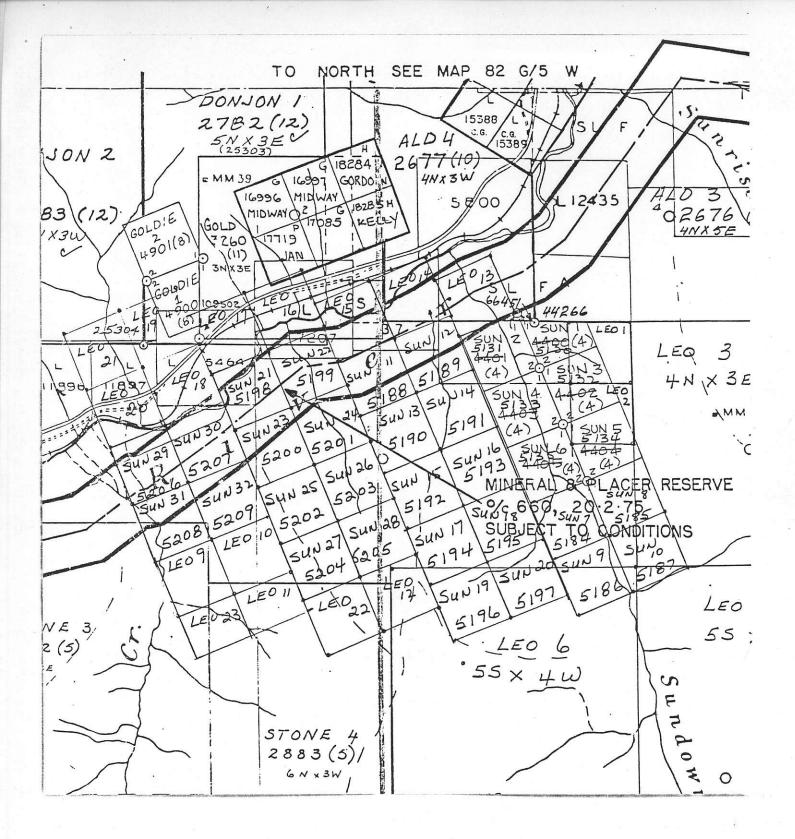


SUN CLAIMS

# LOCATION MAP

Km 100 50 0 100 200 300 400 Km.

Milwe 100 50 0 100 200 Milwe



Minnova holds the Stone claims to the southwest of the Sun claims. Two drill holes totalling 519.4 meters were completed in 1989 on targets defined by earlier geophysical (CSAMT and Gravity) surveys. One of the holes encountered strong concentrations of bedded iron sulfides.

A small previously-operated gold deposit, the Midway Mine, occurs less than 500 meters north of the Sun claims. Gold mineralization occurs in a northerly-striking quartz vein which cross-cuts Middle Aldridge stratigraphy.

Since acquisition of the Sun claims, Kokanee Explorations Ltd has staked available ground adjacent to and between these claim blocks.

#### 3.00 GEOLOGY

## 3.10 Regional Geology

The Sun claims lie within the central portion of the Purcell Anticlinorium which is comprised of up to 11 kilometers of mostly fine-grained clastic and carbonate rocks. The oldest rocks of this Helikian age sequence are the deep-water environment Aldridge Formation siltstones and quartzites. This formation is host to the world-class Sullivan orebody at Kimberley, B.C., approximately 50 kilometers north of the Sun claims. The Sullivan orebody originally contained about 160 million tons of 12% lead and zinc with significant silver and would be worth more than 22 billion dollars at today's metal prices.

The Aldridge Formation is intruded by numerous gabbroic and dioritic composition sills and dikes. These are found in the vicinity of the Sullivan deposit and on the Sun claims.

The Aldridge Formation is overlain by shallower water quartzites of the Creston and Kitchener Formations. These units are not present in the immediate area of the Sun claims.

The Purcell Anticlinorium is cut by a number of late, regional northeast-trending faults. These faults appear to follow the loci of older structures that had been active intermittently, and locally modified the type, distribution and thickness of late Proterozoic and Paleozoic sediments (Lis and Price, 1976). Such changes indicate that, at least locally, these fault structures were active during deposition of Purcell strata (Hoy, 1979, 1982) and thus may have influenced the deposition of Sullivan-type base metals as they were vented to the sea floor.

The Sun claims straddle the axis of the Moyie Anticline, a local feature of the Purcell Anticlinorium which extends southward into the U.S.A. In the vicinity of the Sun claims a northeast-oriented fault occurs along the axis of the anticline. A series of base metal, gold and tourmalinite occurrences along this structure suggest it was a controlling influence on mineralizing processes.

Seven kilometers north of the Sun property, the St. Eugene lead-zinc-silver vein, with approximately 1.2 million tons of former production, occurs immediately east of the fault. Just north of the Sun property is the former-producing Midway gold mine, less than two kilometers west of the fault. Massive bedded tourmalinite and stratabound lead-zinc mineralization occur proximal to the fault on the Sun claims and a further occurrence of massive tourmalinite is known at Mount Mahon, about 13 kilometers south of the Sun claims and along the fault structure. Furthermore, the deep petroleum exploration-related drill hole from which Cominco obtained significant anomalous lead and zinc values, is located immediately east of this northeast fault which parallels the axis of the Moyie Anticline.

An intensely mineralized corridor at Kimberley, encompassing the Sullivan, Stemwinder and North Star orebodies is NNE-oriented. The northeast fault which parallels the axis of the Moyie Anticline across the Sun claims may be a similar mineralized corridor.

# 3.20 Property Geology

The Sun claims are underlain by rocks of the Aldridge Formation, the same formation that hosts the world-class Sullivan orebody at Kimberley, 50 kilometers to the north. Regional mapping has defined a NNE-oriented anticline with gently dipping limbs. The Sun claims straddle the axis of this Moyie Anticline and bedrock on the property is of gently dipping Middle Aldridge siltstones and quartzites. These Aldridge rocks are intruded by gabbroic and dioritic composition dikes and sills of the Moyie Intrusions.

Three features of possible economic significance have been identified on the property:

- 1. A 1 to 1.5 meter thick quartzite bed carries disseminated galena and sphalerite for at least 150 meters of exposed strike length. The bed is exposed on the eastern edge of the property, parallelling Sundown Creek (Figure 3). One grab sample (57967, Appendix III) shows strong base metal values.
- Further to the west, bedded massive tourmalinite occurs in road cuts near the west part of the property. Massive tourmalinite is developed in the footwall of the Sullivan orebody and is considered an integral part of the mineralizing process.

3. An ESE-oriented structural break crosses the Sun claims; this break is parallel in orientation to both the St. Eugene massive sulfide vein and the Vine gold-base metal vein located 7 and 20 kilometers respectively north of the Sun claims. A reconnaissance VLF-EM geophysical line along the Sundown Creek road successfully detected this structure as an anomaly. This structure is an important target for vein massive sulfides on the Sun claims.

The association of stratabound sulfides, massive bedded tourmalinite and possible vein sulfides with a St. Eugene / Vine attitude, combine to make the Sun claims an important exploration target for stratiform zinc-lead-silver mineralization like that at the Sullivan.

#### 4.00 CONCLUSIONS AND RECOMMENDATIONS

The initial prospecting activity on the Sun claims has successfully identified a favourable geological environment with stratabound lead and zinc sulfide mineralization.

Further exploration is warranted to systematically evaluate the stratabound mineralization, the massive bedded tourmalinite and the ESE structure which is a VLF-EM anomaly. These features may all be part of a northeast mineralized corridor which parallels the axis of the Moyie Anticline.

Exploration should include detailed prospecting, geological mapping, soil and rock geochemistry, geophysics and trenching. This should be followed by exploration drilling of the best defined targets.

An estimated \$75,000 is required to define drill targets on the property.

		Page 9
5.00 EXPENDITURE OUTLINE		
Definition of Drill Targets		
<ol> <li>Grid establishment, line-cutting 10</li> <li>Geological mapping and Prospecting</li> <li>Soil and Rock Geochemistry</li> <li>Geophysics</li> <li>Trenching</li> <li>Reporting and Supervision</li> </ol>	km	\$ 4,500 14,000 16,000 18,000 7,000 8,000
	Sub-total	67,500
7. Contingency (11%)		7,500
	TOTAL	\$75,000 ======
Phase 2 Diamond Drilling		
<ol> <li>Diamond Drilling 700m @ \$110.00/m</li> <li>Geology, Supervision, Reporting</li> </ol>		\$77,000 23,000
	TOTAL	\$100,000 ======

APPENDIX 1. List of Claims

Claim	Record Number	Record Date
Sun 1 2 3 4 5 6 7	5130 5131 5132 5133 5134 5135	April 22, 1991
8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26	5135 5184 5185 5186 5187 5188 5189 5190 5191 5192 5193 5194 5195 5196 5197 5198 5199 5200 5201 5202 5203	May 5, 1991
27 28 29 30 31 32	5204 5205 5206 5207 5208 5209	H H H H

SITUATED IN THE FORT STEELE MINING DIVISION OF THE PROVINCE OF BRITISH COLUMBIA, NTS 82 G/4  $\mbox{W}$ 

APPENDIX II Cominco Deep Hole Geochemistry
From B.C. Assessment Report 16,681
Geochemical AA Analyses of Drill Cuttings
Samples are of 3 meter intervals
Selected Analyses

Meters from Collar	ppm Pb	ppm Zr	n	Meters from Collar	ppm Pb	ppm Zn
63	430	72		654	24	93
135	510	152		657	745	1820
138	65	70		660	401	794
141	954	131		663	629	1330
219	284	233		666	480	1090
234	16	322		669	177	309
600	319	251		723	524	74
603	1630	1002		768	103	160
606	596	488		771	125	161
609	94	121		774	134	153
612	90	243		777	2440	986
615	229	. 320		780	172	173
618	127	282		783	158	126
621	106	255		786	111	101
624	77	263		789	22	67
627	84	214		792	126	152
630	58	244		795	295	2440
633	74	165		798	44	208
636	31	152		867	114	156
639	38	130		870	136	116
642 645 648 651	32 14 81 585	129 56 185 1370		909	1740	701

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 TOM File # 90-0876

246 Moyie St., Kimberley BC V1A 2N8

SAMPLE#	Мо	Cu	Pb	Zn	Ag	Ni	Со	Mn	Fe	**********	U	Au	Th	Sr	Cd Sb ppm ppm	T	V ppm	Ca %	P Y	La ppm	Cr Mg		BAL ppm %	Na %	K %	W A ppm	u** ppb
	bbu	ppm	ppm	ppiii	bbw	ppm	ppm	ppm		ppm	ppm	ppm	ppm	ppm	bbut bbu	PP	PP			PP	PP	FF	FF			ore:	
в 52151	3	19	2	27	. 3	11	12	63	3.33	16	5	ND	1	5	1 2	2	38	.38	.178	4	8 2.87	7 .0	2 2.25	.01	.01	1	4
B 52152	4	3032	141	49	4.2	125	313	161	29.37	380	5	ND	6	9	1 14	23	11	. 25	.034	4	11 .11				.06	. 1	38
B 52153	1	54	5	5	.4	11	11	1228	3.50	12	5	ND	3	31	1 2	2	5	11.17	.004	2	3 4.52	6 .0		.01	.01	1	2
B 52154	1	46	4	6	. 3	7	22	944	1.69	7	5	ND	4	16		2	2	6.21	.020	11	3 2.92	28 .0		.01	.14	1	9
B 52155	1	426	2	91	.5	27	39	536	7.73	55	5	ND	1	8	1 2	2	56	.96	. 136	22	11 2.95	49 .0	14 4.10	.01	.12	1	5
														8													
B 52156	3	22	2	11	2	25	35	590	2.06	25	5	ND	1	11	<b>1</b> 1 2	2	21	1.43	.060	6	13 2.76	48 .0			.04	1	6
В 52157	3	21	25	48	.3	19	43	167	9.64	68	5	ND	1	8	1 2	3	65	. 15	.135	9	10 5.21	34 .0			.14	1	5
B 52158	3	10	2	30	1	16	21	119	5.04	13	5	ND	2	5		2	23	.10	.034	12	15 3.05	25 .0			.11	1	4
B 52159	2	20	2	49	2	12	19	92	6.92	48	5	ND	1	5	1∂ 2	2	68	.18	.123	15	13 5.30	72 40	7 4.71	.01	.03	1	7
В 52160	1	2	3	10	4	3		2370		4	5	ND	2	39	1 2	2	2	16.39	.006	10	1 7.14	13 .0	2 .16	.01	.02	1	6
																				2.2							
B 52161	1	78	2	50	.3	26	27	565	5.71	5	5	ND	2	12 🖠	‱1⊝ 2	2	53	2.40		14	9 5.46	00000000	0%		.11	1	10
B 52162	3	151	2	38	.2	31	30	1642	5.08	16	5	ND	1	8	<b>∞1</b> 0 2	2	42		.299	7	15 3.11				.06	1	111
B 52163	2	9	20	34	. 4	17	30	89	6.06	49	5	ND	1	5	1: 2	2	73		.159	3	13 6.79				.05	1	20
B 52164	1	5	3	35	.1	14	19	93	4.36	15	5	ND	1	4	· 1 2	2	65		.119	6	9 6.75				.07	1	1
B 52165	2	11	11	19	.1	9	24	66	3.72	35	5	ND	1	5	1 4	2	51	.28	.166	7	11 3.98	18 .0	8 2.62	.01	.02	1	15
	R.						100000					10000000		_ 3		_				40	40 45			04	00		40
B 57967 Sundown	3	66	8633	9650	8.1	24	13	31	1.30	2	5.	ND	2	3	79 8		. 1	FIGURE STATE .	.011	12	10 .12				.09		19
B 57968	1	59	17	46	1.2	- 5	3	62		194	5	4	5	1 8	1 13		2		.003	3	3 .03				.02		185
STANDARD C/AU-R	18	58	37	132	6.8	64	31	1054	3.95	41	21	7	38	48	18 15	17	58	.50	.090	38	56 .92	173 .08	40 1.95	.06	.13	11	499

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: ROCK AU\*\* ANALYSIS BY FA/ICP FROM 10 GM SAMPLE.