

CORPORATION FALCONBRIDGE COPPER

MEMORANDUM

DATE: January 23, 1986
A
TO: A. J. Davidson
COPIES A
COPIES TO:
DE FROM: D. V. Lefebure
SUJET
SUBJECT: Property Evaluation of the Heather Claims, Vancouver Island, NTS 92C/15,16,
92F/1,2

826541

Introduction

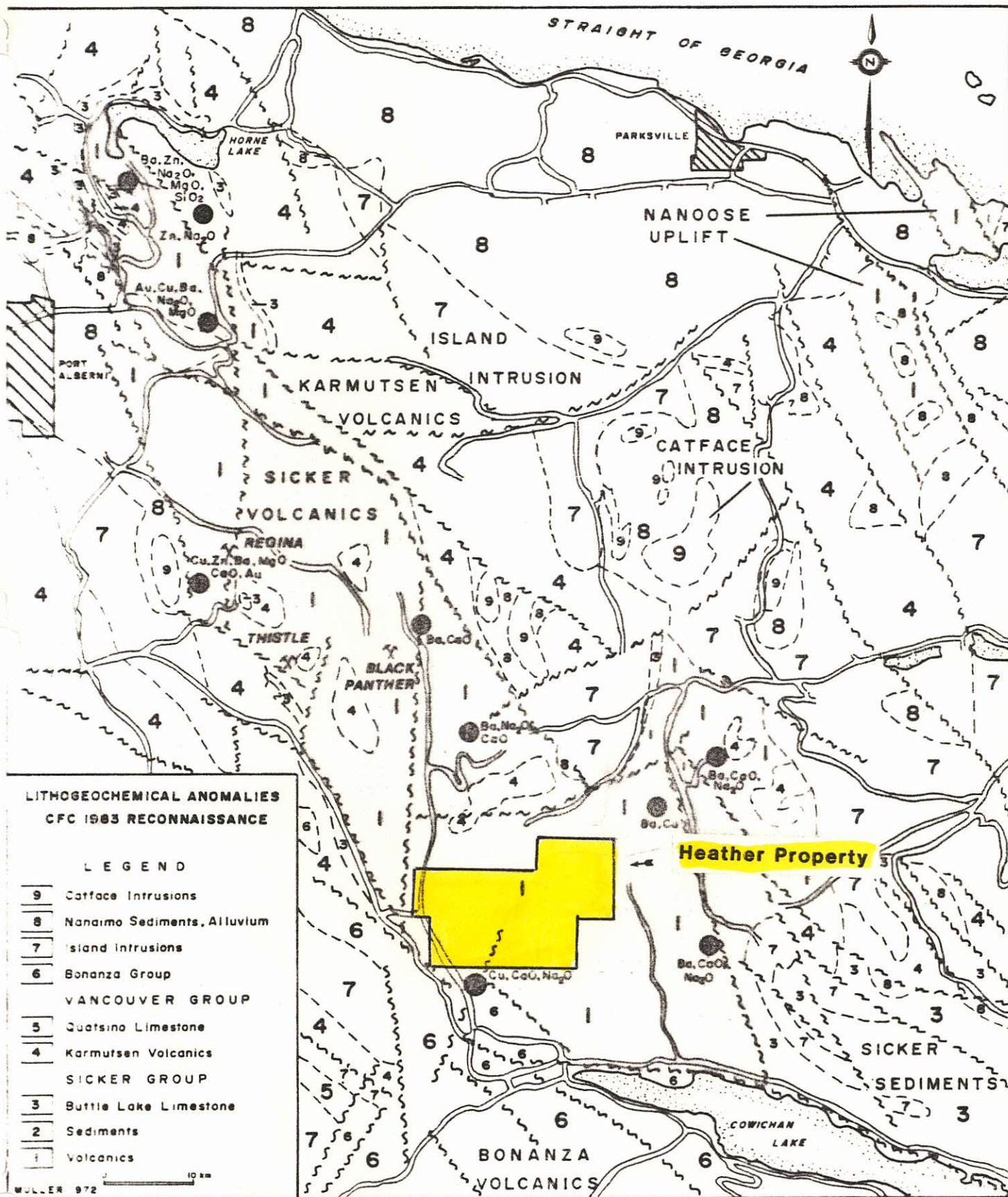
During a property examination of the Amore Claims, E. Specogna offered to show me his nearby Heather Property. I subsequently arranged to visit the main showing on this property and review the results of the exploration programme completed by Chevron. There are copies of the Chevron reports in our files.

Target

Massive sulphide polymetallic deposit hosted in Sicker Group volcanic rocks.

Location

The Heather claims are located about 40km southwest of Nanaimo and 7km north of Lake Cowichan (Figure 1). The claims are accessible via paved roads to Youbou then by gravel roads along the north side of Cowichan Lake connecting with the Heather Creek, West Shaw Main and North Shaw Main logging roads. The terrain is rugged and parts of the property are difficult to reach.



**LITHOGEOCHEMICAL ANOMALIES
CFC 1983 RECONNAISSANCE**

LEGEND

- 9 Catface Intrusions
- 8 Nanaimo Sediments, Alluvium
- 7 Island Intrusions
- 6 Bonanza Group
- VANCOUVER GROUP**
- 5 Quatsino Limestone
- 4 Karmutsen Volcanics
- SICKER GROUP**
- 3 Buttle Lake Limestone
- 2 Sediments
- 1 Volcanics

MULLER 972 10 km

Au, Cu Lithogeochemical Anomaly · Fault · Contact · Road

FIGURE 1

Property

The Heather property consists of 191 units in ten contiguous claims as follows:

<u>Claim Name</u>	<u>Record No.</u>	<u>No. of Units</u>	<u>Expiry Date*</u>	<u>Record Date</u>
CAROL S	644	20	1990	August 3, 1982
TANIA S	645	20	1990	August 3, 1982
LUCIA S	646	20	1986	August 3, 1982
MARIO S	647	20	1986	August 3, 1982
CAROL S-2	648	20	1986	August 3, 1982
EFREM S	649	20	1986	August 3, 1982
TANIA S#2	683	15	1990	October 5, 1982
TANIA S#3	684	20	1990	October 5, 1982
TANIA S#4	685	16	1990	October 5, 1982
CAROL S#3	686	20	1986	October 5, 1982

what are these days

* DL. Feb 6/86

Ownership:

Efrem Specogna
 Specogna Mineral Corporation
 1704 Centenary Drive, R. R. #1
 Nanaimo, B. C. V9R 5K1
 753-7819 (home)

Previous Work

Efrem Specogna staked the Heather claims and identified several showings. J. J. McDougall of Falconbridge Ltd. visited the property in the same year ¹⁹⁸² and examined massive sulphide boulders containing pyrrhotite, pyrite, chalcopyrite and sphalerite. One of his grab samples returned values of 0.25 oz/ton Au and 0.18% Cu. Falconbridge Limited optioned the claims on his recommendation and then entered into a joint venture with Chevron who carried out the subsequent exploration.

In 1983 Chevron completed soil sampling and mapping along roads and creeks (1:5000) over much of the eastern part of the property; trenching of the massive sulphide showing; airborne magnetic and Input surveys (432 line km at 100m spacing); and ground EM 37 surveys over the massive sulphide

showing and the #1 Input anomaly (Figure 2). A mise-a-la-masse survey was completed over the main showing. The geophysical results were generally disappointing.

The following year, ¹⁹⁸⁴ R. Bruaset revised the existing geological maps and supervised the collection of 200 lithogeochemical samples. Significant areas of the property were not mapped due to snow cover. As well, two holes totalling 338m. were drilled on the massive sulphide showing. ¹⁹⁸⁵ The next year Chevron dropped the option because they were disappointed with the drill results.

The 1983 CFC reconnaissance programme covered parts of the Heather Property but not the massive sulphide showing. No anomalies were located on the Property, although three anomalies occur near its boundaries (Figure 2).

Geology

The Property is underlain by Myra and Nitinat Formation volcanic rocks of the Sicker Group and granodiorite Island Intrusions (Figure 2). Several northwest-trending faults cross the property and separate these different rock packages. The Nitinat Formation consists of basaltic lavas and breccias and massive to banded tuff. The younger Myra Formation is an interlayered sequence of massive green tuffs, light green cherty layers, red and green thinly interlayered tuffs and purple tuffs. In contrast to the Mt. Sicker area, the Myra Formation is almost exclusively mafic in composition on the Heather Property. There are some felsic rocks (samples Heat #2 and BCS 2377) but their extent is unknown.

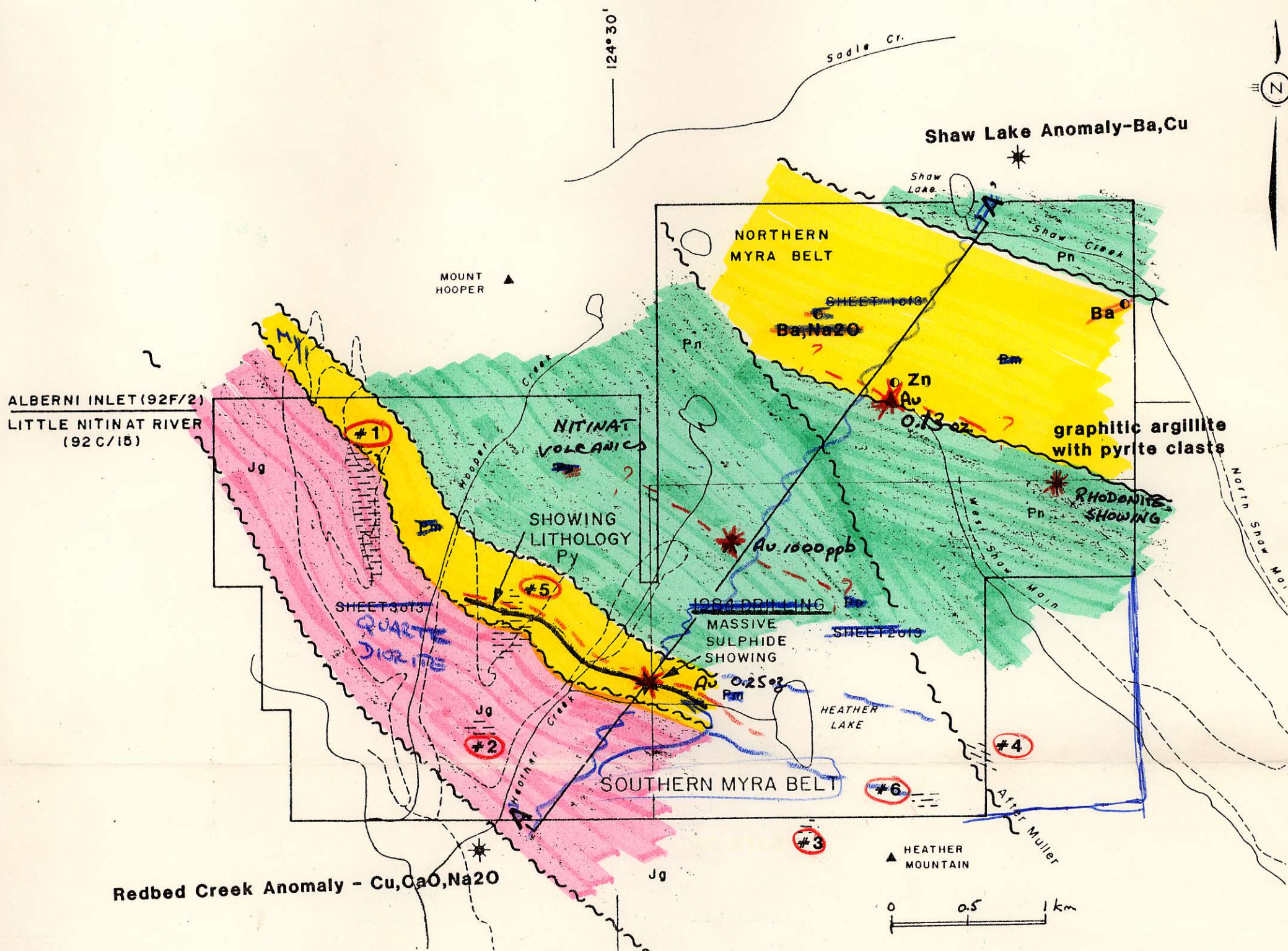
Mineralization

The main showing on the Property consists of disseminated to semi-massive pyrite and quartz veinlets with minor associated chalcopyrite set in an intensely foliated andesitic tuff. At the time of the Property examination I could not find any massive sulphides in place but there were a number of pyritic boulders with quartz gangue adjacent to the trench. Walton (1983) identified two zones of massive pyrite and fragments of massive pyrite in a fault zone. Grab samples from the showing area contain up to 0.28 oz/ton Au and 1.7% Cu. Two drill holes immediately underneath the showing (Figures 3

HEATHER PROPERTY

GENERAL PROPERTY GEOLOGY

FIGURE 2



LEGEND

JURASSIC ISLAND INTRUSIONS



GRANODIORITE, QUARTZ DIORITE, GRANITE, QUARTZ MONZONITE

PALEOZOIC SICKER GROUP



MYRA FORMATION. SEDIMENTS AND VOLCANICS. CHERT, PHYLLITIC TUFF



NITINAT FORMATION. AUGITE AGGLOMERATE, MINOR CHERT

Py PYRITE

Cp CHALCOPYRITE

~ FAULT

— MINERALIZED SHEAR. BROAD ZONE OF SHEARING WITH MINOR PYRITE, TRACES OF Cp ASSOCIATED WITH HIGHLY DEFORMED QUARTZ VEINLETS

#1

Input Anomalies



area of interest



lithochemical anomalies -Chevron

and 4) intersected anomalous base metal and gold values. Some of the best analyses are:

	<u>From</u>	<u>To</u>	<u>Cu ppm</u>	<u>Zn ppm</u>	<u>Ag ppm</u>	<u>Au ppb</u>
			"Gold Horizon"			
DH 8401	46.94	48.46	193	423	0.7	1200
	48.46	52.73	293	405	0.2	40
	52.73	54.25	208	920	0.5	3000
	54.25	55.78	840	600	1.4	335
			Base Metal Zone			
DH 8402	12.19	13.20	>10,000	>10,000	N/D	100
	13.20	16.46	1378	1448	N/D	15
	16.46	17.68	50	570	N/D	135
			possible "Gold Horizon"			
	55.60	57.00	398	108	N/D	225
	57.00	57.91	710	85	N/D	255

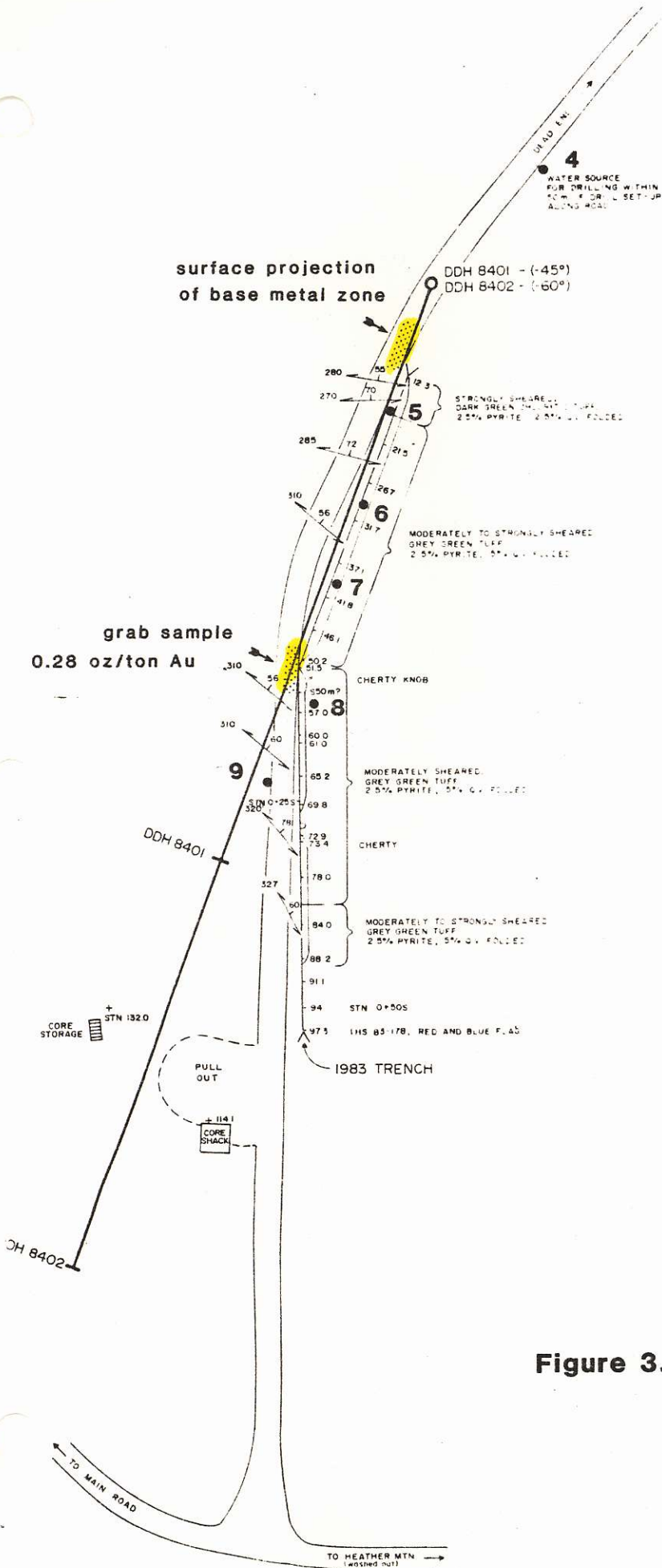
The altered rocks, pyrite and quartz veins (pods) at the main showing can be traced along strike approximately 3km. This "Showing lithology" varies from a few tens of metres to a hundred metres in width.

A graphitic argillite outcrop near the eastern boundary of the claims contains numerous pyrite clasts (Figure 2). Although a grab sample from this horizon contained no significant base metal values, it could mark a favourable horizon in an area not sampled or mapped by Chevron. Fyles (1955) identified a rhodonite showing called the Black Prince near this area.

Geochemistry

any heavy mineral?

Apart from isolated anomalous gold values related to quartz veins, in the Nitinat Formation, only the Myra Formation rocks contain anomalous geochemical values. These values are plotted on Figure 5 for the southern part of the Property and a few anomalies from the northeastern corner of the claims are shown on Figure 2. The best geochemical response (elevated Cu, Zn, Ba values and Na₂O depletion) occurs associated with the "showing lithology". A possible drill target is the sodium depletion zone with associated Ba highs and a coincident Input anomaly between Hooper and Heather Creeks.



METRES FROM COLLAR	SAMPLE No	Au (ppb)
12.3	RB 84111	15
21.5	RB 84110	105
26.7	RB 84109	80
31.7	RB 84108	30
37.1	RB 84107	20
41.8	RB 84106	15
46.1	RB 84105	45
50.2	RB 84104	50
57.0	RB 84103	45
60.0	RB 84102	20
61.0	RB 84101	41.5
65.2	RB 84100	50
69.8	no sample	-
72.9	RB 84099	20
78.0	RB 84098	<5
81.0?	RB 84097	1.5
84.0	RB 84096	<5
88.2	RB 84095	<5
91.1		

• DVL 1985 samples approx. location

Figure 3. Geology of the Main Showing, Heather Property

>2769, >2826, 57/5.47

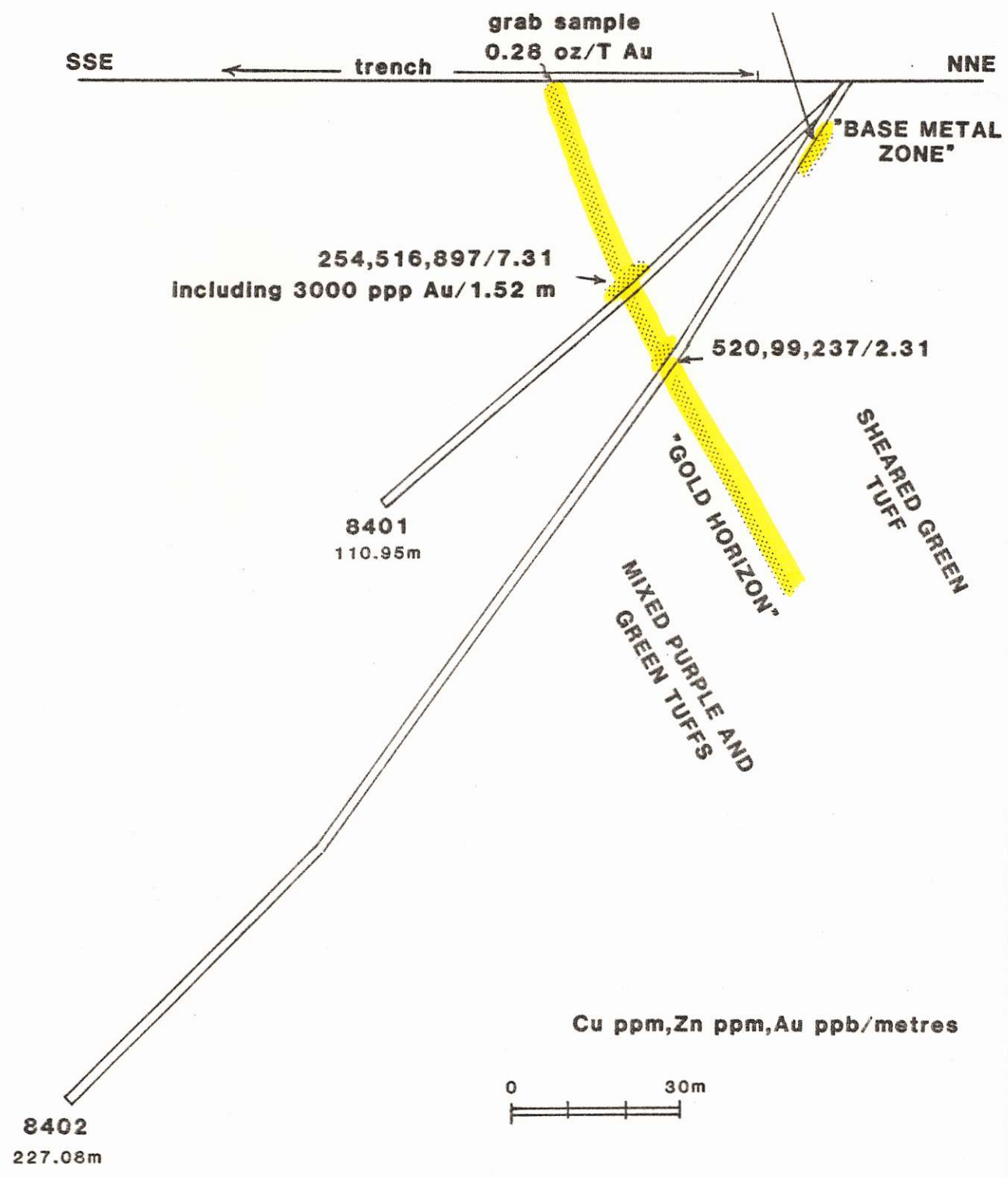


Figure 4. Cross section of Main Showing on the Heather Property

The numerous high gold values show the Heather Property is definitely anomalous in this respect compared to other areas in the Sicker Group (10 ppb threshold, Lefebure and Burge, 1984). Chevron were principally interested in the gold potential of this Property and they may have had the right idea.

Geophysics

The main showing was not detected by the Input survey, although several weak 1 and 2 channel anomalies were found in the area. EM 37 surveys were completed over the main showing and the #1 Input anomaly. A "weak" cross-over anomaly (0+00E, 1+00W) was recorded on the early channels (1-5) approximately 60m north of the main showing trench and a "pseudo" cross-over on the same grid on line 1+00E at 0+75S. No other EM 37 anomalies were identified (Lebel, 1984). The EM 37 results are not very useful because the extent of the EM 37 surveys was limited and the loop configuration not suitable for coupling with a steeply dipping conductor, the most probable target. Further ground geophysics (MaxMin, IP) is warranted along the "showing lithology". It is interesting to note that the drill holes did not test the only EM 37 conductor located near the main showing (0+00E, 1+00N). A mise-a-la-masse survey on the main showing showed that no laterally continuous, highly conductive body occurs near surface.

The Input survey identified 5 other weak anomalies (Figure 2). Two of them (#5 and #6) lie along strike from the main showing and should be investigated on the ground.

Conclusions

1. Chevron's work provides a useful starting point for evaluating the main showing horizon but the rest of the Heather Property is virtually unknown.
2. Away from the main showing horizon exploration has turned up very minor amounts of sulphides. However, anomalous Au values (>20 ppb) in rocks from the claims are common.
3. Chevron has inadequately tested the main showing horizon and the only two holes drilled on this horizon returned encouraging results.
4. This property is one of the most prospective areas identified by CFC which is underlain by Sicker Group mafic volcanic rocks.

Recommendations

1. Option the Property with token payments and a commitment to drill during the first year.
2. Concentrate on investigating the main showing horizon with trenching, ground geophysics and drilling.
3. Complete lithochemical sampling and reconnaissance mapping of claims.

A handwritten signature in cursive script that reads "David Lefebvre". The signature is written in dark ink and is positioned above the printed name.

D. V. Lefebvre

References

- Bruaset, R. U. 1985. Heather Project - Termination Report, Cowichan Lake Area, Victoria M.D., B. C. Chevron Resources report, 13p.
- Fyles, James T. 1955. Geology of the Cowichan Lake area. Bulletin No. 37, B.C. Dept. of Mines, 69p.
- Lefebure, D. and Burge, C. 1984. Review of lithochemical results from 1983 reconnaissance programme, Sicker Group, Vancouver Island, 18p.
- McDougall, J. J. 1982. Preliminary report, Heather Creek gold prospects, property evaluation Falconbridge Nickel, 12p.
- Walton, G. 1983. Summary report - geological - geochemical on Carol-S, Tania S, Lucia S, Mario S, Carol S#2, Efrem S, Tania S#2, Tania S#3, Tania S#4, Carol S#3. Chevron Canada Resources Ltd. report, 10p.

List of DVL Samples, Heather Property 1985Main Showing (sampled from north to south)

- Heat 1 thin banded dark green and light green intermediate tuffs
 Heat 2 strongly foliated felsic tuff, rare quartz eyes
 Heat 3 strongly foliated argillite
 Heat 4 light grey intermediate tuff, chloritic(?) flecks, quartz-ankerite stockwork
 Heat 5 wkly chloritic, mod. foliated intermediate tuff, 5% pyrite as disseminations and veinlets
 Heat 6 siliceous tuff, numerous quartz veins, 7-20% diss. pyrite
 Heat 7 light grey intermediate tuff, 2% diss. py.
 Heat 8 light grey intermediate tuff, numerous quartz veinlets with associated 5-10% diss. pyrite, trace cp
 Heat 9 boulder of semi-massive sulphides, pyrite and quartz

Quartz Vein

- Heat 10 white, quartz vein in road bed near top of ridge
 Heat 11 Fe-carbonate altered wallrock, 5cm from sample Heat 10

Argillite Showing

- BCS 2377 massive rhyolite flow or dyke
 BCS 2378 graphitic argillite with pyrite clasts

Table 1 List of Analyses from Heather Property

COMPANY: CORP FALCONBRIDGE COPPER		MIN-EN LABS ICP REPORT										(ACT:LI26) PAGE 1 OF 2			
PROJECT NO: 80-302		705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2										FILE NO: 5-694			
ATTENTION: DAVID LEFEBURE		(604)980-5814 OR (604)988-4524										* TYPE ROCK GEOCHEM *		DATE: SEPT 27, 1985	
(VALUES IN %)	AL2O3	BA	CAO	FE2O3	K2O	MGO	MNO2	NA2O	PB	SI02	TIO2	ZP			
HEAT#1	14.71	.035	4.94	8.28	.41	4.13	.22	5.34	.005	60.15	.50	.005			
HEAT#2	12.35	.037	1.15	3.82	.91	.85	.09	1.71	.010	70.18	.32	.005			
HEAT#3	14.68	.013	6.35	12.01	1.47	1.88	.18	4.76	.005	56.90	1.18	.005			
HEAT#4	14.64	.005	.30	11.09	.06	7.65	.22	2.59	.014	56.94	.87	.005			
HEAT#5	12.97	.005	.01	18.71	.18	7.98	.19	.78	.013	51.92	1.11	.005			
HEAT#6	7.23	.005	.06	8.24	.29	5.22	.14	.03	.010	67.31	.51	.005			
HEAT#7	14.00	.005	.03	13.16	.22	9.34	.21	.56	.021	55.16	1.34	.005			
HEAT#8	13.21	.005	.03	15.07	.46	6.79	.15	1.67	.013	61.09	.98	.005			
HEAT#10	3.48	.009	.04	1.93	1.10	.67	.05	.04	.010	89.04	.23	.005			
HEAT#11	15.84	.045	11.44	9.87	5.79	2.96	.27	.05	.005	43.19	.88	.008			
BCS 2377	16.28	.095	2.51	5.27	2.08	4.63	.15	2.16	.005	66.15	.50	.011			

COMPANY: CORP FALCONBRIDGE COPPER		MIN-EN LABS ICP REPORT										(ACT:LI26) PAGE 2 OF 2			
PROJECT NO: 80-302		705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2										FILE NO: 5-694			
ATTENTION: DAVID LEFEBURE		(604)980-5814 OR (604)988-4524										* TYPE ROCK GEOCHEM *		DATE: SEPT 27, 1985	
(VALUES IN %)	CU-PPM	ZN-PPM	Au ppb	CO ₂ as CaCO ₃ equivalent											
HEAT#1	97	93	12												
HEAT#2	39	81	4												
HEAT#3	43	98	5												
HEAT#4	152	97	7	2.53											
HEAT#5	30	165	49												
HEAT#6	53	147	99												
HEAT#7	56	255	7												
HEAT#8	150	195	28												
HEAT#10	360	23	1750												
HEAT#11	22	54	385												
BCS 2377	26	84													

Heat #9 0.73% Cu, 0.01% Zn, 0.01% Ba, 835 ppb Au

BCS 2378 34 ppm Cu, 63 ppm Zn, 1.6 ppm Ag, 40 ppb Au