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GEOCHEMICAL REPORT

on the

BARNES 1 - 8 MINERAL CLAIMS

Barnes Creek Area  
Slocan Mining Division  
British Columbia

NTS: 82L/1E,1W  
50°04' North, 118°14' West

OWNER: R.H. McMILLAN

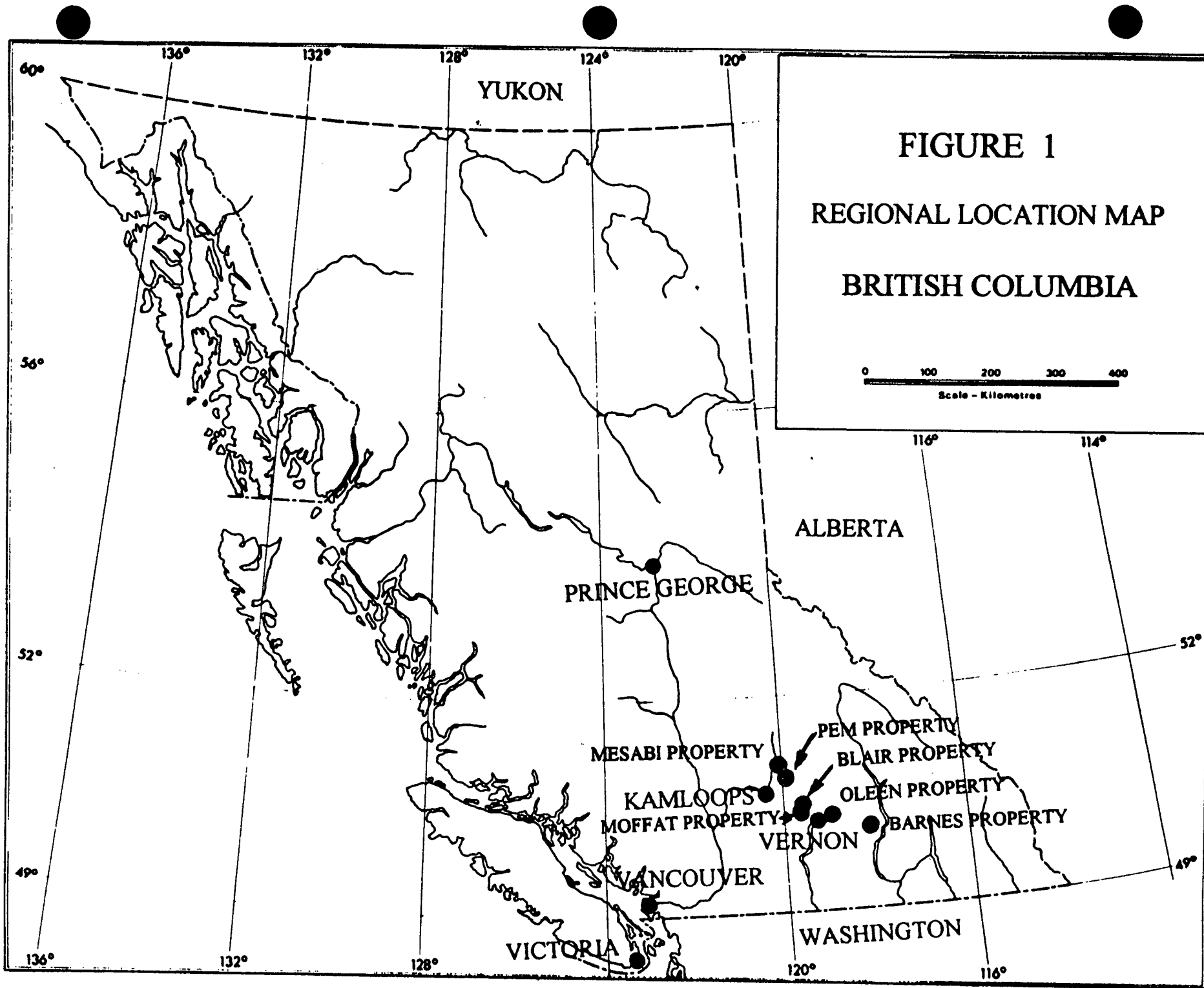
AUTHOR: N.C. CARTER

DATE: SEPTEMBER 6, 1994

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

23,498





## INTRODUCTION

### Location and Access

The BARNES mineral claims are situated immediately south of Barnes Creek some 15 km northwest of the community of Needles which is on the west side of Lower Arrow Lake in southeastern British Columbia (Figure 1). The geographic centre of the property is at latitude  $50^{\circ}04'$  North and Longitude  $118^{\circ}14'$  West and the claims straddle NTS map-areas 82L/1E and 1W.

Good access is afforded by a secondary logging road which leaves highway 6 a short distance north of Needles and extends up the south side of Barnes Creek and through the subject mineral claims (Figure 2). Road distance from Needles to the central part of the property is approximately 28 km.

### Mineral Property

The BARNES property consists of eight 2-post mineral claims located in the Slocan Mining Division. The configuration of the claims is shown on Figure 3 and details are as follows:

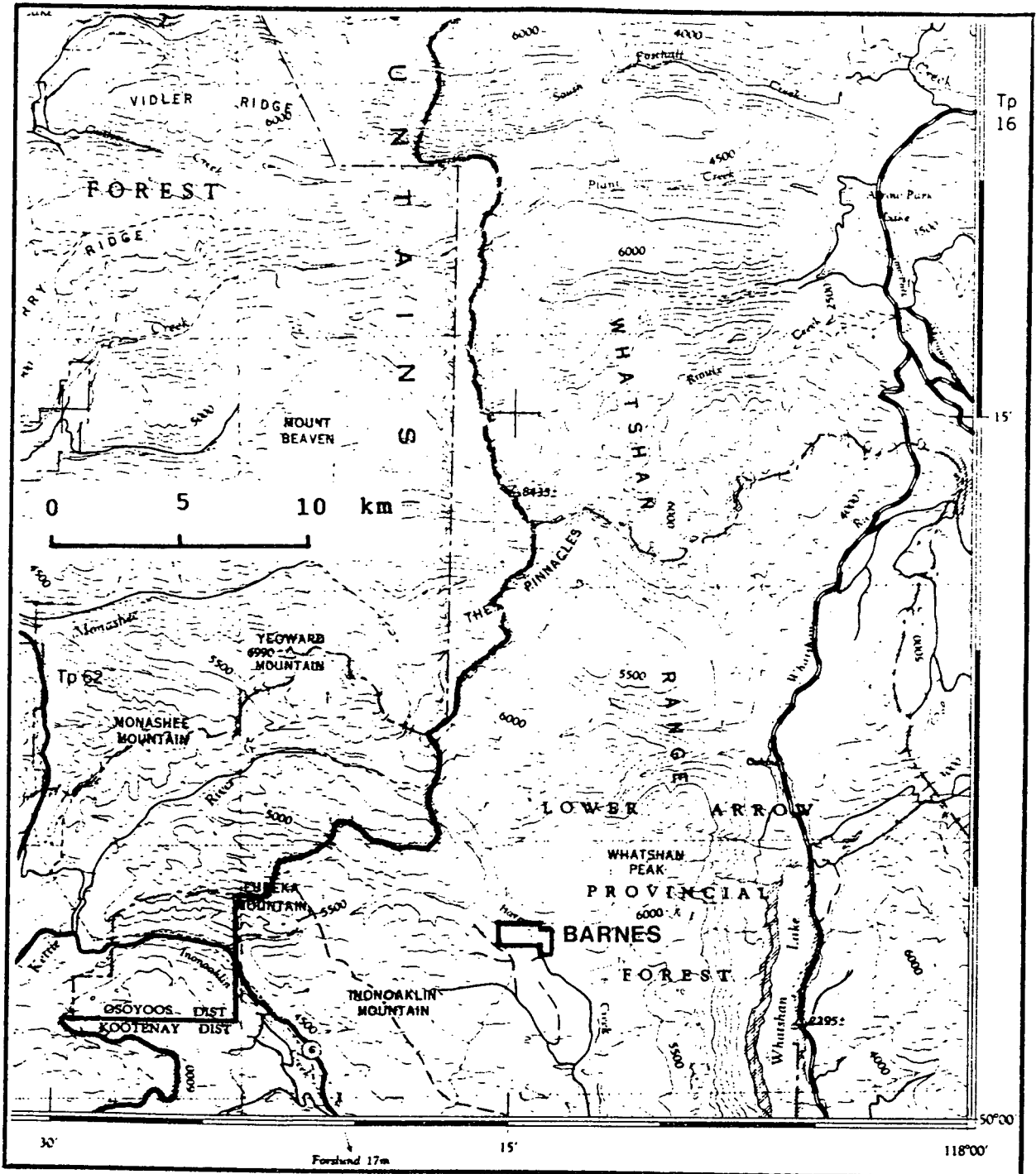


FIGURE 2 - LOCATION - BARNES PROPERTY

<u>Claim Name</u>	<u>Units</u>	<u>Record Number</u>	<u>Date of Record</u>
BARNES #1	1	318129	June 11, 1993
BARNES #2	1	318130	" "
BARNES #3	1	318131	" "
BARNES #4	1	318132	" "
BARNES #5	1	318133	" "
BARNES #6	1	318134	" "
BARNES 7	1	326131	June 5, 1994
BARNES 8	1	325132	" "

### History

Initial work in the area now covered by the BARNES mineral claims was in 1970 when claims were located to cover zinc occurrences found along logging roads in the upper Barnes Creek area (Dawson, 1971). A 1971 program consisted of geological mapping and the collection and analyses of 388 soil samples from what was then known as the Fred claim group. This work was carried out on behalf of United Bata Resources (Canada) Ltd., the predecessor company of Pan Ocean Oil Ltd. (BCMEMP, 1971).

### Present Status

The BARNES #1 - #6 mineral claims were located by R.H. McMillan June 11, 1993 on behalf of the Mesabi Syndicate. The BARNES 7 and 8 claims were located June 5, 1994 during the course of a field program carried out by N.C. Carter and R.H. McMillan on behalf of Formation Capital Corporation.

The 1994 program included the collection and subsequent

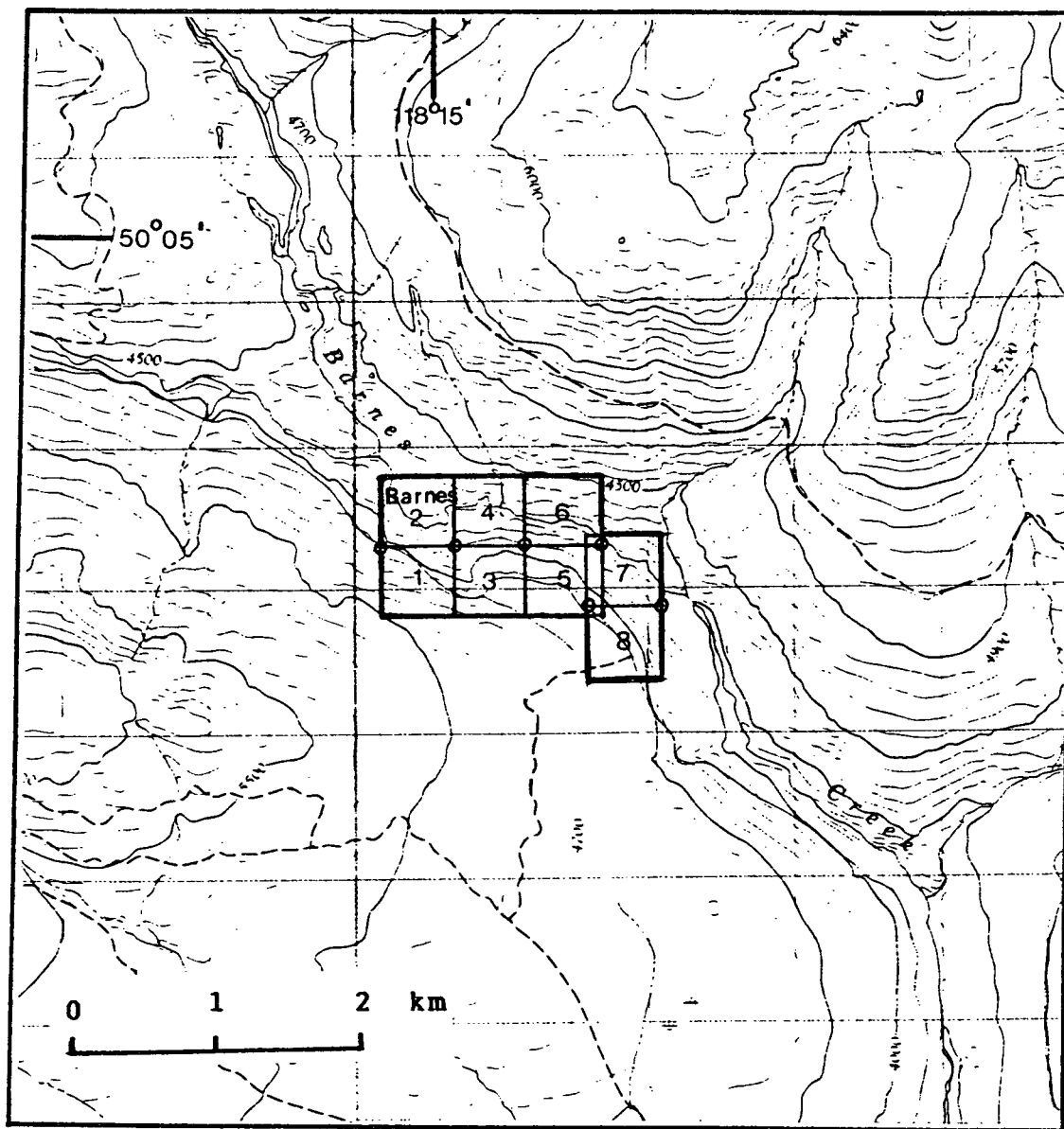


FIGURE 3 - BARNES MINERAL CLAIMS

analyses of 3 rocks and 13 stream sediment samples from north-flowing drainages tributary to Barnes Creek.

## **GEOLOGY AND MINERALIZATION**

### **Physical Setting**

The BARNES mineral claims are situated in the southern Monashee Mountains of southeastern British Columbia.

The claims cover a north- to northeast facing slope above Barnes Creek (Figure 3). Elevations range from 1230 metres above sea level at the eastern property boundary to more than 1500 metres near the southwestern corner of the claim group.

Except for areas of recent logging activity, which are mainly along and south of the Barnes Creek road, much of the present claims area is well-forested with cedar, spruce and hemlock. Locally dense underbrush consists of willow, alder and devil's club.

Bedrock is best exposed in road cuts, on some of the steeper slopes and along the principal drainages.

### **Regional Geological Setting**

The Barnes Creek area, within the Omineca Crystalline tectonic belt, is underlain by metamorphosed equivalents of



Quesnel Terrane sedimentary and lesser volcanic assemblages of late Paleozoic to early Mesozoic age which are immediately north of a large granitic body believed to part of the Valhalla Plutonic suite (Okulitch,1978).

Layered rocks in this area, originally referred to by Okulitch (1978) as being part of the late Paleozoic Thompson Assemblage, are now regarded (Gabrielse and Yorath,1992) as being part of the Harper Ranch Subterrane which forms the basement of Quesnel Terrane. As defined, the most common lithologies within this 2000 metre thick assemblage of late Devonian to late Permian age include argillites (cherty in part), siltstones and calcareous units. Intercalated with the sediments are volcanic clastic and flow rocks consisting of altered basalts and cherty tuffs, some of which may be in-faulted slices of late Triassic Nicola Group rocks. Mafic stocks and dykes are interpreted as being coeval with the volcanic rocks.

Harper Ranch Subterrane assemblages are considered to have been deposited in a basin distal to an active volcanic island arc.

#### **Property Geology and Geochemistry**

The BARNES property is underlain principally by a sequence of metasedimentary rocks which are in contact with

granitic rocks in the southeastern claims area.

The metasedimentary rocks are comprised principally of fine- to medium-grained quartz-feldspar-biotite schists with lesser gneisses, quartzites and amphibolites (Dawson,1971). Where seen along the Barnes Creek road, these rocks are commonly iron-stained and display well developed east-trending schistosity.

The contact between the metasediments and granitic rocks is well exposed in a road cut on the Barnes 8 claim. The most prevalent granitic unit is a light grey, porphyritic granodiorite with prominent 2 x 1 cm euhedral, white feldspar phenocrysts. Coarse-grained pegmatite and fine-grained aplite phases were seen cutting the granodiorite and narrow dykes were also noted cutting the metasedimentary rocks, usually parallel to the planes of schistosity.

Pyrite and pyrrhotite are widespread within the metasediments observed along the Barnes Creek road. Both commonly occur as disseminations within narrow quartz segregations developed within the planes of schistosity. A number of sphalerite occurrences have been noted with pyrrhotite along the Barnes Creek road (Dawson,1971 -map #2-

Assessment Report 3074). Five grab samples (Dawson,1971) returned values of between 0.02 and 0.68% zinc. Reconnaissance soil sampling in 1971 (Dawson,1971) was

carried out at 60 metre intervals along northwest-southeast lines spaced 150 metres apart. Anomalous zinc values in soils (+300 ppm) are principally contained within an 800 x 300 metre southeast-trending zone between the road and Barnes Creek in the southeastern part of the present claims area.

#### 1994 STREAM SEDIMENT AND ROCK SAMPLING

Thirteen stream sediment samples were collected from several north-flowing drainages and rills tributary to Barnes Creek below the main access road in an attempt to confirm and expand upon results obtained from the 1971 soil geochemical survey. Where possible, a silt fraction was collected from an active drainage; in a few cases, the sample medium contained some organic material.

Three rock samples were collected in the vicinity of sites previously sampled by Dawson (1971) in the southeastern claims area.

Stream sediment and rock sample locations are shown on Figure 4. Samples collected were delivered to Pioneer Laboratories Inc. in New Westminster for 30 element ICP analyses. Complete results are listed in Appendix I which also includes an outline of analytical procedures.

Analytical results for stream sediment samples indicate that anomalous zinc values (+300 ppm) are present in samples

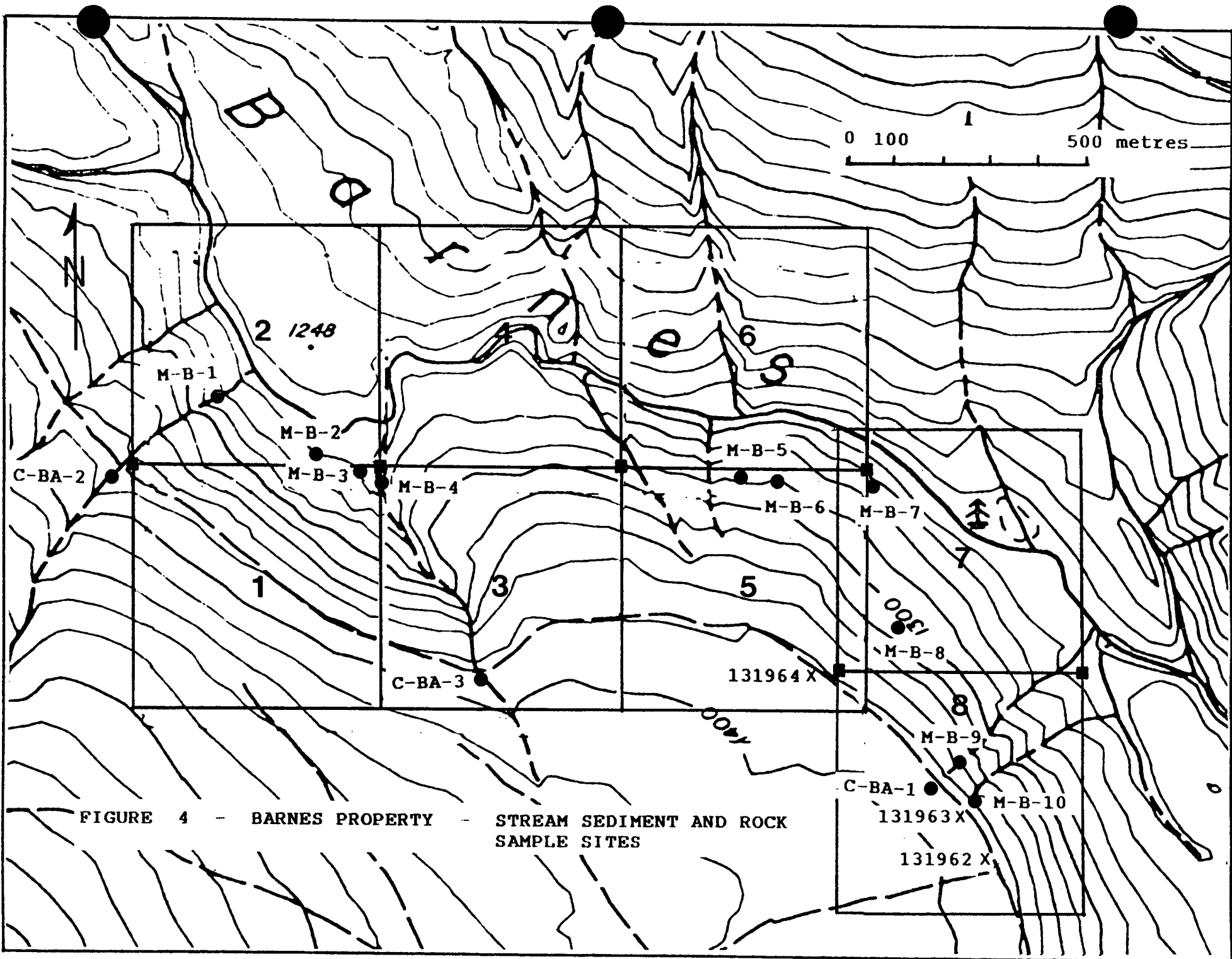


FIGURE 4 - BARNES PROPERTY - STREAM SEDIMENT AND ROCK  
 SAMPLE SITES

collected from drainages in the eastern claims area (Figure 4) or the same general area as the previously defined anomalous zinc in soils anomaly. The higher zinc values indicated by the recent survey are accompanied in part by anomalous cadmium, lead, silver and manganese values (Appendix I).

Values obtained from three rock samples were generally low with the exception of sample 131964 (Figure 4) which contains 1118 ppm zinc (0.11%). This sample was collected from an iron-stained quartz-biotite schist cut by pegmatite stringers and containing between 5 and 10% disseminated pyrrhotite-pyrite and some sphalerite.

#### CONCLUSIONS AND RECOMMENDATIONS

Stream sediment sampling of drainages tributary to Barnes Creek returned values that essentially confirm the previously indicated zinc in soils anomaly lying between the road and Barnes Creek. One of three rock samples contains low zinc values.

The source of the anomalous zinc values in soils and stream sediments remains unknown. Significantly, no geophysical surveys have been conducted within the area of the current BARNES mineral claims. Consequently, VLF-EM and magnetometer surveys are recommended.

## COST STATEMENT

Wages

N.C. Carter, R.H. McMillan  
- June 5,7, 1994

1.4 days @ \$400/day x 2 \$1,120.00

Transportation

Vehicle - 1.4 days @ \$60/day	\$84.00
- 385 km @ \$0.20/km	\$71.60
- Gasoline	\$23.33
- Ferry, tolls	<u>\$19.00</u>
	\$197.93

Accomodation, Meals

June 4,5,1994 \$130.23

Consumables

Base Maps, sample bags. flagging, topofill \$94.27

Analytical

13 stream sediment samples @ \$7.98	\$103.74
3 rock samples @ \$10.38	<u>\$31.14</u>
	\$134.88

Report Preparation

N.C. Carter	\$385.00
Duplicating	<u>\$17.02</u>
	\$402.02

TOTAL EXPENDITURES \$2,079.33

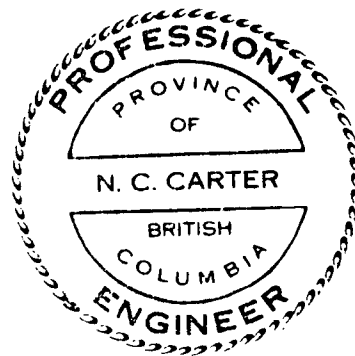
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- Okulitch,A.V.(1978): Thompson-Shuswap-Okanagan, Geological  
Survey of Canada Open File 637

**AUTHOR'S QUALIFICATIONS**

I, NICHOLAS C. CARTER, of 1410 Wende Road, Victoria, British Columbia, do hereby certify that:

1. I am a Consulting Geologist, registered with the Association of Professional Engineers and Geoscientists of British Columbia since 1966.
2. I am a graduate of the University of New Brunswick with B.Sc.(1960), Michigan Technological University with M.S.(1962) and the University of British Columbia with Ph.D.(1974).
3. I have practised my profession in eastern and western Canada and in parts of the United States for more than 25 years.
4. The geochemical survey of the BARNES property as described in the foregoing report was carried out by the undersigned and R.H. McMillan June 5, 1994.



A handwritten signature in black ink, appearing to read "N.C. Carter".

N.C. Carter, Ph.D. P.Eng.



**APPENDIX I**  
**Analytical Results**

G E O C H E M I C A L A N A L Y S I S C E R T I F I C A T E

MR. N.C. CARTER  
 Project: BARNES  
 Sample Type: Silts

Multi-element ICP Analysis - .500 gram sample is digested with 3 ml of aqua regia, diluted to 10 ml with Water. This leach is partial for Mn, Fe, Ca, P, La, Cr, Mg, Ba, Tl, B, W and partial for Na, K and Al. Detection Limit for Au is 3 ppm.

Analyst RSam  
 Report No. 9410903  
 Date: July 05, 1994

ELEMENT SAMPLE	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
M-B-1	2	41	6	88	.1	28	11	463	2.84	9	5	ND	2	39	.2	2	2	81	.58	.100	8	32	.93	135	.12	2	1.54	.02	.23	1
M-B-2	1	85	7	93	.3	26	17	693	3.95	7	5	ND	2	36	.2	2	2	108	.93	.178	10	27	1.44	293	.19	2	2.10	.02	.55	1
M-B-3	1	87	7	87	.1	28	17	584	3.73	5	5	ND	2	28	.4	2	2	107	.68	.131	8	33	1.34	225	.18	2	2.05	.01	.52	1
M-B-4	2	85	8	120	.1	26	17	611	3.77	4	5	ND	2	33	.9	2	2	106	.88	.155	8	32	1.38	173	.18	2	1.98	.01	.44	1
M-B-5	6	61	30	392	3.3	12	13	1439	2.57	6	5	ND	2	25	3.7	2	2	40	.29	.127	28	16	.21	84	.05	2	4.27	.01	.11	1
M-B-6	5	34	37	327	1.4	17	12	1391	1.99	5	5	ND	2	97	4.9	2	2	26	1.21	.128	34	12	.22	128	.03	4	1.68	.01	.08	1
M-B-7	5	38	16	545	.3	22	11	843	3.27	9	5	ND	2	37	1.8	2	2	59	.43	.066	12	21	.60	113	.11	2	1.87	.01	.16	1
M-B-8	8	15	26	499	.2	12	26	4709	5.54	13	5	ND	2	70	3.6	2	2	67	.66	.086	12	13	.58	168	.10	2	1.52	.01	.20	1
M-B-9	6	31	39	249	3.1	16	27	2496	1.85	12	5	ND	2	93	8.7	2	2	31	.91	.160	34	14	.17	117	.03	3	3.18	.01	.08	1
M-B-10	11	51	13	300	2.8	19	42	2055	1.99	9	23	ND	2	60	9.0	2	2	43	.67	.103	83	52	.31	68	.06	2	2.50	.01	.12	1
C-BA-1	3	31	19	275	.4	17	12	644	2.59	6	5	ND	2	36	1.6	2	2	49	.34	.076	12	18	.37	82	.09	2	1.53	.01	.14	1
C-BA-2	2	41	5	82	.1	28	11	447	2.74	11	5	ND	2	38	.3	2	2	78	.54	.090	7	31	.86	132	.11	2	1.50	.02	.22	1
C-BA-3	3	76	6	117	.1	36	16	778	3.87	5	5	ND	2	40	1.4	2	2	124	.77	.115	11	29	1.21	139	.18	2	1.82	.01	.32	1

G E O C H E M I C A L A N A L Y S I S C E R T I F I C A T E

MR. N.C. CARTER

Project: BARNES

Sample Type: Rocks

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

Analyst RSau  
 Report No. 9410903  
 Date: July 05, 1994

ELEMENT SAMPLE	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
131962	6	251	18	184	.4	69	21	382	4.71	17	5	ND	2	146	1.7	2	2	174	1.29	.090	3	108	1.27	73	.23	2	2.64	.28	.78	1
131963	6	119	6	60	.4	33	17	185	4.30	5	5	ND	2	76	.9	2	2	88	.79	.090	5	66	.47	26	.15	2	.85	.09	.12	1
131964	4	33	11	1118	.7	2	4	676	3.19	15	5	ND	6	14	19.3	2	2	58	.36	.073	8	70	.82	20	.10	2	.94	.05	.43	1