



CHEMEX LABS LTD.

212 BROOKSBANK AVE.
 NORTH VANCOUVER, B.C.
 CANADA V7J 2C1
 TELEPHONE: 985-0648
 AREA CODE: 604
 TELEX: 043-52597

671457
 Heber River
 MAY 30 1977

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO: J.C. Stephen Exploration
 1124 West 15th Street
 North Vancouver, B.C.

CERTIFICATE NO. 39591
 INVOICE NO. 20135
 RECEIVED May 26/77
 ANALYSED May 27/77

ATTN:

SAMPLE NO. :	PPM Copper	PPM Molybdenum	PPM Zinc
1	310 ✓	2	54 ✓
2	168 ✓	1	82 ✓
3	410 ✓	1	50 ✓
4	305 ✓	1	100 ✓
5	560 ✓	2	60 ✓
6	182 ✓	1	64 ✓
7	385 ✓	1	64 ✓
8	154 ✓	1	166 ✓
9	430 ✓	1	64 ✓
10	150 ✓	1	86 ✓
11	340 ✓	2	30 ✓
12	184 ✓	4	94 ✓
13	360 ✓	4	86 ✓
14	140 ✓	3	48 ✓
15	270 ✓	2	108 ✓
16	142 ✓	3	38 ✓
17	275 ✓	4	44 ✓
18	118 ✓	3	42 ✓
19	345 ✓	5	92 ✓
20	180 ✓	10	320 ✓
21	440 ✓	2	88 ✓
22	152 ✓	2	40 ✓
23	325 ✓	1	102 ✓
24	180 ✓	1	50 ✓
25	470 ✓	2	82 ✓
26	132 ✓	2	42 ✓
27	330 ✓	4	106 ✓
28	168 ✓	1	86 ✓
29	260 ✓	1	76 ✓
30	150 ✓	1	80 ✓
31	215 ✓	2	70 ✓
32	120 ✓	3	86 ✓
33	168 ✓	3	74 ✓
34	154 ✓	3	80 ✓
35	160 ✓	2	58 ✓
36	490 ✓	2	56 ✓
37	150 ✓	2	70 ✓
38	200 ✓	3	52 ✓
39	204 ✓	2	102 ✓
40	285 ✓	2	58 ✓
STD.	102	10	196

HEBER RIVER

Note:
 Sample 20: High Manganese



MEMBER
 CANADIAN TESTING
 ASSOCIATION

CERTIFIED BY: *Hartwell*



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41	- 300	4	94
42	- 245	2	58
43	168	3	88
44	192	2	60
45	- 250	2	162
47	305	3	88
49	- 215	3	88
51	- 290	2	132
53	- 215	1	78
55	118	2	46
57	200	2	88
59	- 245	2	94
61	410	2	90
63	- 270	1	74
65	400	2	106
67	186	2	70
69	194	1	56
71	- 215	2	46
73	88	1	40
75	340	3	60
77	124	2	56
79	- 260	3	70
81	66	2	42
83	192	3	56
85	144	1	56
87	- 220	2	78

Cu

0-50 51-100 101-150 151-200 201-250 251-300 301-350 351-400 401-450 451-500 501+

0 2 11 18 9 8 8 3 4 2 1 /66



MEMBER
 CANADIAN TESTING
 ASSOCIATION

CERTIFIED BY: *Hart Balle*

WEEKLY CAMP REPORT

PROJECT HEBER RIVER

CAMP NAME & NUMBER CHARLIE
(CHARLIE BARRIE & JIM CHARTIER)

NTS SHEET 92 F

DATES MAY 16 → 24, 1977

AIR PHOTOS BC 5043 78→83
BC 4419 166→174, 197→208,
220→228 LAT & LONG 125°54', 49°54'

SILT SAMPLE SERIES HR 1-87
HR 2-44

SOIL SAMPLE SERIES _____

ROCK SPECIMEN NUMBERS CB77 1-34

AIR PHOTOS USED IN MAPPING:



CAMP SITE :

Camping facilities are excellent with abundant fresh water, and excellent road access as shown by the traced map taken from the Elk River Timber Company Limited (see appendix). Note that permission must be obtained from the company to use their logging roads - presently at the Camp Office # 8 and the necessary proof of insuranc~~e~~ is required (see appendix for contract) and payment of a \$10 fee.

PROLOGY :

The area contains two major rock types: a basalt and a diorite. The basalt is generally fine grained, overlying the diorite. The diorite contains approximately 60% qtz and plagioclase and minor K-spar and 40% hornblende and mica, some of the mica (light bronze mica) perhaps being secondary mica. All of the rocks of the area exhibit weak to moderate magnetism.

The nature of the contact immediately north of the camp site, north of the major confluence, suggests that the diorite was intruded vertically and possesses a roof at approximately the 3000 foot contour level - but this may vary substantially across the map area. The general attitude of the intrusion appears to trend north west; in the north west perhaps extending under the basalt and in the south east perhaps outcropping at even higher levels.

The diorite appears to be more mafic and equigranular toward the contact area - perhaps as a result of assimilation of the basalt. This aspect tends to ~~to~~ make

the contact zone harder to pinpoint exactly, but easier to find in a general sense. The diorite frequently exhibits rounded mafic inclusions - possibly of basaltic origin. Several cases (CB77-24, 28) of mafic lenses and banding were observed in the diorite - infrequently exhibiting angular inclusions of diorite. Also, the K₂O content increased strongly towards these mafic intrusions.

The diorite was also observed to penetrate the basalt as veins up to 1 meter in width, however these were not abundant and were confined to basalt close to the diorite. Both the diorite and basalt were injected with a slightly more felsic diorite creating veins up to about 10 cm in thickness, these were even less frequent.

The basalt is generally fine grained but it does vary throughout the area with respect to its mafic content and the nature of amygdules.

In the most part the basalt is quite typical, - in places typical of a trap rock however towards the southwest the felsic content appears to increase to a dacite, even perhaps to a rhyodacite in places.

The smaller amygdules (less than 5 cm across) are most common and are found usually in the fine grained portions of the basalt. These vary in shape from spherical to wormy in appearance. They are filled by zeolite (?) and occasionally small bands of chlorite within the zeolite. Some contain a green mineral, tentatively identified as actinolite. In slightly coarser grained basalt there was an obvious alteration

rim about the amygdules. The larger amygdules (up to 12 cm across) contained chlorite in irregular bands within quartz. The quartz was separated from the basalt by a zone of actinolite. Occasionally these amygdules appeared in a linear fashion on the outcrop surface.

ECONOMIC :

- 1) Sulphides (pyrite and chalcopyrite) were observed in fractures near to zones of K₂O enrichment (CB7728) however the association was not directly apparent.
- 2) The light coloured micrite appeared to increase in zones where sulphide fractures prevailed - but this was not consistent - there were areas of light micrite and no apparent sulphides. If ~~these~~ these micrites are secondary then it would be logical to expect them close to extensively fractured rock.
- 3) Most ^{of} the sulphide fractures possessed a 060/90 orientation, in some cases varying to 040/90.
- 4) The two areas of extensive sulphide fractures were a) north of camp (CB7714) and b) east of camp (CB7726²⁴). The former was the strongest containing molybdenite, chalcopyrite, pyrite, malachite and bornite. Both fracture systems

tend to abide by the general attitude of 3)

- 5) Note that the sulphide fractures north of camp line up approximately with the assay values of 1963 of rocks to the southwest across the valley (see appendix) (values 36013, 36017)
- 6) Highly altered diorite is exposed at CB7715, close to the sulphide fractures, and possesses the same attitude. The same alteration appears in the valley to the southwest several times (CB7733). It appears to be the result of intense shearing allowing pervasive weathering. Several samples indicated good slickensides.
- 7) The sulphide fractures observed were primarily in the diorite - apparently close to the roof of the intrusion. Minor pyrite veins were observed in the basalt close to the diorite - also some chalcopyrite.

Conclusion on Genesis:

The sulphides appear to have been deposited in fractures of the diorite close to the upper areas of the intrusion. The source appears to be at depth, carried up by ascending solutions. Minor sulphides appear to have extended into the overlying basalt. No estimate of the depth of intrusion could be made from these observations.

CHEMEX LABS LTD.
STREAM SEDIMENTS - WATER

COLLECTORS: CAMP CHARLIE

RESULTS PLOTTED BY: _____

ANALYST: _____

AREA: HEBER RIVER AREA

POSTING MAP: _____

METHOD: (A): _____

FIELD MAP: _____

DATE: _____

(B): _____

DATE: MAY 24/77

DATE: _____

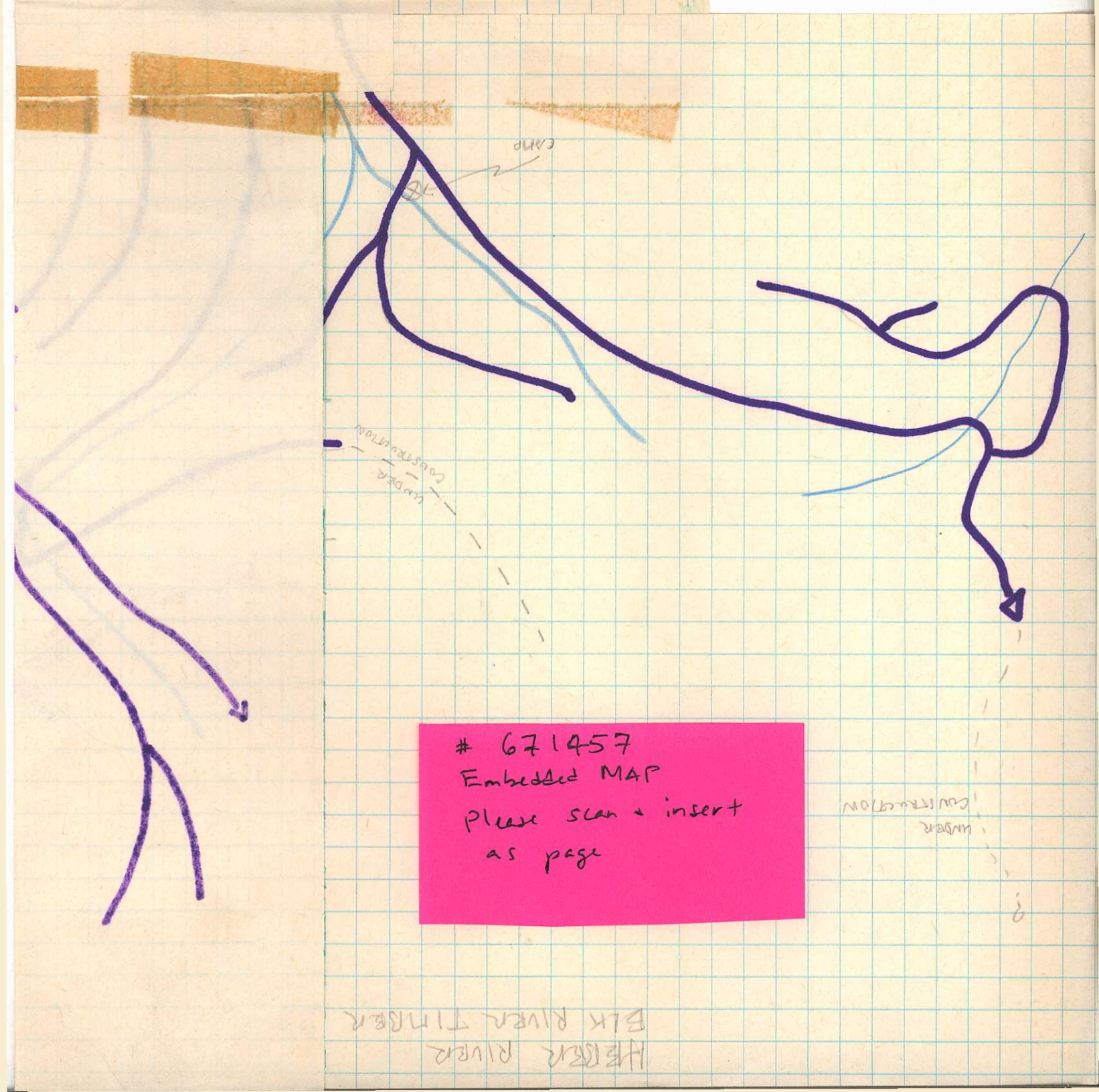
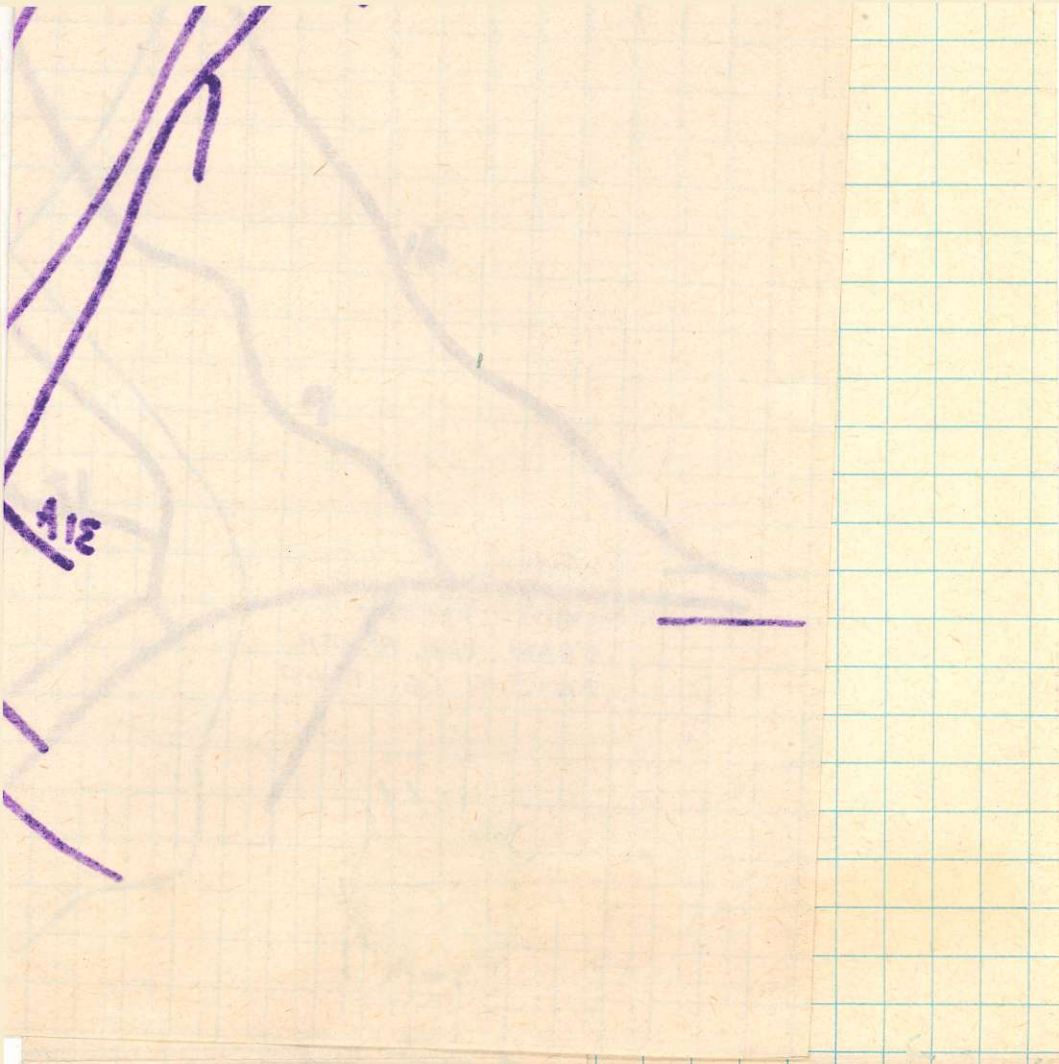
SAMPLE NUMBER	NOTES	SEDIMENT DATA					STREAM DATA						DRY GULLY	SPRING	SEDIMENT RESULTS							WATER RESULTS									
		Gravel	Sand	Silt	Clay	Organic	Bank	Active	Width	Depth	Velocity	pH			Field Tests			Lab. Tests													
															Cu	HM		Mo	Cu	Pb	Zn										
2	North	✓				✓	✓			2'	F																				
4	Main	✓	✓				✓			8"	VF																				
6	South	✓	✓	✓		✓	✓			2'	F																				
8			✓				✓			4' 2"	VF																				
10		✓	✓			✓	✓																								
12	probably ditch sample!	✓					✓																								
14	above road	✓	✓			✓	✓		4' 4"	4'	F																				
16	- 11 -		✓	✓				✓	4' 2"	4'	VF																				
18	sample on road - outwash		✓					✓	2' 1'	2'	F																				
20	SOIL - North #1/8 by 50 yds																														
22	above rd - outwash island		✓				✓				F																				
24	in dip cut	✓					✓		4' 3"	4'	F																				
26	above confluence	✓	✓					✓	10' 1'	10'	F																				
28	above contact (?)		✓					✓	15' 1'	15'	MF																				
30	probably at contact		✓					✓	15' 1'	15'	MF																				
32	above confluence	✓	✓				✓	✓	20' 2'	20'	MF																				
34	point bar		✓	✓				✓	75' 6"	75'	MF																				
36	deep ravine	✓	✓			✓	✓		thick																						
38	just above main R	✓	✓			✓	✓	✓	3' 1"	3'	M																				
40	swampy area		✓	✓		✓		✓			VS																				
42	cut into overburden		✓	✓		✓		✓	1' 2"	1'	M																				
44	lee in main river	✓	✓				✓		20'	20'	M																				

*

→ DRY GULLY SAND

100 yds below ditch / contact

- sample taken in lee of gravel point bar



671457
Embedded MAP
Please scan + insert
as page

HEBER RIVER
BLK RIVER TIMBER

LUMBER
CONSTRUCTION

HEBER RIVER

92F/13

The accompanying notes and sketch map describe the area to be prospected. From present knowledge, the south and southwest contact area of the granitic intrusive deserve the most attention.

- (A) All creeks should be silt sampled.
- (E) Geology should be mapped with particular attention being paid to the structural attitudes of the volcanics, and to fracture patterns.

Access to the area has changed considerably in the past few years. The main access road is the Campbell River - Gold River highway but the Heber River valley access is by logging road. This area was held by Elk River Logging and in past years they have been extremely cooperative. Elk River Logging therefore should be approached and permission to use their roads arranged before any trespass is made on their roads or logging permits. Great care should be taken to maintain cordial relations and prospecting camps and vehicles must not impede logging operations. The strictest care should be taken with any possible fire hazards.

Our last permission to use these roads was for Mastodon Highland Bell Mines during 1963.

J.C. Stephen
LUC SYNDICATE

May 17/71

AND
MR. C. Q. BARRIE
G. K. WATSON
J. C. STEPHEN EXPL. LTD
GEN. DEL
VANDERHOOF

HEBER RIVER AREA:

There is abundant evidence of earlier prospecting in the Heber River area, particularly in the upper west branch and over the height of land toward Gold Lake.

As shown on the sketch opposite, this area is underlain by a dioritic intrusive. No mineralization was noted in this body but it appears to be the source of, or related to, quartz filled fractures in volcanics located in the contact areas at the north end of the intrusive. These quartz veins are often well mineralized with pyrite and occasionally with some chalcopyrite and magnetite. Fractures in the volcanics and in the diorite are often mineralized with pyrite. Rare examples of molybdenite were found. Well mineralized material from the west vein assayed 0.10 Au. and 0.10 Ag per ton across 12 inches.

South of the intrusive and west of the Heber River are massive dark green volcanics probably of the Karmutson series. Widely scattered bornite and chalcopyrite mineralization was found in these volcanics. The best of this material assayed 2.40% copper, Trace - gold, 0.4 oz. silver. No definite zone was found.

A system of mineralized fractures was noted carrying magnetite and chalcopyrite over narrow widths. This system is approximately vertical and strikes N 50° E. Sub-parallel zones of quartz and pyrite were also found. These zones are sometimes offset by north or north-east striking faults which are unmineralized.

North of the intrusive and west of the east branch of the Heber River, silt sampling returned positive results, but in spite of widespread outcrop no mineralization of any kind was found. Check silt samples were also positive. The writer has no reasonable explanation. A small remnant of limestone was found to the east approximately on the boundary of Strathcona Park. Age of this limestone could not be determined.

LIST OF ASSAYS CORRESPONDING TO SAMPLE NUMBERS SHOWN ON GEOLOGY
SKETCH OF UPPER NEBER RIVER

<u>SAMPLE NO:</u>	<u>Cu%</u>	<u>Zn%</u>	<u>Au.oz.</u>	<u>Ag. oz.</u>
36013	0.85	0.59	Tr.	Tr.
36014	-	-	0.08	0.30
36015	0.25	0.23	Tr.	Tr.
36016	-	-	Tr.	0.10
36017	2.40	-	Tr.	0.40
36018	-	-	0.10	0.10
36019	-	-	Tr.	Tr.
36020	-	-	0.02	Tr.



FIG VII
HEBER RIVER
1:50,000 1963

[Handwritten signature]

VANCOUVER 2, B. C. OFFICE
640 W. HASTINGS ST.

CAMP OFFICE
CAMPBELL RIVER, B. C.

ELK RIVER TIMBER COMPANY LIMITED

EVERETT AND FEDERAL AVENUES
EVERETT, WASHINGTON

Campbell River, B. C.

J. C. Stephen Explorations Ltd.
1124 West 15th Street
North Vancouver, B. C.

Dear Sirs:

Upon your written acceptance of the terms hereof in the manner hereinafter provided and your furnishing us with a certified copy of the undermentioned insurance policy, this letter will constitute our permission in so far as we have the right to give the same, to you and your employees

- (a) to use our private roads for the purpose of prospecting for mineral deposits, and

~~(b) to use our private lands, camps, roads, and other lands in respect of which we have any rights of occupancy or control including the timber holdings for use in prospecting for mineral deposits,~~

it being understood and agreed that such permission is given subject to and upon the following terms and conditions, namely:

- 1. You assume hereby all risk of loss, damage, personal injury and death suffered or incurred by you or your employees whilst on our roads, lands or timber holdings and whether

arising out of the negligence of the undersigned, its officers, servants, agents, contractors, licensees or invitees, or otherwise howsoever; and you do hereby release the undersigned, its officers, servants, agents, contractors, licensees and invitees and each of them from all liability of any one or more of the undersigned, its officers, servants, agents, contractors, licensees and invitees, whether arising in tort or in contract towards them or any of them in respect of any loss, damage, personal injury or death as aforesaid and you will indemnify and save harmless the undersigned, its officers, servants, agents, contractors, licensees and invitees and each of them against any and all claims, demands, actions, causes of action, losses, costs, charges and expenses in respect of all such loss, damage, personal injury and death as aforesaid.

2. You shall indemnify and save harmless the undersigned, its officers, servants, agents, contractors, licensees and invitees and each of them against any and all claims, demands, actions, causes of action, damage, loss, costs, charges and expenses in any way arising out of or attributable to the use by you, your employees or agents of any of our roads, lands or timber holdings.

3. You will only use our roads at such time as may be authorized by our Logging Superintendent and you will not

in using the said roads interfere with our logging or other operations. You will observe and comply with all directions and rules governing traffic on our roads from time to time made or given by our Logging Superintendent or any representative of his: it being understood and agreed that all traffic on our roads shall be under the supervision of our said Superintendent, who shall have power to stop any or all traffic for such periods as, in his sole opinion, weather conditions, fire hazard, our operations or other conditions so require.

4. You will at your expense take out and maintain the following insurance:

- i. Public Liability - \$100,000.00 injuries to any one person.
- \$200,000.00 injuries from any one accident.
- ii. Property Damage - \$300,000.00 including loss from fire.
- iii. \$200,000.00 Public Liability and Property Damage on vehicles.



CERTIFICATE

Every insurance ~~policy~~ provided hereunder shall contain a provision that it cannot be cancelled unless ten days prior written notice is given to this Company at the above address.

CERTIFICATES

You will produce the ~~policy~~ ~~xxxx~~ ~~policies~~ of such insurance to us and obtain our approval thereof ~~and will provide us with a~~ ~~copy of each insurance policy certified to be true by the~~ ~~Company incurring the same~~, before exercising the permission granted hereby.

5. The permission granted hereby is restricted to the right to use existing roads and does not authorize you to fall timber, build or repair roads, construct buildings or undertake any other such works or projects except temporary campsites as provided in paragraph 6 hereof.

6. Before establishing any campsite on our lands or timber holdings, you shall obtain the written approval of our Logging Superintendent as to the location thereof and the nature of construction of camp buildings.

7. You will not start or permit any open camp fire (except cooking fires in a prepared campsite with sufficient water for controlling and extinguishing such fires) or any fire menace on or near our roads, lands or timber holdings at any time. You will take every reasonable precaution to prevent the escape of fire on or to any of our lands, and timber. You will at your expense take all proper and reasonable precautions and means to prevent and extinguish any fire caused by you, your servants or agents, including without limiting the generality of the foregoing, the placing of fire tools and fire extinguisher in each vehicle used. You will conform to and observe all applicable provisions of and regulations under the "Forest Act" of British Columbia and any statutory modification thereof and any other Statute that has been or may hereafter be made in respect of the prevention of fires. You will be responsible in damages to the undersigned

Company for any default on your part in carrying out any obligation contained in this paragraph and you will indemnify and save harmless the undersigned from and against any and all claims, demands, actions and causes of action which may arise or accrue to any person, firm or corporation whatsoever by reason of any fire arising or spreading and being in any way attributable to your being on our roads, lands or timber holdings.

8. Any key furnished to you from time to time for the purpose of opening gates on our roads shall be promptly returned to us upon completion of the journey for which the key was furnished.

9. To supply us with the names of all persons who will be using our roads, lands and timber holdings as your servants or agents.

10. You will pay us a fee of \$ 10.00 as consideration for the permission hereby granted upon your acceptance.

11. That you will notify our office at Camp 8, Quinsam, British Columbia of each area in which you will be operating hereunder prior to travelling our roads in that area.

12. The permission granted hereby shall extend from the date of your acceptance of these terms and conditions until December 31, 19~~62~~: PROVIDED, HOWEVER, that such permission may

>>

C. O. B.
W. B. L.

be revoked by this Company at any time upon written notice of revocation being sent by prepaid registered mail to you at your address noted above.

Please indicate your agreement and acceptance of the foregoing terms and conditions by signing all copies of this letter. We will return a fully executed copy to you.

Yours very truly,

ELK RIVER TIMBER COMPANY LIMITED

Per: W.B. Paulson
VICE- President

The terms and conditions hereinabove set forth are hereby accepted and agreed to this 17 day of May, 1927.

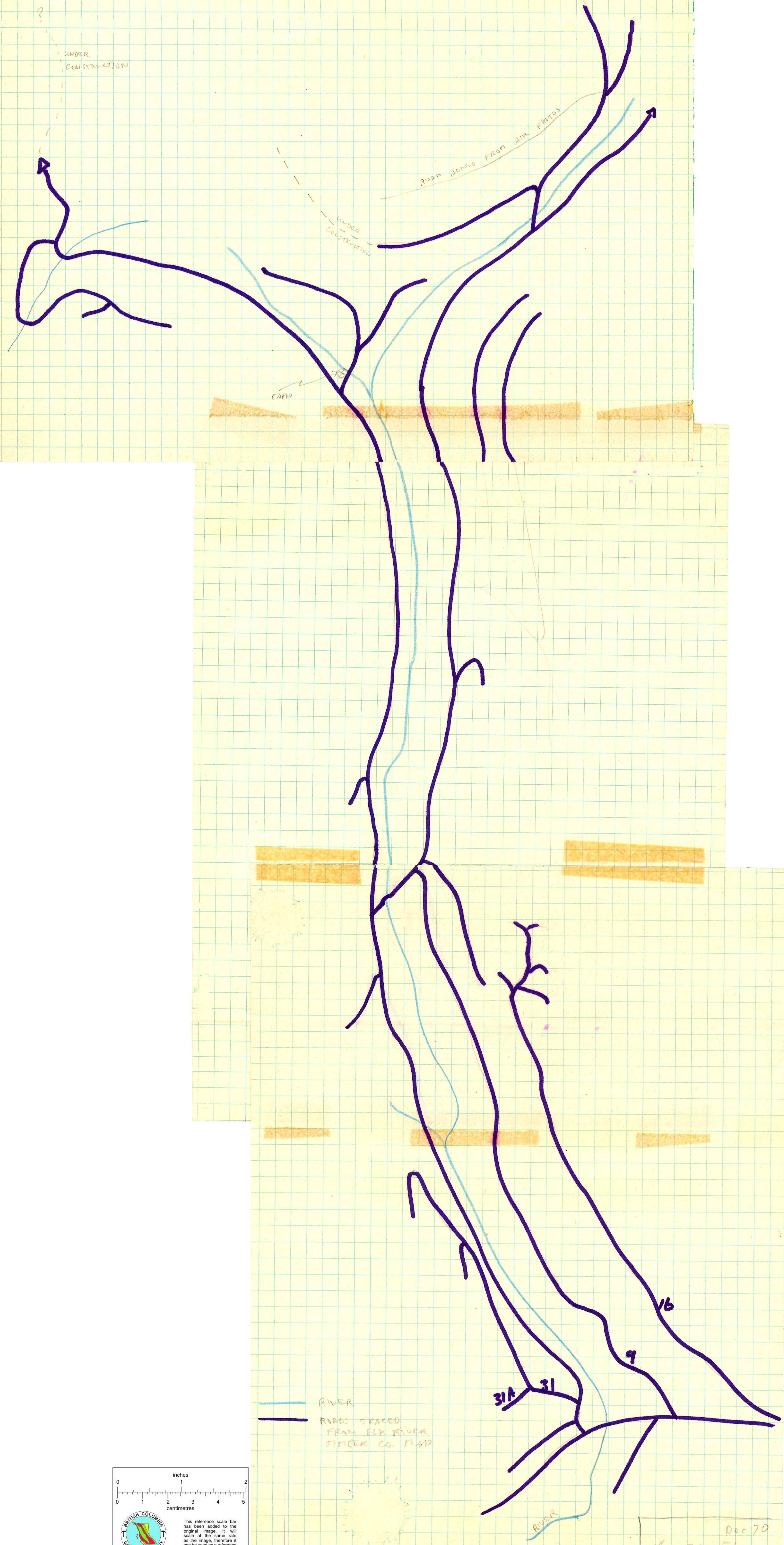
Charles J. Bani
(Name of User)

Per: Geologist
(Title)

Distribution

- Copy 1 to User
- 2 to Elk River Timber, Campbell River, B.C.
- 3 Lawson, Lundell, Lawson & McIntosh
- 4 File

HEBER RIVER
ELK RIVER TIMBER COMPANY



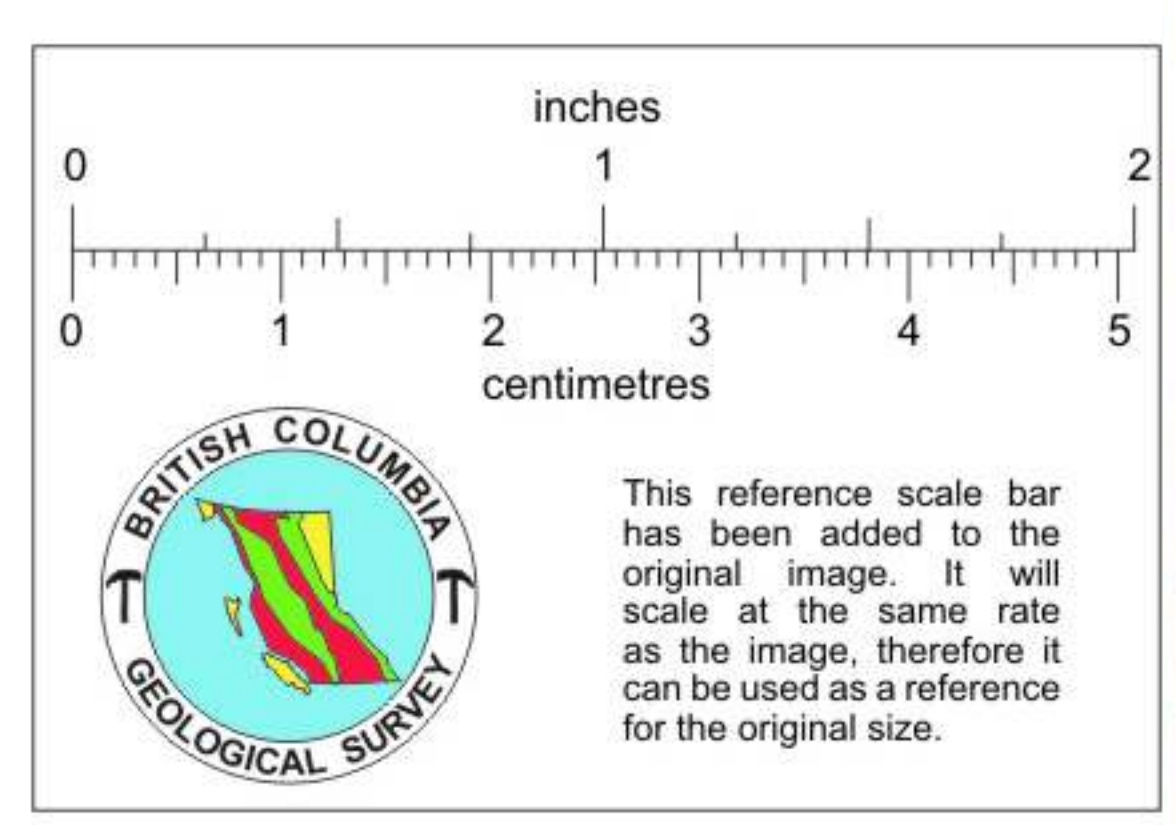
UNDER CONSTRUCTION

ROADS GRADED FROM AIR PHOTOS

UNDER CONSTRUCTION

CAMP

RIVER
ROADS GRADED FROM ELK RIVER TIMBER CO. MAP



Dec 70
1" = 1320 FT