85-924-14083.

GEOLOGY and GEOCHEMISTRY
of the
DOUBT CLAIMS (3878)

Nelson Mining Division
82F/3W
117° 26' 49° 10'

Owner/Operator:
Falconbridge Limited
6415-64th Street
Delta, BC V4K 4E2

by: C. M. Burge

December 1, 1985

TABLE OF CONTENTS

FIGURES

Summary

The Doubt Claims were staked as a result of a regional lithogeochemical programme carried out by Falconbridge Limited in 1984.

Work in 1985 consisted of 1:10,000 scale mapping, prospecting and sampling.

1. Introduction

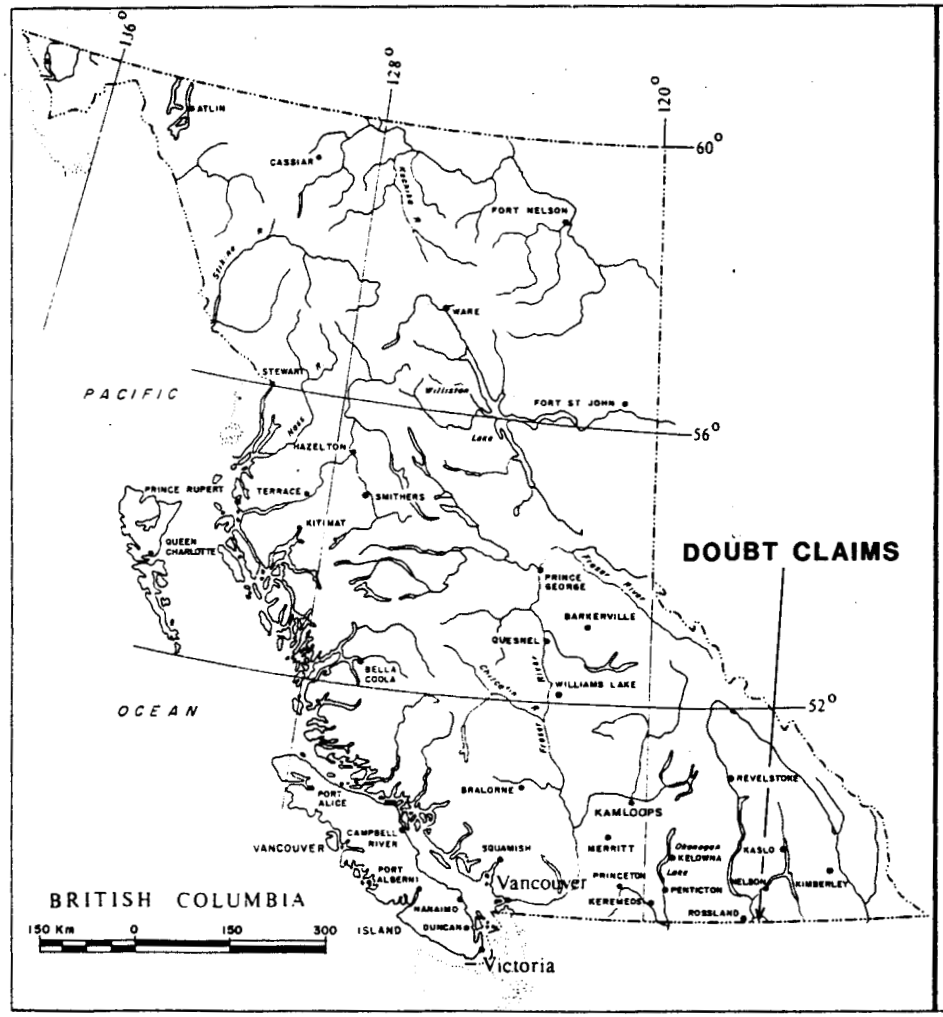
The Doubt Claims are located in the Nelson Mining Division, in the valley of the Query and Doubtful Creeks, about 12.5 kilometers southwest of Salmo, as shown on Figure 1. Access is by logging road along Query Creek, one kilometer west of the junction of Highways 3 and 3B.

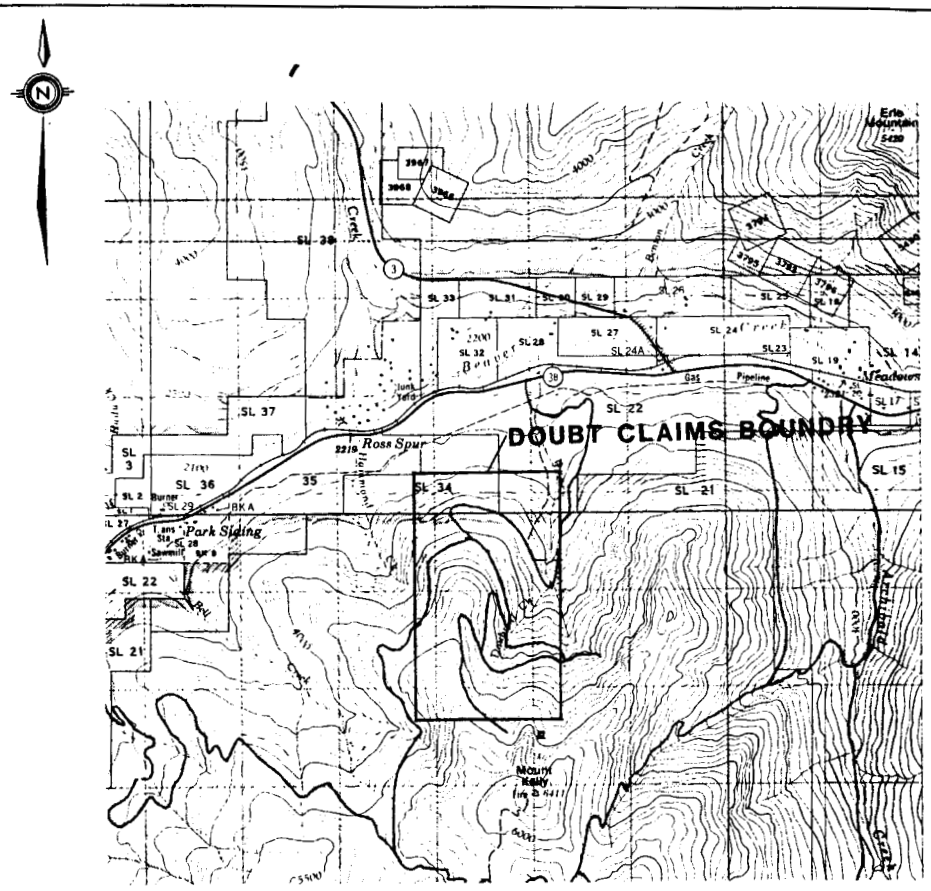
A total of 44 lithogeochemical samples were collected and 1:10,000 scale geological mapping and prospecting was completed. Beyond this, apparently little recent work has been carried out on the block.

All work was completed by a 2-man crew based in Salmo over the period August 27 to September 2, 1985.

2. Location and Access

The Doubt Claims are located in the Nelson Mining Division, centered at about 117°26' longitude and 49°10' latitude, within NTS 82F/3W. They are best reached by a good logging road along Query Creek, which leaves Highway 3B about 1200 metres west of its junction with Highway 3. Access roads also run along Archibald Creek to the east and along Bell Creek to the west.





SCALE 1:50,000

FALCONBRIDGE LTD.

LOCATION MAP
DOUBT CLAIMS

DRAWN BY: CMB	FIG. NO: 1
DATE: NOV.85	
N.T.S. 82/3W	

3. Regional Geology

The area is underlain by Paleozoic and Lower Jurassic volcanics and sediments intruded by Cretaceous plutons. The Lower Jurassic Rossland Group outcrops in an arcuate belt 70km long and 7-12km wide. It is about 2000-3000m thick, and is intercalated with fine clastics of the Archibald and Hall Formations. Volcanic rocks in the Rossland Group are represented by the Elise Fm, which was deposited in the Rossland Trough, the western margin of a larger sedimentary basin which included the Quesnel Trough. Subsequent tectonism and intensive plutonism have destroyed this continuity.

The preserved Rossland Group consists of the pyroclastic and epiclastic debris which accumulated around isolated volcanic centers, as in an active island arc. The compositions are compatible with modern island arc volcanics which form in the late stages of arc development in a back arc extensional regime. Modern analogs suggest the volcanics may have formed in a localized ocean basin extruding along faults bounding the western basin edge.

In the regime area the Archibald Formation has a limited aerial extent and consists of mostly hard, brittle, dark grey to black argillaceous siltstones and arenaceous argillites. The Hall Formation has a similarly limited aerial extent and consists mostly of black, carbonaceous shales and brown, soft argillaceous sandstones (Little, 1982). Because of limited aerial extent and unfavourable lithologies, the Archibald and Hall Formations were not considered to be favourable for volcanogenic targets and no systematic sampling was carried out.

The Elise Formation was the most appealing target for an exhalitive type deposit due to its large aerial extent, favourable lithologies, and numerous base and precious metal showings. The lithology of the Elise Formation in the Rossland-Trail-Salmo area is predominantly volcanic. These rocks consist mainly of flow breccias, massive lava flows, agglomerates, volcanic breccias, minor tuffs and related intrusive rock.

4. Property Geology

The lithologies on the Doubt Claims are predominantly fragmental mafic volcanics intercalated with thinly laminated argillites and greywackes. The bulk of the outcrops examined reveal very little in the way of alteration or appreciable sulphide content.

The coarsest fragmental unit present is a volcanic flow breccia of the Elise Formation. This fragment-supported unit is typified by blocks of lapilli-sized sub-rounded clasts of crystalline rock, other volcanic units, and even limestone in the basal sequence.

The mafic crystal tuff represented in the Doubt Claims consists of 1-2mm crystals of pyroxene with a definite preferred orientation forming the framework in a fine-grained volcanic matrix.

Finally an amygdaloidal olivine basalt unit with some of the amygdules calcite-filled, occurs at the south end of the property. The amygdules have compressed somewhat to conform to the foliation of the fragmental rocks in the area.

The structure appears realatively simple with very little faulting or folding indicated by the outcrops examined.

Two zones of carbonate altered volcanics with associated pyrite have been marked on the geological map (Figure 2). Unfortunately no significant assays for base and precious metals were obtained.

5. Lithogeochemistry

5.1 Introduction

A systematic exploration programme with focus on lithogeochemistry was carried out to investigate potential of the units of the Elise Fm of the Rossland volcanic Group.

A two-man crew consisting of the writer and an assistant carried out a systematic lithogeochemical and geochemical programme during the period August 27 to September 2, 1985.

The purpose of the Programme was to confirm the presence of to date, unrecognized alteration areas or halos.

5.2 Sampling

Sampling involved the collection of samples from all volcanic rock types belonging to the Elise Formation. Two samples of about ½kg each were collected at each site - one for a lithogeochemical analysis and one for later reference and/or to prepare thin sections from. Samples were collected across well-exposed sections wherever possible, however, in areas of poor exposure, or areas of high interest, e.g. alteration, samples were taken from all available outcrops. Care was taken to ensure that only the most representative, non-weathered samples were collected. In heterogeneous outcrops, particularly those of layered rocks, attention was paid tosampling the different components. Details of the sample variability such as colour, mineralogy, alteration, weathering, rock name, presence of sulphides and textures were kept on a standardized table form. Sample results are shown in the Figures.

5.3 Analyses

Samples were shipped to Terramin Research Laboratories in Calgary. Following preparation of minus 200-mesh pulps, the samples were analyzed by XRF and atomic absorption spectrophotometry for a total of ten elements: SiO_2, MgO, K_2O, Na_2O, Ba, and TiO_2. Cu, Zn, Pb, Ag and Au were analyzed by atomic absorption. Sample results are listed in Appendix A.

6. Recommendations and Discussion

Although precious metal values obtained were not encouraging, I would recommend further work be carried out on this property. This would involve a more concentrated sampling programme in the area of Sample LR-81 and in the area of the dacite range intrusive rock. A good deal of ground remains to be covered on these claims.

7. Conclusions

Regionally the volcanic rock suite represented on the Doubt Claims has good potential for hosting massive sulphides. The sampling programme reported here failed to outline any significant alteration or base metal enriched zones. However, in lieu of the limited coverage, further work should be carried out with a target of this kind in mind.

FALCONBRIDGE LIMITED
6415 - 64th Street, Delta, B.C., Canada V4K 4E2
Tel. (604) 946-0441
Telex 04-357583

Expl. 717/85
November 14, 1985

Chief Gold Commissioner
Ministry of Energy, Mines &
Petroleum Resources
Parliament Buildings
Victoria, B.C.
V8V 1X4

STATEMENT OF QUALIFICATIONS

Dear Sir:

This is to state that I have obtained a Bachelor of Science in Earth Sciences in 1981 from the University of Waterloo, Waterloo, Ontario. I have been actively engaged in mineral exploration in the province of British Columbia since 1983.

Yours truly,
FALCONBRIDGE LIMITED

CB:mm

Colin Burge
Geologist

Itemized Cost Statement

GEOLOGY:

Salaries -	C. Burge, Geologist, August 27-29, Sept. 2 4 days @ $140/day	$ 640.00
	R. Anselmo, Assistant as above @ $80/day	320.00
		$ 960.00
Geochemistry -	Rock analyses 44 samples @ $22.20/sample	$ 976.80
	(for SiO_2,TiO_2,MgO,Na_2O,K_2O, Au,Ag,Ba,Cu,Pb,Zn)	
	Total:	$1936.80

APPENDIX A: LITHOGEOCHEMICAL DATA

ANALYTICAL METHODS FOR WHOLE ROCK

Geochemical samples for whole rock analytical procedure were processed by Terra-Min Laboratories Limited at 14-2235-30th Avenue, NE, Calgary, Alberta, employing the following procedures.

Rock samples are crushed to approximately one-eighth of an inch in a jawcrusher, riffled to obtain a representative sample and pulverized to 100 mesh (180 micron particle size).

A portion of the prepared sample is mixed with a lithium metaborate flux and fused. The resulting melt is poured into an acid matrix and completely dissolved. The solution is analyzed by AA technique for the required major element and calculated as oxides of these elements.

Base metal values calculated are from a portion of the prepared sample that is digested in hot nitric/ perchloric acid mixture, or hot aqua regia (nitric/ hydrochloric acids). The elements are then determined by atomic absorption spectrophotometry.

TERRAMIN RESEARCH LABS LTD.

→ SLH → XC CIS

Falco idge Limited - Colin Burge

JOB # 85-205

	Client No.	SiO_2 %	MgO %	Na_2O %	K_2O %	TiO_2 %	Ba ppm		Cu ppm	Pb ppm	Zn ppm		Au ppb	Ag ppb	
1	DS-001-85	56.0	3.81	3.63	1.04	0.70	650		29	4	79		40	90	
2	002	58.2	3.51	3.38	1.99	0.65	1140		35	7	77		8	80	
3	003	50.9	4.61	3.03	2.65	0.97	1590		90	-1	81		4	40	
4	004	50.1	5.22	2.99	2.40	0.67	860		127	4	76		4	90	
5	005	54.5	3.40	4.69	2.18	0.62	650		154	3	80		8	50	
6	006	52.4	1.57	3.69	4.10	0.52	990		117	5	73		10	50	
7	007	54.8	2.58	4.29	2.61	0.50	860		61	4	60		2	80	
8	008	53.5	2.17	3.24	4.86	0.55	1480		138	3	98		2	80	
9	009	49.8	4.77	3.13	1.54	0.92	990		112	-1	77		16	130	
10	010	58.4	3.00	3.24	2.51	0.63	1140		31	3	85		4	70	
1	011	61.0	2.66	3.61	1.84	0.60	950		28	5	72		4	50	
2	012	59.7	2.44	3.44	1.87	0.62	1170		20	5	80		2	50	
3	013	59.7	3.36	4.30	1.00	0.63	960		27	-1	83		8	40	
4	014	51.6	3.25	4.29	1.83	0.72	1480		104	2	66		12	10	
5	015	53.5	3.63	5.54	1.86	0.57	770		128	-1	67		8	190	
6	016	43.4	3.14	1.04	1.41	0.70	470		132	1	74		4	60	
7	017	58.8	2.57	2.75	1.81	0.72	830		38	2	83		6	60	
8	018 mafic tuff	51.1	6.23	2.72	1.12	0.70	940		140	82	76		8	80	
9	019	61.6	3.07	2.66	1.75	0.55	820		29	1	77		2	70	
20	020	55.8	4.07	3.87	1.87	0.70	1620		30	1	82		2	30	

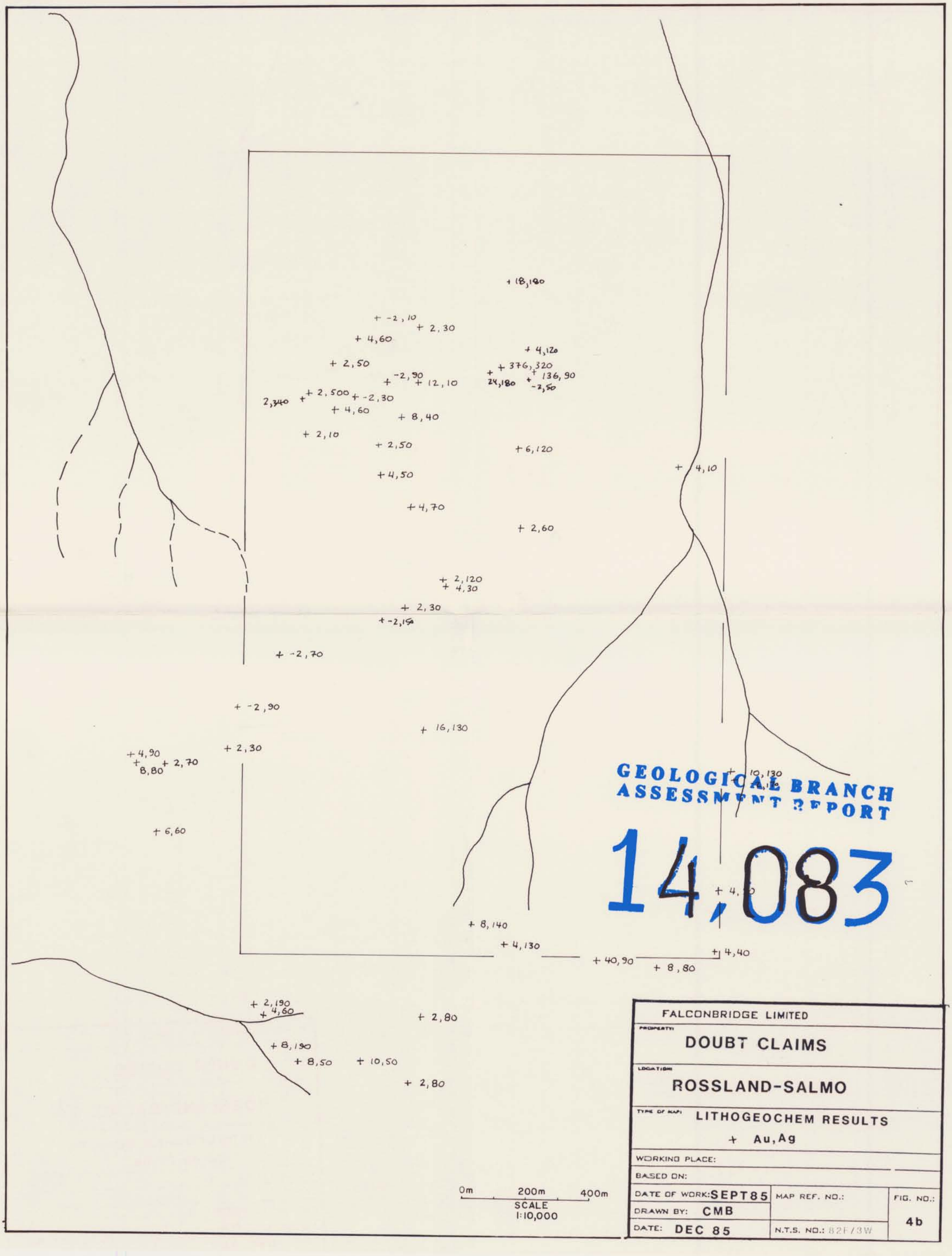
	Client No.	SiO_2 %	MgO %	Na_2O %	K_2O %	TiO_2 %	Ba ppm		Cu ppm	Pb ppm	Zn ppm		Au ppb	Ag ppb	
21	DS-021-85	53.7	4.34	2.79	2.39	0.63	890		113	2	58		-2	90	
2	022 Mafic Tuff	50.9	7.84	2.28	.982	1.10	940		165	-1	89		-2	70	
3	023	75.9	.114	3.83	4.01	0.07	90		2	14	25		-2	10	
4	024 Dacite	61.2	2.28	5.14	4.10	0.47	1680		21	1	28		2	30	
5	025	50.7	4.12	1.95	5.19	0.82	1950		75	1	82		2	10	
6	026	56.3	3.43	3.17	3.01	0.68	940		81	2	89		4	60	
7	027	53.7	3.60	3.68	2.00	0.68	1070		119	3	70		-2	90	
8	028	52.6	5.04	3.37	1.42	0.68	500		66	1	100		-2	10	
9	029	58.2	1.62	.791	4.93	0.62	1130		19	6	42		4	60	
30	030	53.5	3.34	2.78	1.42	0.67	800		135	1	66		2	50	
1	031	49.8	3.96	2.52	1.41	0.63	450		61	32	300		2	500	
2	032	53.5	4.86	1.89	.235	0.70	260		151	-1	77		4	130	
3	033	50.9	6.81	1.66	.217	1.08	380		172	-1	95		2	120	
4	034	51.3	8.22	1.97	2.01	0.67	1060		117	2	72		10	130	
5	035	62.9	3.43	3.59	1.45	0.60	830		26	3	78		2	60	
6	036	52.8	5.67	2.48	1.83	0.70	1440		60	3	70		2	30	
7	037	61.0	3.27	3.28	1.66	0.60	870		24	3	66		4	10	
8	SS-001	62.2	1.03	.074	6.77	0.50	470		39	4	10		20	610	
9	002	64.0	3.42	3.21	1.63	0.50	350		34	3	60		8	60	
40	003	78.3	.034	3.96	3.52	0.05	50		1	26	23		42	120	
41	004	61.4	2.84	2.28	2.74	0.60	390		31	4	31		4	10	

TERRAMIN RESEARCH LABS LTD.

Falconbridge Limited - Colin Burge

JOB # 85-249

	Client No.	SiO_2 %	MgO %	Na_2O %	K_2O %	TiO_2 %	Ba ppm		Cu ppm	Pb ppm	Zn ppm		Au ppb	Ag ppb	
1	DS - 038	51.3	4.46	2.86	1.90	0.72	590		35	30	310		2	340	
2	039	51.6	2.65	1.56	4.54	0.77	1420		310	1	43		24	180	
3	040	52.8	3.12	3.06	3.02	0.73	790		9	-1	40		-2	50	
4	041	52.8	2.35	5.26	1.30	0.72	670		82	1	26		4	120	
5	042	47.3	8.84	1.91	1.37	0.70	710		121	2	72		-2	170	
6	043	56.3	2.30	4.99	4.47	0.55	1630		25	1	34		-2	150	
7	044	54.3	2.57	2.63	2.36	0.72	1290		168	-1	30		18	180	
8	SS - 133	86.2	.085	.081	.501	0.03	16600		280	150	310		188	14200	Plotted
9	134	73.8	.015	4.72	3.89	0.03	140		22	26	38		36	260	
10	135	47.5	3.70	2.04	2.42	0.62	890		124	1	83		-2	150	
11	136	74.9	.096	6.05	2.48	0.03	50		7	14	27		-2	120	
12	137	46.4	3.23	3.03	2.49	0.60	1230		113	2	74		-2	130	
13	138	64.8	.398	4.97	2.80	0.28	1060		10	7	38		2	20	
14	139	75.9	.028	4.22	4.12	0.03	50		4	82	22		48	130	
15	140	58.2	3.48	4.25	2.11	0.60	1080		72	14	94		-2	60	
16	141	51.6	4.64	3.38	1.55	0.77	1020		33	2	54		2	80	
17	142	52.4	5.04	1.86	3.60	0.67	760		136	4	70		46	440	
18	143	49.8	3.51	1.94	4.89	0.68	900		70	2	47		12	140	
19	144	47.7	3.93	.736	3.59	0.52	670		180	3	75		2	440	
20	145	50.3	4.74	4.73	2.24	0.72	830		62	2	77		6	270	



GEOLOGICAL BRANCH
ASSESSMENT REPORT

14,083

FALCONBRIDGE LIMITED		
PROPERTY: DOUBT CLAIMS		
LOCATION: ROSSLAND-SALMO		
TYPE OF MAP: LITHOGEOCHEM RESULTS + Au,Ag		
WORKING PLACE:		
BASED ON:		
DATE OF WORK: SEPT85	MAP REF. NO.:	FIG. NO.: 4b
DRAWN BY: CMB		
DATE: DEC 85	N.T.S. NO.: 82F/3W	

+ 168, -1, 30, 1290

+ 66, 1, 100, 500
+ 60, 3, 70, 1440
+ 19, 6, 42, 1130
+ 82, 1, 26, 670
+ 530, -1, 50, 800
+ 107, -1, 36, 650
+ 135, 1, 60, 800
+ 119, 3, 70, 1070
+ 9, -1, 40, 790
+ 104, 2, 66, 1480
+ 310, 1, 43, 1420
+ 61, 32, 300, 450
+ 77, 2, 97, 730
35, 10, 310, 540
+ 81, 2, 89, 940
+ 27, -1, 83, 960
+ 75, 1, 82, 1950
+ 20, 5, 80, 1170
+ 117, -1, 34, 1420
+ 24, 3, 66, 870
+ 28, 5, 72, 950
+ 31, 3, 85, 1140
+ 26, 3, 78, 830
+ 172, -1, 95, 320
+ 31, -1, 76, 1050
+ 21, 1, 28, 1680
+ 25, 1, 34, 1630
+ 165, -1, 89, 940

+ 113, 2, 58, 890
+ 112, -1, 77, 990
+ 26, 107, 66, 1010
+ 29, 1, 77, 820
140, 82, 76, 940
+ 30, 1, 82, 1620
+ 38, 2, 83, 830
+ 117, 2, 72, 1060
+ 121, 2, 72, 710
+ 127, 4, 76, 860
+ 187, 3, 70, 1380
+ 151, -1, 77, 260
+ 90, -1, 81, 1590
+ 29, 4, 79, 650
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+ 132, 1, 74, 470
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+ 117, 5, 73, 990
+ 154, 3, 80, 650
+ 61, 4, 60, 860

0 m — 200 m — 400 m
SCALE
1:10,000

FALCONBRIDGE LIMITED

PROPERTY:
DOUBT CLAIMS

LOCATION:
ROSSLAND-SALMO

TYPE OF MAP:
LITHOGEOCHEM RESULTS
Cu, Pb, Zn, Ba

WORKING PLACE:

BASED ON:

DATE OF WORK: SEPT 85	MAP REF. NO.:	FIG. NO.: 4a
DRAWN BY: CMB		
DATE: DEC 85	N.T.S. NO.: 82 F/3W	

+ 54.3, 2.57, 2.63, 2.36

+ 52.6, 5.04, 3.37, 1.42
+ 52.8, 5.67, 2.48, 1.83
+ 58.2, 1.62, .791, 4.93
51.6, 2.65, 1.56,
+ 52.4, 2.35, 5.26, 1.30
+ 53.5, 3.34, 2.78, 1.48
4.54
+ 57.5, 3.67, 2.96, .751
+ 49.8, 3.14, 2.60, .684
53.7, 3.60, 3.68, 2.00
+ + 51.6, 3.25, 4.29, 1.83
+ 52.8, 3.12, 3.06, 3.02
+ 49.8, 3.96, 2.52, 1.41
51.3, 4.46, 2.86 + 1.90
+ 50.9, 4.12, 1.94, .784
+ 56.3, 3.43, 3.17, 3.0(
+ 59.7, 3.36, 4.30, 1.00
+ 50.7, 4.12, 1.95, 5.19
+ 59.7, 2.44, 3.44, 1.87
+ 48.8, 2.43, 1.59, 1.08
+ 61.0, 3.27, 3.28, 1.66
+ 61.0, 2.66, 3.61, 1.84
+ 58.4, 3.00, 3.24, 2.51
+ 62.9, 3.43, 3.59, 1.45
+ 50.9, 6.81, 1.66, .217
+ 50.1, 3.80, 1.30, .784
+ 61.2, 2.28, 5.14, 4.10
+ 56.3, 2.7, 4.99, 4.47
+ 50.9, 7.84, 2.28, .982
+ 53.7, 4.34, 2.79, 2.39
+ 49.8, 4.77, 3.13, 1.54
+ 59.9, 3.64, 2.24, .50 + 55.8, 4.07, 3.87, 1.87
+ + 61.6, 3.07, 2.66, 1.75
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+ 58.8, 2.67, 2.75, 1.81
+ 47.3, 8.94, 1.91, 1.27
51.3, 8.22, 1.97, 2.01
+ 50.1, 5.22, 2.99, 2.40
+ 47.2, 2.40, 2.83, .784
+ 53.5, 4.86, 1.89, .235
+ 50.9, 4.69, 3.03, 2.65
+ 56.0, 3.81, 3.63, 1.04
+ 58.2, 3.61, 3.38, 1.99
47.3, 2.49, 2.14, .634
+ + 43.4, 3.14, 1.04, 1.41
+ 53.5, 2.17, 3.24, 4.86
+ 53.5, 3.63, 5.54, 1.86
+ 52.4, 1.57, 3.69, 4.10
+ 54.5, 3.40, 4.69, 2.18
+ 54.8, 2.58, 4.29, 2.61

0m 200m 400m
SCALE
1:10,000

FALCONBRIDGE LIMITED

PROPERTY:
DOUBT CLAIMS

LOCATION:
ROSSLAND-SALMO

TYPE OF MAP:
LITHOGEOCHEM RESULTS
+ SiO2, MgO, Na2O, K2O

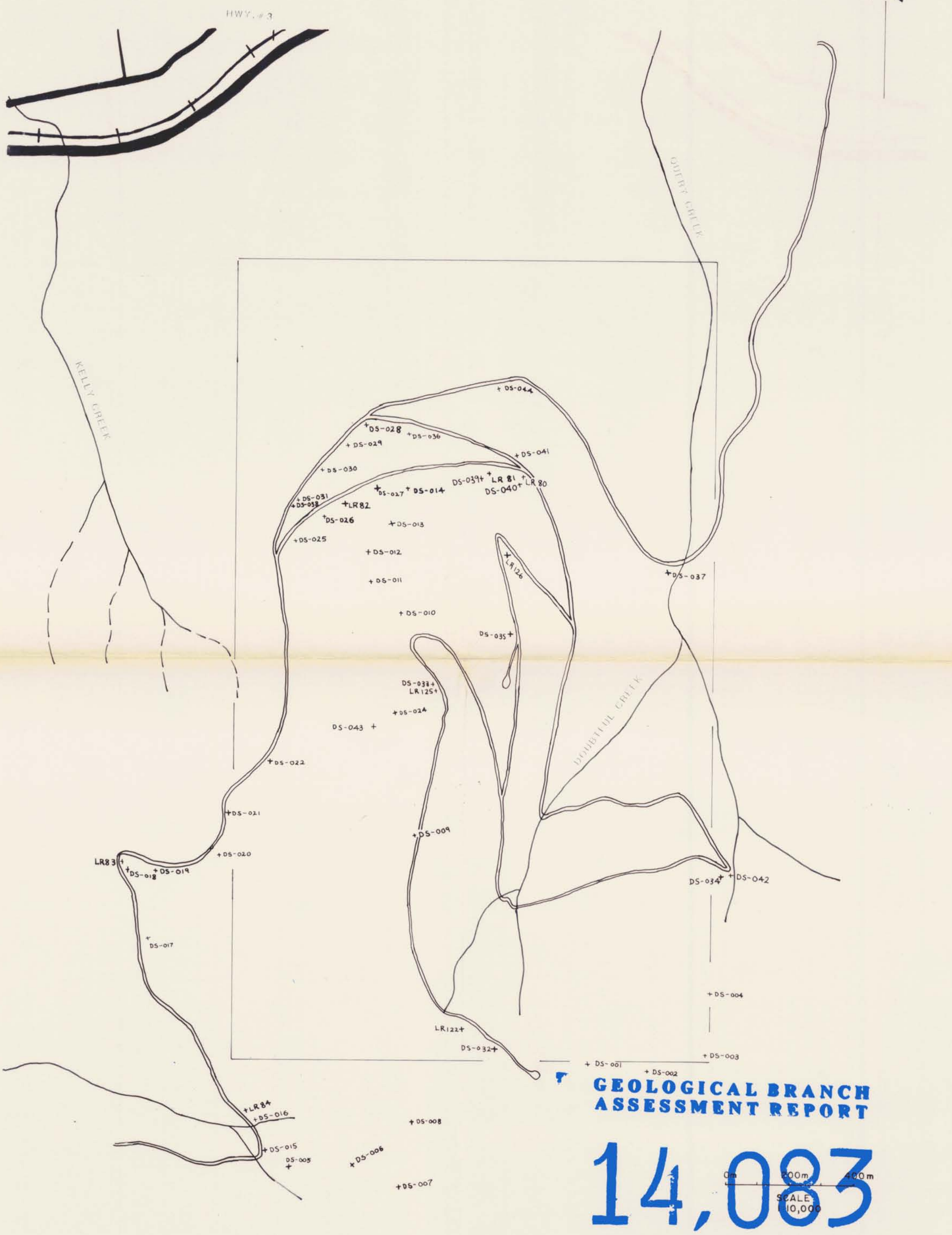
WORKING PLACE:

BASED ON:

DATE OF WORK: SEPT 85 | MAP REF. NO.: | FIG. NO.: 4c

DRAWN BY: CMB

DATE: DEC 85 | N.T.S. NO.: 82F/3W



GEOLOGICAL BRANCH
ASSESSMENT REPORT

14,083

LEGEND

+ DS = Sample taken Sept 1985, C.M.B. R.A.

+ LR = Sample taken Aug. 1984, L. Uher

—— CLAIM BOUNDARY

FALCONBRIDGE LIMITED	
PROPERTY: DOUBT CLAIMS	
LOCATION: ROSSLAND-SALMO	
TYPE OF MAP: ROCK SAMPLE LOCATIONS	
WORKING PLACE:	
BASED ON:	
DATE OF WORK: SEPT 85	MAP REF. NO.: FIG. NO.: 3
DRAWN BY: CMB	
DATE: DEC 85	N.T.S. NO.: 82F/3

LEGEND

1 MAFIC VOLCANICS
- a. Agglomerate (mafic lava, serpentinized clasts, poorly sorted)
- b. Pyroxene tuff (pyroxene and feldspar crystals)
- c. Olivine flow (amygdaloidal)

4. MAFIC INTRUSIONS

5. FELSIC INTRUSIONS

6. SEDIMENTS (tuffaceous, laminated argillites, greywackes and ash units)

— CLAIM BOUNDARY

0m 200m 400m
SCALE

FALCONBRIDGE LIMITED		
PROPERTY: **DOUBT CLAIMS**		
LOCATION: **ROSSLAND-SALMO**		
TYPE OF MAP: **GEOLOGY**		
WORKING PLACE:		
BASED ON:		
DATE OF WORK: SEPT 85	MAP REF. NO.:	FIG. NO.: 2
DRAWN BY: C.M.B.		
DATE: DEC 85	N.T.S. NO.: 82F/3W	