D. L. COOKE AND ASSOCIATES LTD.
MINERAL EXPLORATION CONSULTANTS

PART 1

1991 ASSESSMENT REPORT

ON THE

GEOLOGY AND ROCK GEOCHEMISTRY OF THE JW, AND WJ CLAIMS

TCHENTLO LAKE AREA

OMINECA M.D.

LATITUDE: 55° 05' NORTH

LONGITUDE: 124° 56' WEST

N.T.S. 93N/2W

BY

DAVID L. COOKE, PH.D., P.ENG.

D. L. COOKE & ASSOCIATES LTD.

VANCOUVER, B.C.

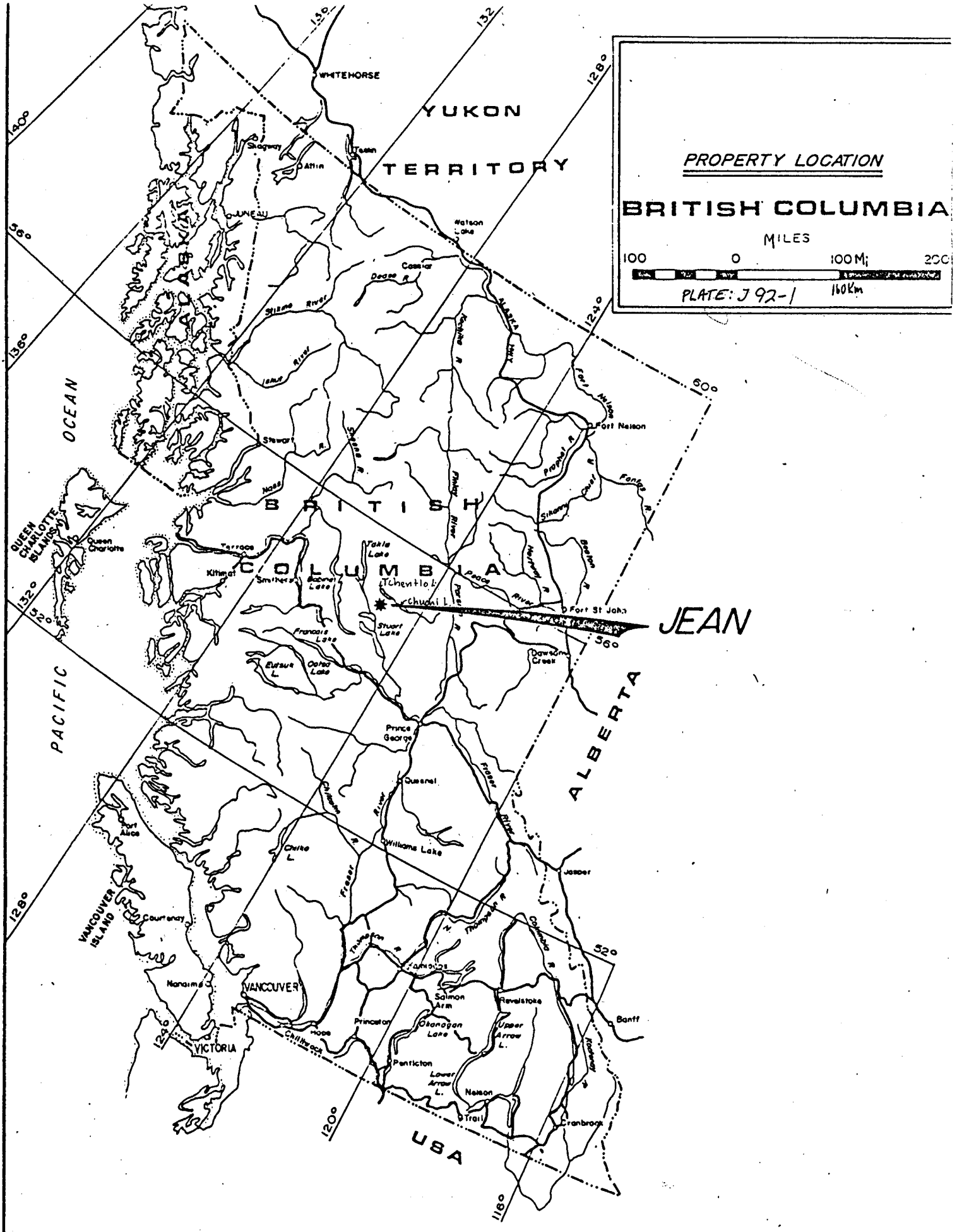
REPORT: June 23, 1992

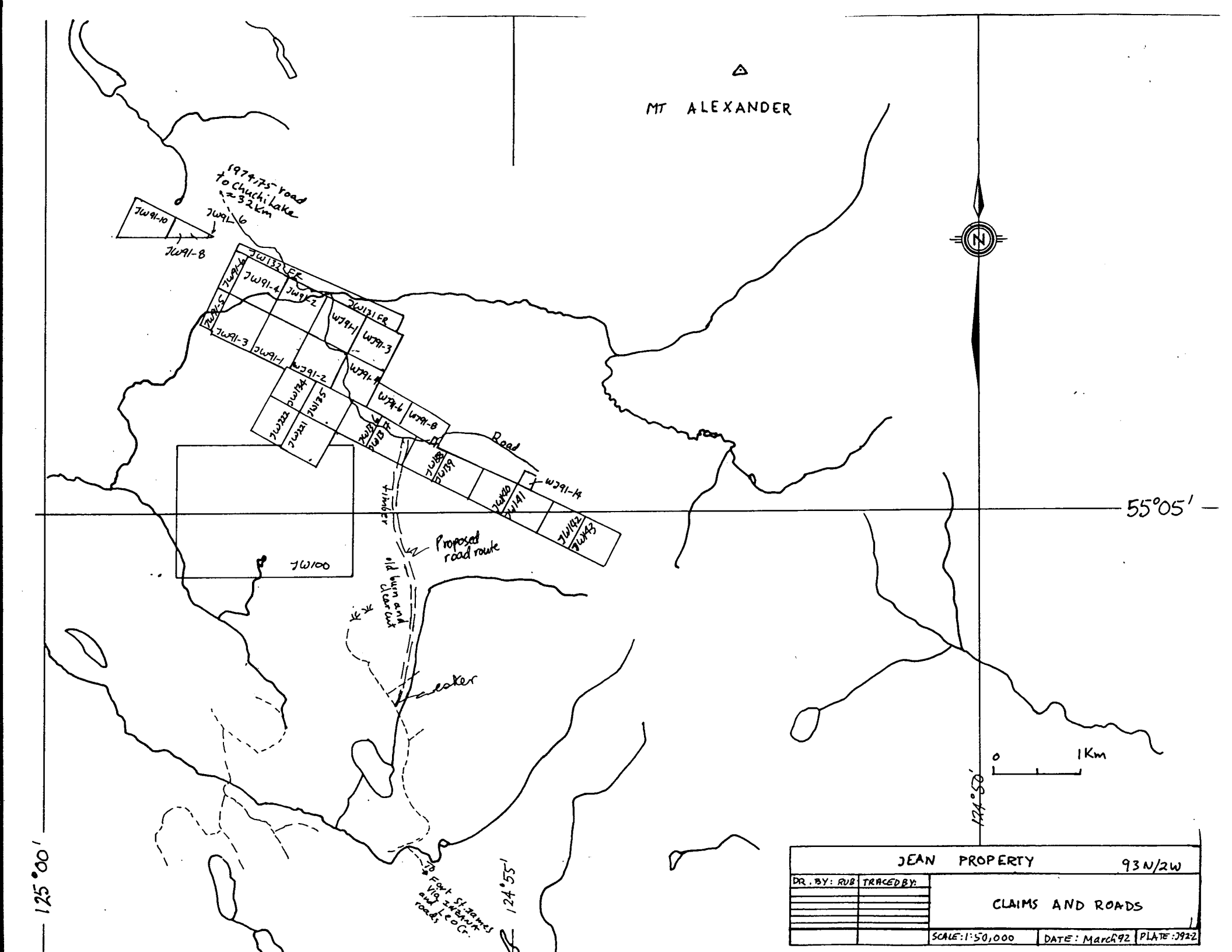
WORK DONE: July 29, 1991 - June 22, 1992

CLAIMS ON WHICH FIELD WORK WAS DONE

Claim	Units	Record Number	Record Month
JW 91 - 1 to 6	6	301229 to 301234	June
WJ 91 - 1 to 4	4	301239 to 301242	June
WJ 91 - 6	1	301244	June
WJ 91 - 8	1	301246	June

TABLE OF CONTENTS


PROPERTY LOCATION
BRITISH COLUMBIA
MILES
100 0 100 Mi 200
160 Km
PLATE: J 92-1
YUKON TERRITORY
BRITISH COLUMBIA
ALBERTA
PACIFIC OCEAN
USA
JEAN
WHITEHORSE
Skagway
Atlin
Juneau
Watson Lake
Dease R.
Cassiar
Stikine River
Liard River
Alaska Hwy
Fort Nelson
Stewart
Nass
Terrace
Kitimat
Smithers
Queen Charlotte
Queen Charlotte Islands
Table Lake
Babine L.
Tchentlo L.
Chuchi L.
Peace River
Fort St John
Dawson Creek
Stuart Lake
Francois Lake
Ootsa L.
Eutsuk L.
Prince George
Quesnel
Fraser River
Williams Lake
Chilko L.
Fort Alice
Vancouver Island
Courtenay
Nanaimo
VANCOUVER
VICTORIA
Hope
Chilliwack
Jasper
Kamloops
Salmon Arm
Revelstoke
Banff
Princeton
Okanagan Lake
Upper Arrow L.
Penticton
Lower Arrow L.
Nelson
Trail
Cranbrook
Columbia R.
Kootenay R.
120°
124°
128°
132°
136°
140°
116°
120°
124°
128°
60°
56°
52°


MT ALEXANDER
1974,75 road to Chuchi Lake ≈32Km
JW91-10
JW91-6
JW91-8
JW132 FR
JW91-4
JW91-5
JW91-2
JW132 FR
JW91-3
JW91-1
W791-1
W791-3
W791-2
W791-4
JW134
JW135
JW222
JW121
W791-6
W791-8
JW136
JW137
JW138
JW139
W791-14
JW140
JW141
JW142
JW143
Road
JW100
Proposed road route
old burn and clear cut
Creek
55°05'
124°55'
125°00'
To Fort St James via Intact roads
0
1Km
JEAN PROPERTY
93N/2W
DR. BY: RUB
TRACED BY:
CLAIMS AND ROADS
SCALE: 1:50,000
DATE: March 92
PLATE: 1922

SUMMARY

The Jean property consists of 41 claim units which cover porphyry copper, molybdenum and gold mineralization, near the headwaters of Jean Marie Creek in the Tchentlo Lake area of central B.C. The sulphide mineralization consists of disseminated and fracture-controlled pyrite, chalcopyrite and molybdenite, associated with the southern contact area of the Jean Marie stock and intruded Takla volcanic rocks. The stock appears to have a diorite composition near its margins and granodiorite near its core. The volcanic rocks consist essentially of andesite flows and fragmentals. Monzonite dikes occur within the contact area of the Jean Marie stock and the Takla volcanic rocks.

The claims cover portions of the former Jean property which was drill-tested in 1971, 1974 and 1975 by the NBC Syndicate. Three mineralized zones were outlined by a series of 40 percussion and 6 diamond drill holes. The claims may be reached via 12 kilometres of logging road off the Leo Creek main haulage road, approximately 100 kilometres northwest of Fort St. James, B.C. The 1991 exploration program consisted of geological mapping and rock chip sampling of areas of known mineralization.

Preliminary surface sampling in 1991 indicates gold values of 39 to 945 ppb gold in association with copper mineralization and monzonite dikes near the volcanic-intrusive contact area.

The Jean property has the potential for the development of economically viable porphyry copper-molybdenum deposits. Additional values in silver and gold may be expected in association with monzonite dikes such as that which occurs on the Applecot showing (Fig. J 92-5).

A program of induced polarization, followed by a major diamond drill program is recommended to further test the property. The objective will be to determine the extent of porphyry copper-gold mineralization associated with alkaline monzonites intruded into the contact area between Triassic volcanics and the Jean Marie diorite-granodiorite intrusion.

INTRODUCTION

The Jean property was acquired for its known porphyry copper and molybdenum mineralization. No work is known to have been done on the subject claims since 1978. The first objective of the 1991 exploration program was to determine the gold potential of this known porphyry system and evaluate it for similarities with the Mt. Milligan porphyry copper-gold deposit of Placer Dome Inc.

The mobilization and demobilization of a two man crew to the centre of the property was done by helicopter from a logging area situated just off the southern boundary of the property. The exploration work was done by two geologists; namely R. U. Bruaset, B.Sc., and D. L. Cooke, Ph.D., P.Eng. The geological and rock geochemical findings of the 1991 program constitute Part 1 of this report. The cost of the program is herein submitted for assessment credits on the claims comprising the property.

1991 EXPLORATION PROGRAM

The 1991 exploration work consisted of geological mapping and rock chip sampling of known areas of sulphide mineralization. Preliminary biogeochemical studies were also undertaken, the results of which are presented as Part 2 of this Assessment Report.

LOCATION AND ACCESS

The Jean property is situated near the headwaters of Jean Marie Creek, southwest of Mt. Alexander and south of Tchentlo Lake (Figure 1). The property may be approached by approximately 100 kilometres of good logging road northwest of Fort St. James, B.C., and then reached by 12 kilometres of rough logging road east from the Leo Creek forest service road. The old access roads to the logged area lies a few hundred metres outside of the southern boundary of the Jean 100 claim.

Relief on the property is moderate with elevations ranging 1,050 to 1,250 metres. Timber cover consists of poplar, Lodgepole pine, spruce and Balsam fir.

PROPERTY AND OWNERSHIP

The Jean property consists of the following claims owned jointly by David L. Cooke and Ragnar U. Bruaset:

Claim	Record No.	Units	Record Date
JW 91 - 1 to 4	301229 to 301232	4	June 25, 1991
JW 91 - 5, 6	301234, 301234	2	June 25, 1991
JW 91 - 8	301236	1	June 25, 1991
JW 91 -10	301238	1	June 25, 1991
WJ 91 - 1 to 4	301239 to 301242	4	June 25, 1991
WJ 91 - 6	301244	1	June 25, 1991
WJ 91 - 8	301246	1	June 25, 1991
WJ 91 -14	301248	1	June 25, 1991
JW 131 to 132 Frs.	245031 to 245032	2	June 26, 1970
JW 134 to 143	245033 to 245042	10	June 26, 1970
JW 221 to 222	145950 to 145951	2	Aug. 19, 1970
JW 100	303956	12	Sept. 1, 1991
	Total	41 Units	

The disposition of these claims are shown on Figures 2 & 3.

REGIONAL GEOLOGY

The Jean property occurs on the western margin of the Nation River area in the Omineca Mining Division of B.C. This area is part of the Quesnel Trough of Upper Triassic rocks, which extend northwesterly from the U.S. border through B.C. to the Yukon. The Mt. Milligan porphyry copper-gold deposit lies on the eastern margin of this belt.

The Upper Triassic rocks in the Nation River area belong to the Takla Group and consist mainly of andesitic and basaltic flows and pyroclastics. Minor amounts of black argillites have been noted locally. Older metamorphic rocks of the Slide Mountain and Cache Creek Groups occur to the east of the Takla rocks. The Takla volcanic rocks are intruded by alkaline and calc-alkaline plutons of Upper Triassic to Cretaceous ages.

The geology of the Nation River area is mainly obscured by glacial till. The Mt. Milligan porphyry copper-gold deposit, which is owned by Placer Dome Inc., contains about 329 million tons of probable ore with a grade of 0.22% copper and 0.013 ounce gold per ton. The mineralization consists of pyrite, chalcopyrite and free gold within Takla volcanic rocks and in coeval alkaline intrusions (monzonite, diorite etc.) of Triassic age. The sulphides occur as disseminations and stockworks in both intrusive and volcanic host rocks.

The intrusions are characterized by abundant disseminations of magnetite, which make them detectable by airborne and ground magnetic surveys. Sulphides are concentrated in the intrusive margins and adjacent volcanic rocks and may be traced under the glacial cover by induced polarization methods.

In addition to the disseminated and stockwork habit of sulphide mineralization, there are fault-controlled gold veins which occur peripheral to the porphyry mineralization. The veins contain quartz, carbonate, pyrite, chalcopyrite and gold which in some cases is of economic interest.

PROPERTY GEOLOGY AND MINERALIZATION

The Jean property covers the southwest portion of the Jean Marie stock and adjacent Takla volcanic rocks (Figure 4). The stock consists mainly of granodiorite and diorite. Locally both intrusive and volcanic rocks are intruded by monzonite dikes along the northwest trending contact between volcanic and intrusive rocks. The intruded Takla volcanic rocks consist of dark augite andesite flows, green lapilli tuffs, and minor agglomerates.

Adjacent to the intrusions, the volcanic rocks are altered to brownish hornfels. Locally the volcanic rocks have been dioritized or converted to a black biotite-rich rock or green epidote-garnet-calcite skarn. Hydrothermal activity is accompanied by quartz, pyrite, chalcopyrite and molybdenite mineralization. This mineralization occurs in quartz veinlets and disseminations within the intrusions, and as fracture-fillings within the volcaniic rocks along the northwest trending contact area.

The contact area between volcanic and intrusive rocks is marked by a major fault structure and moderate to abundant amounts of sulphides. Drilling has so far indicated three zones of copper and molybdenum mineralization within the contact area. Two of these zones occur on the Jean property. These zones straddle the northwest trending contact area and are separated by a single low grade drill hole. Further drilling will be required to determine if these zones are a part of a single mineralized body.

Rock chip sampling of a monzonite porphyry dike on the southwest flank of the A zone returned good copper values and associated gold values (Appendix III) Values ranged from 39 to 945 ppb gold. Assays of altered and sulphide-mineralized volcanic rock returned lower, yet weakly, anomalous gold values.

CONCLUSIONS

The Jean property contains porphyry copper and mplybdenum mineralization localized at the southwest contact of the Jean Marie stock and Takla volcanic rocks. Anomalous gold values occur within the mineralized zone, and gold is particularly evident in association with a monzonite porphyry intrusion at the southwest part of the mineralized area.

Further exploration work is warranted on the property.

Report by:

D. L. COOKE AND ASSOCIATES LTD.

David L. Cooke, Ph.D., P.Eng.

June 22, 1992.

APPENDIX I

STATEMENT OF 1991 EXPENDITURES

JW91, WJ91 AND JEAN 100 CLAIMS, OMINECA M.D.

GEOLOGY

D. L. Cooke, Geologist: July 29 - Aug.6,1991		
9 days @ $350/day	$3,150.00	
Drafting and Reproductions, & Field Supplies	624.81	$3,774.51

GEOCHEMISTRY

R. U. Bruaset, Geologist: July 29 - Aug.6/91		
9 days @ $350/day	$3,150.00	
Bark Samples - Acme Labs & Chemex Labs	905.97	
Biogeochemical Samples - Activation Labs ..	1,564.88	5,620.85

DRAFTING MAPS

6 Days @ $350/day	2,100.00

DOMICILE

Room and Board: 18 man days @ $50/day	$ 900.00	
Communications, etc.	122.15	1,022.15

TRANSPORTATION

Northern Mtn. Helicopters Ltd.: Mobilization and Demobilization & Radio Rental	$ 841.08	
Truck Rental: July 29 - Aug.6, 1991		
9 days @ $50/day	450.00	
Mileage: 2,250 km @ $0.20/km	450.00	
Gas & Oil, etc.	180.66	
Car Rental: July 29 - Aug.6/91, 9 Days @ $20	180.00	
Mileage: 2,050 @ $0.15 km ...	307.50	
Gas & Oil	139.15	
Freight: Sample shipment	28.11	2,576.50

REPORT

Data Interpretation and Report	$3,000.00	
Stenographic Service, etc.	250.00	3,250.00

TOTAL EXPENDITURES $18,344.01

Rock chip sampling of a monzonite porphyry dike on the southwest flank of the A zone returned good copper values and associated gold values (Appendix III) Values ranged from 39 to 945 ppb gold. Assays of altered and sulphide-mineralized volcanic rock returned lower, yet weakly, anomalous gold values.

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Further exploration work is warranted on the property.

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June 23, 1992.

APPENDIX III

DESCRIPTION OF ROCK SAMPLES

AND ANALYTICAL RESULTS

December 12, 1991

DESCRIPTION OF ROCK SAMPLES

JEAN PROPERTY N.T.S.93N/2W

NUMBER	DESCRIPTION
	APPLECOT TRENCH AREA
J91 - 1R	Applecot Zone: Angular float in creek - monzonite with chalcopyrite and quartz vein.
- 2R	Monzonite porphyry with disseminated chalcopyrite. - Trench.
- 3R	Fine-grained monzonite porphyry with pyrite and chalcopyrite. Trench.
- 4R	Massive biotite-rich volcanics above monzonite. Trace pyrite and chalcopyrite.
- 5R	Trench: Best high grade float of monzonite and chalcopyrite.
- 6R	Top of cliff: Barren biotite-rich volcanic rock.
- 7R	Medium-grained monzonite rubble with abundant malachite pyrite, chalcopyrite.
- 8R	Black biotite hornfels volcanic above J91 - 7R.
- 9R	Medium-grained monzonite with chalcopyrite on parallel fractures.
- 10R	Black biotite-rich volcanics.
- 11R	Fine-grained monzonite from west end of trench. Minor disseminated pyrite, chalcopyrite and malachite.
- 12R	Black biotite hornfels with disseminated pyrite and chalcopyrite.
- 13R	Grab of angular float - biotite hornfels with chalcopyrite.
- 14R	Coarse-grained quartz monzonite rubble with trace of disseminated sulphides.
- 15R	Medium-grained quartz monzonite rubble at west end of Applecot Trench.

NUMBER	DESCRIPTION
	ORANGECOT AREA
J91 - 16R	Medium-grained grey feldspar porphyry/diorite porphyry
- 17R	Coarse-grained rubbly hornblende-biotite granodiorite.
- 18R	Sheared granodiorite with 1 - 2% magnetite and trace chalcopyrite and molybdenite.
- 19R	Best chalcopyrite-molybdenite-quartz vein in aplite and granodiorite: ORANGECOT AREA.
- 20R	Sheeted quartz veins with chalcopyrite in granodiorite
- 21R	Rusty, black, pyritic cherty float in creek.
- 22R	Grey diorite at south side of creek.
- 23R	Massive dark andesite or basalt: APPLECOT AREA.
- 24R	Dark biotite and amphibole-rich volcanics: APPLECOT AREA.
- 26R	Pyritic andesite (?) with 5% disseminated pyrite. Chalcopyrite and pyrite on fractures (B zone).
- 28R	Augite andesite lapilli with quartz-pyrite fractures. + chalcopyrite (near PDH 74 - 4).
	BLUEBERRY TRENCH: Rock chip sample (29R - 35R = 7m each)
J91 - 29R	Dark andesite with pyrite and chalcopyrite on fractures.
- 30R	Dark andesite with pyrite and chalcopyrite on fractures. Abundant biotite and chlorite alterations.
- 31R	Siliceous volcanic rock with minor sulphides.
- 32R	Siliceous volcanic rock with minor sulphides. Abundant sulphides + chalcopyrite on fractures.
- 33R and 34R	Dark, biotite-rich volcanics with ± 7% pyrite and abundant chalcopyrite.
- 34R	Greyish green volcanics with less sulphides than sample 33R.

NUMBER	DESCRIPTION
J91 - 35R	Dark green volcanics: Heavy pyrite-chalcopyrite on fractures.
- 36R	Grab. Light green dioritized (?) volcanics with disseminated sulphides.
- 37R	Grab. Biotite and chlorite-rich volcanics. 3 - 4% pyrite ± chalcopyrite.
J91 - 56R	Dioritized volcanics. 2 - 5% pyrite, and trace chalcopyrite.
- 57R	Dioritized volcanics. 2 - 5% pyrite, and trace chalcopyrite. Lighter colour and siliceous.
- 58R	Grey andesite with weak hornfelsic cast.
- 59R	Strongly epidotized garnetiferous agglomerate. Green.

DRILL CORE SAMPLES

SAMPLE NO.	FROM	TO (Ft)	DESCRIPTION
DDH 75-1			
J91 - 38R	35	40	Dark andesite lapilli. 5% pyrite + chalcopyrite.
- 39R and 40R	105 115	110 120	Weak chalcopyrite in andesite lapilli.
- 41R	125	130	Moderate chalcopyrite in fractured volcanics.
- 42R	135	137.5	Strong chalcopyrite on fractures in volcanics.
- 43R	139	141	High grade copper zone.
- 44R and 45R	145 155	150 160	Strong chalcopyrite in fractures and quartz veins in volcanic host.
- 46R	185	190	Grey andesite. Moderate chalcopyrite.
- 47R	175	180	Dark andesite lapilli. Chalcopyrite on fractures. Biotite alteration is abundant.
- 48R	185	190	Grey andesite. Moderate chalcopyrite.

SAMPLE NO.	FROM	TO (Ft)	DESCRIPTION
DDH 75-1 Contd.			
J91 - 49R	195	200	Volcanic hornfels. Moderate pyrite and chalcopyrite.
- 50R	205	210	Dark biotite-rich hornfelsic volcanic rock. Trace chalcopyrite and about 2% pyrite.
- 51R	505	510	Medium-grained quartz monzonite. Clay altered. Quartz-pyrite-chalcopyrite veins.
DDH 75-4			
J91 - 52R	220	225	Slightly hornfelsic volcanic rock. Trace sulphides.
- 53R	345	350	Dark volcanic rock with biotite and amphibole. Minor disseminated pyrite and chalcopyrite.
- 54R	475	480	Hornblende biotite granodiorite dikelet with MoS_2 in dark volcanic country rock
- 55R	430	435	Chalcopyrite on narrow fractures in dark volcanic rock.
DDH 75-5			
J91 - 60R	60	65	Biotite hornblende granodiorite with
and 61R	70	75	quartz-chalcopyrite-MoS_2 veins.
J91 - 62R	195	200	Granodiorite with chalcopyrite-molybdenite veinlets. Note pinkish clay alteration.
DDH 75-3			
J91 - 63R	310	315	Carbonatized volcanics with + 5% pyrite.

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

R.U. Bruaset File # 91-3393 Page 1

5851 Halifax St., Burnaby BC V5B 2P4

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	Au** ppb
J91-1R	38	28644	7	82	3.8	19	5	105	4.38	2	5	ND	17	13	3.0	2	21	35	.33	.077	18	34	.55	76	.07	4	.61	.04	.19	1	51
J91-2R	6	7758	6	38	1.7	43	13	275	3.45	7	5	ND	7	44	.7	2	33	40	2.36	.090	39	49	1.20	42	.02	4	1.11	.03	.09	1	52
J91-3R	18	27581	7	100	5.2	34	11	208	4.59	6	5	ND	5	26	3.6	2	22	32	1.35	.092	43	41	.91	44	.01	7	.83	.02	.09	1	132
J91-4R	1	231	4	22	.3	34	12	250	2.75	3	5	ND	3	48	.2	2	2	63	1.13	.122	11	46	.98	208	.18	4	1.36	.10	.26	1	5
J91-5R	38	43219	5	100	49.8	57	26	127	9.05	7	5	ND	1	14	3.7	8	59	55	.18	.056	11	82	.96	27	.04	5	.81	.01	.36	1	945
J91-6R	1	162	6	16	.3	85	14	194	2.62	5	5	ND	1	137	.2	2	3	75	1.31	.099	7	154	1.53	603	.32	5	2.54	.25	1.11	1	17
J91-7R	25	24982	2	80	3.8	71	17	367	4.33	4	5	ND	2	25	2.3	2	26	89	.87	.078	15	132	2.40	109	.11	4	1.77	.04	.30	1	363
J91-8R	1	233	6	18	.2	115	16	224	3.29	2	5	ND	1	181	.2	2	2	84	1.43	.071	5	220	2.15	601	.34	5	3.56	.41	1.71	1	9
J91-9R	21	49738	5	144	7.6	48	10	269	6.20	6	5	ND	2	17	4.6	2	27	50	1.58	.048	16	72	1.04	67	.03	4	.87	.03	.11	1	212
J91-10R	1	800	2	19	.3	66	16	216	3.24	2	5	ND	2	58	.2	2	4	104	.65	.083	7	157	1.92	710	.37	4	2.16	.13	1.57	1	23
J91-11R	19	14511	4	57	1.9	39	10	165	3.03	6	5	ND	17	13	1.5	2	30	37	.32	.088	35	44	.96	102	.04	3	1.01	.04	.10	1	45
J91-12R	10	6557	2	25	1.5	26	8	170	1.97	2	5	ND	3	76	.6	2	19	38	.89	.107	16	37	.67	73	.10	6	1.23	.15	.11	1	24
J91-13R	4	1343	2	17	.6	43	9	177	2.17	5	5	ND	5	100	.2	2	6	53	1.12	.111	12	73	.95	180	.16	4	1.77	.21	.53	1	8
J91-14R	7	1544	9	17	.4	13	5	99	1.60	2	5	ND	36	20	.2	2	8	40	.54	.092	20	16	.26	50	.11	5	.40	.06	.08	1	39
J91-16R	2	133	6	55	.2	12	5	322	1.90	2	5	ND	13	33	.2	2	2	34	.48	.069	36	16	.68	117	.18	5	.77	.06	.10	1	2
J91-17R	2	48	7	38	.2	20	9	396	2.30	2	5	ND	21	65	.2	2	2	58	.99	.120	49	26	1.12	401	.14	4	.88	.05	.31	1	6
J91-18R	2	951	5	27	.4	20	9	341	2.12	2	5	ND	19	83	.2	2	6	52	1.48	.097	52	24	1.30	262	.09	3	1.08	.04	.23	1	3
J91-19R	204	11569	14	34	13.5	14	7	293	2.14	2	5	ND	26	65	1.2	2	75	33	1.87	.060	31	19	.72	140	.06	4	.66	.03	.12	1	114
J91-20R	30	5694	5	34	1.8	21	8	257	2.41	2	5	ND	23	37	.6	2	21	54	1.02	.099	43	29	.94	139	.12	4	.92	.04	.12	1	29
J91-21R	3	43	3	28	.1	11	3	139	1.36	3	5	ND	1	51	.2	2	2	12	.71	.008	5	21	.17	98	.01	6	.40	.01	.14	1	10
J91-22R	1	59	4	35	.2	15	9	374	2.30	2	5	ND	31	66	.2	2	2	67	1.14	.207	88	24	1.50	120	.18	4	1.14	.06	.12	1	112
J91-26R	1	1878	3	26	1.4	36	15	223	4.14	2	5	ND	1	68	.2	2	10	119	1.76	.174	16	40	1.49	194	.32	7	2.90	.27	1.04	1	12
J91-28R	1	319	2	24	.5	83	19	303	3.43	5	5	ND	1	63	.2	2	7	72	1.48	.141	10	124	1.60	387	.23	7	2.30	.26	1.04	1	6
J91-29R	3	1851	2	27	1.5	64	15	204	2.42	3	5	ND	1	66	.2	2	9	62	1.29	.113	12	74	.75	58	.25	5	1.74	.24	.14	1	41
J91-30R	6	3923	2	38	3.4	69	16	246	3.59	3	5	ND	1	43	.3	2	12	85	1.13	.118	14	141	1.19	122	.30	3	1.88	.14	.35	1	20
J91-31R	4	729	2	26	.8	20	9	270	2.87	8	5	ND	4	18	.2	2	4	39	.66	.123	19	22	1.17	122	.23	3	1.52	.08	.29	1	42
J91-32R	7	2249	2	33	2.7	25	9	200	3.59	7	5	ND	3	35	.4	2	12	47	.92	.119	17	27	1.01	65	.21	4	1.81	.13	.19	4	22
RE J91-28R	1	311	2	22	.6	78	18	274	3.08	3	5	ND	1	58	.2	2	7	65	1.34	.126	10	113	1.45	349	.22	8	2.08	.24	.95	1	6
J91-33R	2	1851	2	29	1.3	37	19	236	3.67	2	5	ND	1	116	.2	2	9	98	1.96	.044	2	38	1.31	106	.25	8	3.62	.42	.38	1	44
J91-34R	4	1969	2	24	.8	29	13	210	2.48	3	5	ND	1	145	.2	2	9	74	2.45	.043	3	31	.87	63	.21	10	3.77	.51	.18	1	24
J91-35R	6	2232	2	53	1.0	62	22	314	6.80	3	5	ND	1	40	.2	2	8	124	.92	.039	5	207	1.94	198	.49	5	3.16	.19	1.49	1	15
J91-38R	1	3685	4	37	2.0	65	28	259	3.99	5	5	ND	1	205	.3	2	13	77	3.07	.130	8	31	.75	38	.21	4	3.92	.65	.11	1	22
J91-39R	14	7841	3	48	3.7	45	35	349	4.25	10	5	ND	1	156	.6	2	19	86	3.47	.113	7	17	.91	45	.21	7	3.28	.54	.12	1	44
J91-40R	8	1106	7	29	1.1	33	17	346	3.64	2	5	ND	3	92	1.4	2	10	109	1.74	.119	11	23	1.25	81	.27	8	2.50	.31	.20	1	16
J91-41R	7	1654	2	20	.9	30	11	178	1.99	2	5	ND	1	60	.2	2	9	63	1.33	.085	6	28	.84	30	.19	5	1.58	.17	.10	1	16
J91-42R	2	12000	3	50	4.8	36	14	158	2.91	2	5	ND	1	78	1.2	2	14	96	1.85	.096	6	41	1.25	38	.21	7	2.13	.23	.21	1	90
J91-43R	15	23674	8	78	12.9	55	16	179	4.99	2	5	ND	1	93	2.5	2	60	118	1.72	.088	6	88	1.64	70	.24	5	2.65	.31	.37	1	101
STANDARD C/AU-R	19	59	37	133	7.3	70	32	1047	3.98	43	20	8	38	52	18.8	16	18	59	.49	.090	40	59	.88	177	.09	34	1.90	.07	.15	11	462

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.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: ROCK/CORE AU** ANALYSIS BY FA/ICP FROM 30 GM SAMPLE. Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: AUG 12 1991 DATE REPORT MAILED: Aug 17/91. SIGNED BY..... D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

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	Au** ppb
J91-44R	3	3498	2	36	2.3	70	13	228	3.62	2	5	ND	1	92	.2	2	2	115	1.78	.086	6	161	2.46	376	.31	3	3.47	.26	1.79	2	34
J91-45R	5	5537	9	35	3.6	66	22	136	3.04	3	5	ND	1	73	.6	2	7	75	1.65	.087	6	84	1.62	163	.20	3	2.44	.24	.46	11	77
J91-46R	21	3014	3	42	2.6	80	16	230	4.10	2	5	2	1	77	.2	2	2	132	1.34	.091	8	100	2.65	211	.33	3	3.30	.26	1.92	2	136
J91-47R	6	2008	2	31	.8	110	18	295	3.87	2	5	ND	1	50	.3	2	2	114	1.55	.072	2	247	2.73	514	.34	2	3.10	.16	2.25	7	23
RE J91-52R	6	271	6	26	.6	30	13	239	2.78	2	5	ND	1	42	.2	2	2	77	.96	.061	4	51	.95	133	.21	4	1.13	.07	.19	1	7
J91-48R	10	1486	2	32	1.2	107	24	263	4.26	2	5	ND	1	60	.2	2	2	130	1.21	.076	5	253	2.72	394	.37	2	3.25	.17	2.15	4	10
J91-49R	35	2651	22	45	2.2	65	19	364	3.48	5	5	ND	1	60	.4	2	2	115	2.63	.083	6	78	2.01	199	.26	5	2.31	.13	1.06	1	13
J91-50R	1	115	3	18	.5	80	20	233	3.33	2	5	ND	2	33	.2	2	2	106	.86	.118	8	72	1.60	294	.28	5	1.72	.12	1.08	1	2
J91-51R	38	1521	10	17	.1	17	6	238	1.68	6	9	ND	13	127	.2	2	4	28	2.36	.079	45	13	.87	201	.03	5	.76	.05	.24	5	18
J91-52R	6	273	3	26	.3	28	12	229	2.64	2	5	ND	1	42	.3	2	2	73	.95	.059	4	47	.92	128	.21	3	1.07	.07	.16	1	5
J91-53R	10	103	2	23	.3	92	16	233	2.72	2	5	ND	1	193	.3	2	2	81	1.90	.095	4	136	1.95	570	.31	4	3.72	.42	1.10	1	4
J91-54R	1	713	3	20	.3	65	14	204	2.50	3	5	ND	2	35	.2	2	2	59	.79	.116	9	67	1.24	203	.16	2	1.13	.08	.35	1	4
J91-55R	19	1071	3	35	.3	49	15	367	3.47	2	5	ND	1	108	.2	2	2	73	1.54	.089	6	76	1.70	363	.15	3	2.45	.20	.64	2	4
J91-56R	3	712	6	13	.1	63	12	112	2.53	8	5	ND	1	43	.2	2	2	57	1.03	.103	8	97	.94	95	.21	2	1.82	.20	.47	1	7
J91-57R	1	63	4	32	.3	60	14	250	2.85	6	5	ND	3	64	.3	2	2	85	1.01	.091	13	109	1.51	449	.26	3	2.40	.26	.93	2	7
J91-58R	1	42	2	41	.2	79	21	332	3.86	59	5	ND	1	68	.3	2	2	119	1.44	.056	2	116	1.37	167	.34	4	2.90	.45	1.14	1	14
J91-59R	1	16	14	50	.4	59	10	942	2.64	20	5	ND	1	121	.4	2	23	67	4.65	.088	2	46	1.19	50	.21	4	1.83	.17	.13	2	1
J91-60R	10	2489	5	21	1.6	15	7	225	1.76	5	5	ND	11	320	.2	2	6	26	3.73	.056	28	7	1.21	380	.01	7	.46	.02	.16	3	11
J91-61R	35	3869	7	23	1.3	15	6	211	1.80	2	5	ND	13	231	.2	2	2	31	2.57	.056	31	8	1.13	202	.01	4	.44	.03	.16	4	16
J91-62R	28	5417	11	51	2.6	15	8	272	1.84	181	6	ND	12	209	.4	2	21	28	3.63	.065	36	10	1.14	162	.01	6	.41	.03	.10	3	24
J91-63R	1	35	2	34	.3	24	101	263	9.77	2	5	ND	1	86	.2	3	17	72	1.12	.040	6	16	1.07	8	.01	8	.38	.06	.13	1	12
STANDARD C/AU-R	20	65	40	136	7.5	72	31	1067	4.07	42	21	8	39	53	17.3	17	22	61	.56	.090	40	58	.92	180	.09	33	1.97	.08	.16	11	464

Samples beginning 'RE' are duplicate samples.

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: BRUASET, R. U.

5851 HALIFAX ST.
BURNABY, BC
V5B 2P4

A9119874

Comments:

CERTIFICATE A9119874

BRUASET, R. U.

Project:
P.O. # :

Samples submitted to our lab in Vancouver, BC.
This report was printed on 22-AUG-91.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
208	2	Assay ring to approx 150 mesh
294	2	Crush and split (0-10 pounds)
200	2	Whole rock fusion

* NOTE 1:

Code 1000 is used for repeat gold analyses
It shows typical sample variability due to coarse gold effects. Each value is correct for its particular subsample.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
594	2	Al2O3 %: Whole rock	ICP-AES	0.01	99.99
542	2	BaO %: Whole rock	ICP-AES	0.01	99.99
588	2	CaO %: Whole rock	ICP-AES	0.01	99.99
586	2	Fe2O3(total) %: Whole rock	ICP-AES	0.01	99.99
821	2	K2O %: Whole rock	ICP-AES	0.01	99.99
593	2	MgO %: Whole rock	ICP-AES	0.01	99.99
596	2	MnO %: Whole rock	ICP-AES	0.01	99.99
599	2	Na2O %: Whole rock	ICP-AES	0.01	99.99
597	2	P2O5 %: Whole rock	ICP-AES	0.01	99.99
592	2	SiO2 %: Whole rock	ICP-AES	0.01	99.99
595	2	TiO2 %: Whole rock	ICP-AES	0.01	99.99
475	2	L.O.I. %: Loss on ignition	FURNACE	0.01	99.99
540	2	Total %	CALCULATION	0.01	N/A

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

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British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: BRUASET, R. U.

5851 HALIFAX ST.
BURNABY, BC
V5B 2P4

Project :
Comments:

Page Number :1
Total Pages :1
Certificate Date: 22-AUG-91
Invoice No. :I9119874
P.O. Number :

CERTIFICATE OF ANALYSIS A9119874

SAMPLE DESCRIPTION	PREP CODE		Al203 %	BaO %	CaO %	Fe203 %	K20 %	MgO %	MnO %	Na20 %	P205 %	Si02 %	Ti02 %	LOI %	TOTAL %	
J91-23R	208	294	17.56	0.12	7.84	7.96	1.15	4.75	0.15	5.03	0.35	54.00	0.65	1.20	100.75	
J91-24R	208	294	16.31	0.13	8.70	7.89	1.49	7.68	0.13	2.76	0.25	52.47	0.75	1.66	100.20	

CERTIFICATION: B. Caughlin

BIOGEOCHEMISTRY

PART 2

OF

1991 ASSESSMENT REPORT

ON

GEOLOGY AND ROCK GEOCHEMISTRY OF THE JW AND WJ CLAIMS

CHUCHI-TCHENTLO LAKES AREA

OMINECA M. D.

LATITUDE:55 deg. 05 minutes N.

LONGITUDE: 124 deg. 56 minutes W.

N. T. S. 93N/2W

BIOGEOCHEMICAL REPORT BY:

RAGNAR U. BRUASET, B.Sc., F. G. A. C.

RAGNAR U. BRUASET & ASSOCIATES LTD.

REPORT: JUNE 23, 1992 WORK DONE: JULY 29, 1991-JUNE 23, 1992

CLAIMS ON WHICH FIELD WORK WAS DONE:

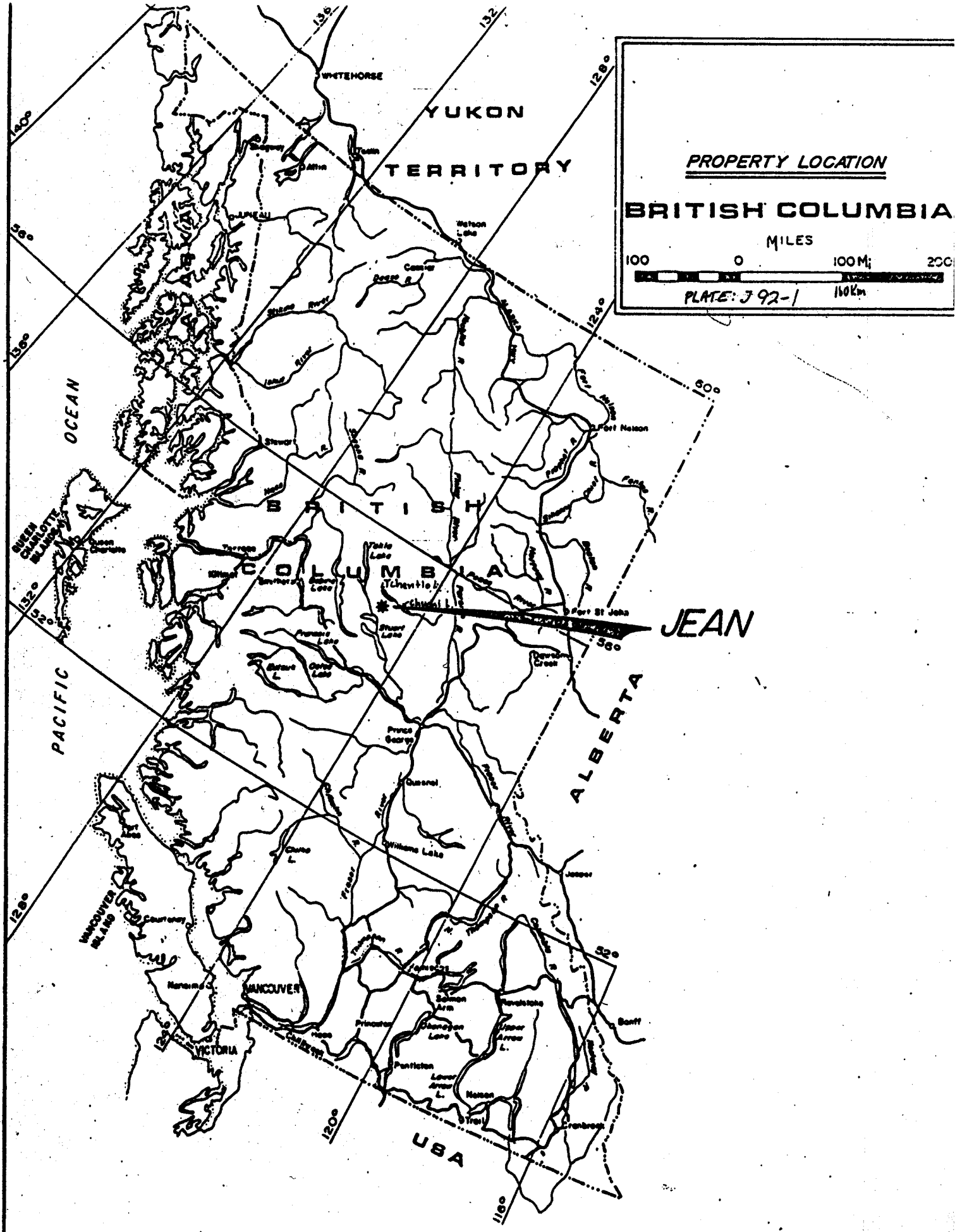
Claim	Units	Record No.	Record Date
JW 91-1 to 6	6	301229 to 301234	June 25
WJ 91-1 to 4	4	301239 to 301242	June 25
WJ 91-6	1	301244	June 25
JW 135	1	245035	June 26
JW 137	1	245036	June 26
JW 221	1	245950	Aug. 19

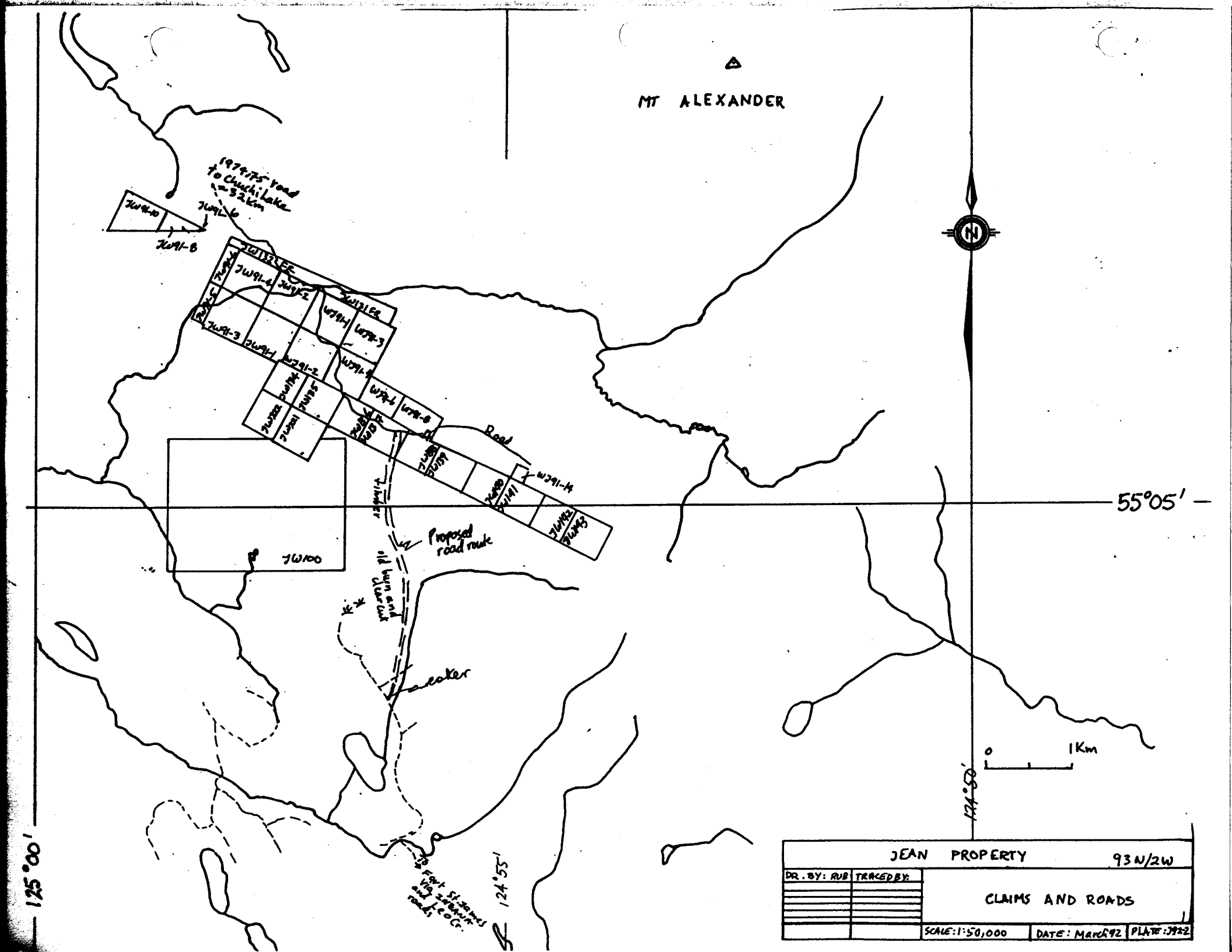
TABLE OF CONTENTS

APPENDIX

OUTER BARK ANALYSIS: ACTIVATION LAB. REPORTS # 3802, 3802B

ANALYTICAL PROCEDURES FOR OUTER BARK


PROPERTY LOCATION
BRITISH COLUMBIA
MILES
100 0 100 Mi 200
PLATE: J 92-1
160 Km
YUKON TERRITORY
BRITISH COLUMBIA
ALBERTA
PACIFIC OCEAN
USA
JEAN
WHITEHORSE
VANCOUVER
VICTORIA
Fort Nelson
Fort St John
Dawson Creek
Prince George
Quesnel
Williams Lake
Kamloops
Penticton
Nelson
Trail
Cranbrook
Banff
Jasper
Fort Simpson
Watson Lake
Courtenay
Nanaimo
Queen Charlotte Islands
Vancouver Island
136°
132°
128°
140°
124°
60°
56°
52°
120°
116°



JEAN PROPERTY		93N/2W
DR. BY: RUB	TRACED BY:	CLAIMS AND ROADS
		SCALE: 1:50,000 · DATE: March 92 · PLATE: J922

1. INTRODUCTION

Part 2 of this assessment report deals with biogeochemical reconnaissance. The Jean Property is situated in the Omineca Mining Division, near Chuchi Lake. Chuchi Lake (Plate 1) is located 190 kms northwesterly from Prince George.

The subject JW-91-, WJ-91- and JW series claims are underlain by Upper Triassic alkaline to subalkaline augite porphyry volcanics. The U. Triassic rocks are intruded by a zoned intrusion of Upper Jurassic or Lower Cretaceous age. The Jean Marie stock as it is known in the literature (Garnet, 1978), or simply Jean Stock , is approximately 11 km long by at least 3 km wide. Its major axis trends 305 deg. The most basic phases are diorite and quartz diorite. The central phase of the intrusion is granodiorite.

The principal known mineralization on the Jean Property is a tabular zone bracketed by the following percussion holes JPH 74-1, 3, 6, 9-13, 22, 24, 24, 28, 33, and 39. (Plate 6 and Assessment Report 5343). The mineralized zone is generally capped by about 15 m of pyritic volcanics which in turn are covered by boulder till to a depth of about 15 m. This mineralized zone contains Cu and Mo as the principal valuable constituents with the principal hosts greenstone and granodiorite. Locally monzonite dykes and, or, sills contain copper-gold mineralization. We consider an improved understanding of the monzonite a key element in the more near-term economic future of the property.

The objective of the biogeochemical survey was to elucidate any near-surface gold potential. Given the imposing conditions of cover, including hangingwall, the objective might be regarded as unrealistic in some quarters but in the operators' opinion worth trying on limited scale. The bark samples were collected along claim and survey lines. Any outcrop encountered would be mapped. Samples were variously collected by the authors.

The Jean Property lies within 1 km of existing logging roads to the south and these roads provide potential access to B. C. Rail and the nearby village of Fort St. James. The poor access in the early to mid-1970's was a major hindrance to ongoing exploration on the property. The original access for heavy equipment was by a 32 km Cat. road from the west end of Chuchi Lake, a point reached by an 18 hour-raft voyage.

The local physiographic division is known as the Nechako Lowland (GSC Map 1701A). The property is located near the west end of a broad forested valley drained westerly by Jean Creek (unofficial name), a tributary to Airline Creek. To date, no logging has taken place in the valley of Jean Cr. The vegetation is generally mixed White spruce and Lodgepole pine with spruce dominating in the relatively wet portions of the property. Lodgepole pine is here the species of choice for biogeochemical sampling directed at gold with outer bark the sampling medium.

The Jean Property consists of a total of 41 units. The claims are registered variously in the names of the authors or in private companies controlled by them.

The deposit types sought on this property are alkaline and calc-alkaline affiliated copper-gold deposits.

The owners' decision to locate claims in the Jean Creek area was based on the postulated abandonment on June 24, 1991 of certain key claims explored by the NBC Syndicate. A small staking rush commenced on June 25, 1991 as agents for the authors, and two groups of former owners scrambled for ground positions in the area of the Jean copper-molybdenum deposits (Deposit # 607 on GSC Map 1513A). The NBC Syndicate consisting of Cominco, Granby, Chevron, Duval and Conwest had held the ground in excess of 20 years. The Syndicate members, for reason of minority positions, saw little future in maintaining the ground although considerable exploration potential remained to the good of any new owner. A second operator attempted to restake the ground (JEAN claims) through blanket staking in early July 1991.

The reconnaissance bark sampling herein described sought to indicate "hot spots" for gold which could be associated with the margins of the known deposits and expected to be detectable if conditions of overburden and, or, cover-rocks were not too severe. However, little gold enhancement in the vegetation of the area sampled is indicated. Highly anomalous mercury occurs in most of the vegetation samples. The levels of mercury indicated may have structural implications.

The public exploration records of the property area include Assessment Reports No. 2241 (soil geochemistry),3899, 4774, 5590, 6332 and 6948 (IP), 5343 (percussion drilling), and 5633, 5737 (diamond drilling).

The biogeochemical work herein reported includes 65 samples which have been analyzed for 35 elements using Instrumental Neutron Activation analysis. The principal elements of interest in this survey are gold and mercury. The data appears on Plate 6.

2. SUMMARY

1. Gold occurs at slightly elevated levels in most of the samples but no single sample is regarded as anomalous.

2. Mercury occurs at anomalous levels in almost all samples. Generally samples are 2 to 5 times the normal background for mercury.

3. DEFINITION OF ANOMALOUS LEVELS

This section summarizes the thresholds utilized in this report. Reference is made to Tables 1 and 2. The following are notes on Au, Mo and Hg. No Cu analysis of these samples has been done to date.

SUMMARY OF BARK RESULTS FROM JEAN PROPERTY BASED ON SAMPLING IN 1991
A L L D A T A E X P R E S S E D A S D R Y W E I G H T S

ELEMENT AND DETECT. LIMIT	COMMON CONC. IN OUTER BARK FROM C. DUNN, 1991 (ref. current Table 2)		JEAN, JW, JW-91-, WJ-91- CLAIMS Data from Cerificates 3802,02B		
			D L ** E I T M C I T.T ppm	S P E C I E S	
(values are dry weight equivalents i.e. Dunn's values divided by 50 ppm, except where otherwise indicated	SPRUCE (n=hundreds)	LODGE-POLE PINE (n=hundreds)		SPRUCE (n=10)	LODGE-POLE PINE (n=55)
Ag .1	<0.1	<0.1	.3	<.3	<.3
As .01	.1-.3	.2-.4	.01	.02-.07	.03-.14
Au .1	.1-.3	.2-.4	.05	.07-.17	<.05-0.27
Ba 3	60-100	10-20	5	80-240	8-200
Br .01	.6-1.2	.2-1.0	.01	1.5-5.4	2.1-6.7
Ca% .01	.5-.7	.3-.6	.01%	.91-1.70	.33-1.39
Co .02	.1-.2	.1-.2	.1	<.1-.2	<.1-0.4
Cr .04	.2-.4	.2-.6	.3	<.3	<.3-1.3
Cs .01	.02-.06	.04-.08	.05	<.05-.18	<.05-.41
Fe% .0004	.0004-.0008	.0008-.03	.005	<.005-.005	<.005-.020
Hf .02	<.02	.02-.04	.05	<.05	<.05
Mo .05	<.05	<.05	.05	<.05-.14	<.05-.10
Na 2	highly variable		.5	12.3-43.0	14.6-99.7

Ni	4	<4	<4	5	<5	<5
Rb	.4	1-2	1-3	1	<1-6	<1-4
Sb	.004	.01-.03	.02-.08	.005	.006-.22	.007-.31
Sc	.002	.02-.06	.04-.08	.01	<.01-.02	.01-.07
Se	.06	<.06	<.06	.1	<.1	<.1-.2
Sr	10	10-30	<10-20	10	24-54	<10-43
Ta	.02	<.02	<.02	.05	<.05	<.05
Th	.01	.02-.04	.02-.06	.1	<.1	<.1
U	.01	.01-.02	.01-.04	.01	<.01	<.01
W	.02	<.02	<.02	.05	<.05-.05	<.05-.11
Zn	.4	20-40	20-40	2.0	54-98	24-89
La	.01	.08-.16	.08-.24	.01	.02-.05	.03-.19
Ce	.06	.12-.24	.2-.4	.1	<.1	<.1-.3
Nd	.1	<.1	.1-.2	.3	<.3	<.3
Sm	.002	.01-.03	.02-.04	.001	.002-.008	.004-0.022
Eu	.01	<.01	.01-.02	.05	<.05	<.05
Yb	.004	.004-.012	.006-.02	.005	<.005	<.005-.13
Lu	.001	.001-.002	.001-.003	.001	<.001	<.001-.002

No data in Dunn's table ; reference data from Dunn pers. comm.:

Hg	.05	<.05	<.05	.05	.05-.19	<.05-.27

Mics. data available in ACT. LAB. Cert. # 3802, 3802B. No Dunn reference known:

Ir				.1	<.1	<.1
Tb				.1	<.1	<.1
K				.001	.083-.219	.048-.163

**Gen. specs: INAA PACKAGE, ELEMENTS AND DETECTION LIMITS RPT.3802

NOTES RE. DETECTION LIMIT DIFFERENCES BETWEEN DATA FROM DUNN, 1991, AND RPT. 3802, 02B. For some of the elements, such as Co, Cr, Fe, Sc and Zn the difference in detection limit between the two sets of data is a reflection of the overall background in the counting laboratory. This background is created in part by the permanent sample storage (in concrete) which is located in the order of 70 feet from the counting facility. This illustrated the extreme sensitivity of the analytic method. In other instances, such as for silver, the detection limit given (0.1) is somewhat tenuous, or difficult to reproduce. It is stated that the lab. is more comfortable with 0.3.(Dr. E. Hoffman, Activation Laboratories Ltd. pers. comm.).

The data from Dr. Dunn appears in his publications as far back as 1985 and his detection limits were obtained at Nuclear Activation Services Ltd.

The detection limits given by Activation Laboratories Ltd. are those THEY are comfortable with presently. Obviously it is highly desirable to have meaningful AND low detection limits with values that are to be assigned to "anomalous" being at least several times higher than the detection limit. To illustrate, in the case of gold in Lodgepole pine outer bark, we are finding that values at least as low as 0.4 ppb can be clearly related to significant gold mineralization as determined by rock sampling of nearby mineralized outcrop. Such values are 8 X the detection limit of 0.05 ppb. There is also evidence that even lower values reflect significant mineralization in the case of gold.

TABLE 2
(from Dunn, 1991)

Element	Detection Limits	Common Concentrations in Ash		
		Alder Twig	Outer Bark Scales	
			Spruce	Jack Pine
Ag	5 ppm		<5	
As	0.5 ppm	<.5 - 1	2 - 4	4 - 8
Au	5 ppb	10 - 20	5 - 15	10 - 20
Ba	150 ppm	1000 - 3000	3000 - 5000	500 - 1000
Br²	0.5 ppm	20 - 40	30 - 60	10 - 50
Ca	0.5%	15 - 25	25 - 35	15 - 30
Co	1 ppm	5 - 20	5 - 10	5 - 10
Cr	2 ppm	<2 - 5	10 - 20	10 - 30
Cs	0.5 ppm	1 - 3	1 - 3	2 - 4
Fe	0.02%	0.1 - 0.2	0.2 - 1.5	0.5 - 2
Hf	1 ppm	<1	<1	1 - 2
Mo	1 ppm	1 - 5	<2	<2
Na	100 ppm		Highly variable	
Ni	200 ppm		<200	
Rb	20 ppm	100 - 500	50 - 100	50 - 150
Sb	0.2 ppm	<2	.5 - 1.5	1 - 4
Sc	0.1 ppm	0.1 - 0.3	1 - 3	2 - 4
Se	3 ppm		<3	
Sr	500 ppm	500 - 2000	500 - 1500	<500 - 1000
Ta	1 ppm		<1	
Th	0.5 ppm	<.5	1 - 2	1 - 3
U	0.5 ppm	<.5	0.5 - 1	0.5 - 2
W	1 ppm		<1	
Zn	20 ppm	500 - 1500	1000 - 2000	1000 - 2000
La	0.5 ppm	1 - 3	4 - 8	4 - 12
Ce	3 ppm	<3	6 - 12	10 - 20
Nd	5 ppm	<5	<5	5 - 10
Sm	0.1 ppm	0.1	0.5 - 1.5	1 - 2
Eu	0.5 ppm	<0.5	<0.5	0.5 - 1
Yb	0.2 ppm	<0.2	0.2 - 0.6	0.3 - 1
Lu	0.05 ppm	<0.05	0.05 - 0.1	0.05 - 0.15
Ash	%	1.5 - 2.5	2 - 3	1 - 2

Table 8: ***Typical element concentrations in ashed vegetation from the Precambrian Shield. Detection limits are those that were commercially available by INAA in the mid-1980s; limits have been appreciably lowered for Ag, Ba, Ca, Na, Ni, Rb, Sr, Th, U, and most of the rare earths. Other elements now available with this analytical package include Ir (2ppb) and Hg (1 ppm), and K (0.05%).***

NOTES ON GOLD:

Thresholds were determined with the aid of Table 2 which provides background data for 31 elements in outer bark of spruce, Lodgepole pine and alder twigs expressed as ash weight. Ash weight values can be converted to "dry weight equivalent values" by dividing ash weight values by 50 for Lodgepole pine and spruce. Dunn (pers. comm.) has indicated that values above those given in Table 2 can be regarded as anomalous. One can apply the multiplication factor of 50 to convert our dry weight data to ash weight equivalents because bark of spruce and Lodgepole pine have ash yields of approximately 2 %. i. e. elements present in the original bark, would be concentrated in the ash by a factor of about 50, if they are not volatilized during ashing. Since ashing is done at low temperatures, gold is not considered to be extensively volatilized. (Dunn, pers. comm.).

NOTES ON MOLYBDENUM IN OUTER BARK:

According to Dunn, Lodgepole pine does not accumulate Mo in its outer bark, instead Mo migrates to needles and new twigs. It is noted that Mo in Lodgepole pines here rarely exceed the detection limit. It is noted, however, that at the QR deposit, Lodgepole pine outer bark contains up to 0.2 ppm Mo i.e. 4 X the detection limit expressed as dry weigh equivalents. In the Mt. Milligan area, the regional background for Mo is rather close to the detection limit with values 0.06 to 0.08 ppm Mo expressed as dry weight equivalents (Dunn, pers. comm.). In 1991 Bruaset obtained values such as <0.05 to 0.07 over a distance of 1.5 km northwest of the Mt. Milligan deposit and generally similar values over the deposits themselves and for about 1.3 km to the west of the deposits. Westerly of the deposits, however, he obtained a scattering of values such as 0.11, 0.14 and 0.22 ppm Mo. The gold-copper mineralization in the Mt. Milligan deposits reportedly contains a few tens ppm Mo and as such is anomalous in Mo.

NOTES ON MERCURY IN OUTER BARK: Little data is available on the abundance of mercury in plant organs because samples are usually prepared by ashing which tends to volatilize mercury. However, dry weight data is available in Warren, et al. 1983 and 1984. Dunn (pers. comm.) indicates plant ash usually contains 0.01 ppm. His mercury values based on analysis of dry tissue, i.e. non-ashed tissue, are commonly in the range 0.01 to 0.05 ppm. Mercury is highly toxic to vegetation and because of that, mercury uptake may be low. Another possibility is that, being toxic, mercury may be directed to the extremities of the tree, such as bark and needles. Warren, et al, 1983, obtained 0.01-0.10 ppm dry weight Hg for normal range Hg in Lodgepole pine (needles and stems). The corresponding anomalous range was 0.4 to 1.2 ppm. Warren, et al. 1983, report that

"the mercury content of individual species were remarkably similar in the 'normal' and 'anomalous' concentration ranges between the individual species indicating that local vegetation can be used for biogeochemical prospecting for this element without regard to the selection of individual species for analysis". The mercury content of the current data ranges from <0.05 to 0.27 ppm with only ten values less than 0.11 ppm. Plate 6 shows the mercury data. There is no recognizable pattern except that in the south-west survey area there is a tendency for lower values to concentrate. Warren, et al. 1984 describe a biogeochemical survey conducted along the extent of the Pinchi Fault from north-central B. C. as far south as the latitude of the Lornex Mines in the Highland Valley. Dr. Warren's study is widely regarded as having aided in locating the Pinchi Fault system through the extensively drift covered and Tertiary volcanics capped central and southern B. C. Twigs and needles of Douglas fir, White spruce and Lodgepole pine were used. Commonly encountered values were 0.15 to 0.30 ppm and 0.5 ppm was considered anomalous along the Pinchi Fault.

4. GENERAL DATA ON BIOGEOCHEMICAL SURVEYING WITH OUTER BARK.

An outer bark orientation survey for gold was carried out by the author in the vicinity of known Cu-Mo deposits on the Jean Property.

The author has utilized bark sampling routinely for three years and has found it to be a cost effective method of identifying "hotspots for gold". Thresholds for gold and other elements for which outer bark samples are routinely analyzed are obtained from several sources, including the readily available publications of Colin Dunn. Dr. Dunn has carried out numerous surveys in B.C., Saskatchewan and eastern Nova Scotia. Biogeochemical reports by Dunn are available from miscellaneous sources. Several of these are listed in the REFERENCE of this report.

Dunn, (March, 1991) describes trees and shrubs as the above surface extension of the geological substrata with the chemical elements present in plant organs drawn from soils, sediments, rocks and groundwaters. Gold is highly mobile in plants, and most plants have the capacity to extract gold from rocks, soils, tills and ground waters accessible by roots (Dunn, 1986 b). It is noted that roots are exceedingly corrosive, locally producing microenvironments less than pH 1. Individual plants may have tens of kms of roots and rootlets. These have millions of apertures through which essential and non-essential elements enter the tree. Trees and other plants selectively extract from soils, groundwater and bedrock those elements essential for growth. They also absorb nonessential elements and deposit them, as much as possible in parts of the tree, such as outer bark, twigs, and tree tops, where they will not

interfere with the metabolic processes (Dunn, 1988, b). This partitioning of essential and nonessential elements is likened to the human body which tends to push toxic elements such as lead and arsenic to the hair and fingernails (Dunn. 1986 b). Accordingly, a mature plant is a powerful geochemical sampling system capable of integrating the geochemical signature of several cubic meters of substratae (Dunn, 1986 b). The amount of gold that can accumulate in plants vary with species, plant organs and the seasons. The current survey utilized conifer bark scales as sampling medium. This is dead tissue and as such does not vary significantly with the seasons (Dunn, March, 1991). The elements that tend to be enriched in the outer bark of red spruce of eastern Nova Scotia are Au, As, Br, Cr, Fe, Hf, Na, Sb, Sc, Se, Th, U and REE and possibly Mo, Ta, Cs and those enriched in inner bark include Ag, Ba, Ca, Co, K, Rb and possibly Zn (Dunn, 1988 b). It is expected that these patterns of relative enrichment generally apply to other common conifers as well.

Gold occurring in ash of plants grown in aqueous solutions, to which soluble forms of gold had been added, was noted as early as the 1930's (Kovalevskii, 1981). Kovalevskii determined that native gold occurs in plant ash using the method of direct scintillation emission spectroscopy (SES) without preliminary chemical treatment of samples. This method is capable of identifying individual gold particles weighing more than 1 to 5 micro grams and with approximate isometric dimensions of more than 4 to 7 micro meter. There are limitations on this method of gold detection in plants if the gold is in colloidal form.

Gold studies utilizing outer bark have been carried out in many areas. Some of those from which the author has seen data includes the QR deposit, a survey by Dr. Dunn presented at the 1991 Vancouver Roundup, the Star Lake study (Rod Zone, Jolu mine) in the La Ronge district, Saskatchewan (Dunn, Nov. 1989 Preprint p. 8), and the Nickel Plate Mine at Hedley. The present author has conducted two private studies for his own reference at the Mt. Milligan deposits, including collecting soil samples for comparative purposes. In each of these studies, outer bark sampling has demonstrated its capability to locate gold mineralization.

5. BARK SAMPLING METHODOLOGY

The bark sampling herein described involved the scraping of about 100 g of outer bark flakes from one or more trees of a given species by means of a paint scraper used only for this purpose. Bark flakes were collected in a plastic dust pan whose edge had been cut into a crescent shape to fit roughly the curvature of the average tree in the sampling area. The bark sampling crews of Dr. Dunn were using

the same bark sampling tools in 1991 (Dunn, pers. comm.). The desired action on the scraper is for very light strokes in order to release only the outer bark flakes. The dominant conifer species of the sampling area is Lodgepole pine. Lodgepole pine and Spruce usually give similar results for gold (C. Dunn, pers. comm.). Bark is placed in a conventional gusseted soil sample bag, folded tight and placed in a large sample bag within the pack sack in order that it does not come in contact with any rock or soil sample being carried at the same time. Because contamination is an ever present potential problem, extreme care must be exercised in collection, storage and shipping of bark samples. The sampler should wear no gold jewelry such as rings and chains and should have no hand contact with the bark. Bags containing bark are taped shut prior to shipping and are sent tightly packed in their upright position in the shipping container. In the event that rejects are to be returned for storage, or perhaps submitted to another laboratory for further testing, it is advisable to instruct the laboratory to return samples packed in the above manner.

In the course of the staking of JEAN 100 a number of reconnaissance barks were collected. We have been advised that we can claim the cost of analysis of these samples for assessment credits and that has been done.

6. INTERPRETATION

The outer bark of the sample area is not enhanced in gold to anomalous levels. That may be taken as an indication of low gold in the system, and, or, a reflection of deep overburden and, or, thick unmineralized volcanic hangingwall in the southern half of the Jean mineralized zone.

Molybdenum is generally at or slightly above the detection limit. In the author's opinion, ample Mo is present in the system, particularly in the northern half of the Jean mineralized zone, to substantially enrich the outer bark in that metal. The lack of such an enrichment here may be a reflection of the character of the overburden, known to be boulder till.

The high mobility of mercury through cover-rocks and overburden could be responsible for the enhancement of mercury in the vegetation on the Jean. Evidence of a fault central to the Jean mineralized zone has come from drilling and detailed petrographic work. The relevant Jean structure is subparallel to the Pinchi Fault. The Pinchi occurs about 10 km to the south of the Jean mineralized zone.

The significance of the local bromine level is unknown. The values are much higher than those quoted by Dunn, but are generally similar to comparable samples collected on other properties owned by the

author. Bromine is discussed in Boyle, 1979, p. 158, Vinogradov, 1959 p.45, Wedepohl, 1974 (under atomic number 35). There appears to be relatively little biogeochemical data on bromine in the literature.

7. CONCLUSIONS

1. This preliminary biogeochemical survey on the existing Jean Property provided no guide to the distribution of gold. Scope for further reconnaissance sampling exists, such as to the south of the known mineralization zone subject to favorable ground position.

2. Anomalous levels of mercury in outer bark several time the detection limit were obtained. These may reflect proximity to faults of Pinchi age in the claims area or movement through thick overburden or hangingwall.

Report by

Ragnar U. Bruaset
Ragnar U. Bruaset & Associates Ltd.

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9. STATEMENT OF QUALIFICATION

I certify that:

1. I am a 1967 graduate of the University of British Columbia with a B. Sc. degree in geology. I am a Fellow of the Geological Association of Canada, a Member of The Association of Exploration Geochemists and the Society of Economic Geologists

2. I have practiced my profession as an exploration geologist from 1967 to the present.

3. This report is based on biogeochemical sampling carried out by myself, or under my direction. I have conducted biogeochemical surveys on clients' properties as well as on my wholly or partly owned properties variously since 1989.

4. I am the author of this report.

5. I participated in geological, geochemical, diamond and percussion drilling and major access developing programs on the former NBC Syndicate Jean and JW claims during 1973, 74, 75, 78 and 79 in the capacity of party chief and employee of Cominco Ltd. which was the Jean Project Manager from 1972 to 1991.

Ragnar U. Bruaset B. Sc., F. G. A. C.
June 23, 1992

APPENDIX

CERTIFICATES OF ANALYSIS OF OUTER BARK

ANALYTICAL PROCEDURES FOR OUTER BARK

ACTLABS

ACTIVATION LABORATORIES LTD

Invoice No.: 3802
Work Order: 3778
Invoice Date: 01-APR-92
Date Submitted: 10-MAR-92
Your Reference: LETTER
Account Number: 243

RAGNAR U. BRUASET & ASSOCIATES LTD
5851 HALIFAX STREET
BURNABY, BC
CANADA V5B 2P5

ATTN: RAGNAR BRUASET

CERTIFICATE OF ANALYSIS

INAA package, elements and detection limits:

AU	0.05	PPB	AG	0.3	PPM	AS	0.01	PPM	BA	5.	PPM
BR	0.01	PPM	CA	0.01	%	CO	0.1	PPM	CR	0.3	PPM
CS	0.05	PPM	FE	0.005	%	HF	0.05	PPM	HG	0.05	PPM
IR	0.1	PPB	K	0.001	%	MO	0.05	PPM	NA	0.5	PPM
NI	5.	PPM	RB	1.	PPM	SB	0.005	PPM	SC	0.01	PPM
SE	0.1	PPM	SR	10.	PPM	TA	0.05	PPM	TH	0.1	PPM
U	0.01	PPM	W	0.05	PPM	ZN	2.	PPM	LA	0.01	PPM
CE	0.1	PPM	ND	0.3	PPM	SM	0.001	PPM	EU	0.05	PPM
TB	0.1	PPM	YB	0.005	PPM	LU	0.001	PPM			

CERTIFIED BY :

DR. ERIC L. HOFFMAN

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Activation Laboratories Ltd. Work Order: 3778 Report: 3802

JEAN PROPERTY 93N/2

outer bark: All samples of lodgepole pine

Sample description	AU PPB	AG PPM	AS PPM	BA PPM	BR PPM	CA %	CO PPM	CR PPM	CS PPM	FE %	HF PPM	HG PPM	IR PPB	K %	MO PPM	NA PPM	NI PPM	RB PPM	SB PPM	SC PPM	SE PPM
J91 25B	0.27	<0.3	0.13	42	5.9	0.77	0.4	1.3	<0.05	0.020	<0.05	0.14	<0.1	0.085	0.06	99.7	<5	<1	0.026	0.07	<0.1
J91 26B	0.08	<0.3	0.09	13	4.3	0.53	0.2	<0.3	<0.05	0.006	<0.05	0.13	<0.1	0.089	<0.05	25.0	<5	1	0.018	0.02	<0.1
J91 27B	<0.05	<0.3	0.11	18	3.8	0.52	0.2	0.5	<0.05	0.012	<0.05	0.18	<0.1	0.075	0.07	34.9	<5	<1	0.027	0.04	<0.1
J91 35B	0.15	<0.3	0.05	10	2.1	0.86	0.1	<0.3	0.11	0.006	<0.05	<0.05	<0.1	0.073	0.05	21.9	<5	3	0.007	0.02	<0.1
J91 28B	0.19	<0.3	0.11	16	4.4	0.49	0.3	0.4	<0.05	0.008	<0.05	0.12	<0.1	0.096	<0.05	39.7	<5	2	0.018	0.03	0.2
J91 56B	0.07	<0.3	0.06	11	4.6	0.63	0.2	<0.3	0.05	<0.005	<0.05	0.11	<0.1	0.091	<0.05	21.1	<5	2	0.010	0.01	<0.1
J91 58B	0.09	<0.3	0.09	18	5.2	0.87	0.3	0.3	0.16	0.007	<0.05	0.05	<0.1	0.077	<0.05	27.0	<5	2	0.015	0.02	0.1
J91-59B	0.15	<0.3	0.12	12	4.8	0.67	0.2	<0.3	0.25	0.007	<0.05	0.12	<0.1	0.073	<0.05	29.6	<5	3	0.020	0.02	<0.1
J91-101B	0.19	<0.3	0.14	21	4.3	0.54	0.3	0.9	0.06	0.016	<0.05	0.12	<0.1	0.081	0.09	76.9	<5	1	0.023	0.06	<0.1
J91-104B	0.22	<0.3	0.10	49	4.9	0.76	0.2	<0.3	0.06	0.009	<0.05	0.15	<0.1	0.074	0.06	28.6	<5	1	0.025	0.03	<0.1
J91-105B	0.17	<0.3	0.09	84	4.0	0.59	0.3	<0.3	<0.05	0.007	<0.05	0.14	<0.1	0.055	<0.05	22.2	<5	<1	0.021	0.02	<0.1
J91-110B	0.17	<0.3	0.11	25	5.2	0.53	0.2	<0.3	<0.05	0.007	<0.05	0.14	<0.1	0.069	<0.05	24.5	<5	2	0.022	0.02	<0.1
J91-111B	0.18	<0.3	0.09	24	4.9	0.56	0.2	<0.3	<0.05	0.006	<0.05	0.19	<0.1	0.083	0.08	22.1	<5	2	0.022	0.02	<0.1
J91-112B	0.18	<0.3	0.08	44	4.4	0.56	0.2	<0.3	<0.05	0.006	<0.05	0.19	<0.1	0.098	<0.05	19.2	<5	1	0.014	0.02	<0.1
J91-114B	0.11	<0.3	0.08	21	4.5	0.53	0.2	<0.3	<0.05	0.006	<0.05	0.17	<0.1	0.066	0.09	17.8	<5	1	0.018	0.02	<0.1
J91-115B	0.16	<0.3	0.05	9	3.1	0.39	0.1	<0.3	<0.05	<0.005	<0.05	0.11	<0.1	0.073	0.07	15.8	<5	1	0.011	0.01	<0.1
J91-116B	0.17	<0.3	0.07	14	3.2	0.53	0.1	<0.3	<0.05	<0.005	<0.05	0.16	<0.1	0.064	0.10	16.5	<5	<1	0.015	0.01	<0.1
J91-117B	0.09	<0.3	0.09	17	5.2	0.85	0.2	0.4	<0.05	0.006	<0.05	0.18	<0.1	0.092	0.06	21.3	<5	1	0.021	0.02	0.2
J91-118B	0.25	<0.3	0.06	13	2.8	0.34	0.2	<0.3	<0.05	0.005	<0.05	0.17	<0.1	0.068	0.05	20.6	<5	<1	0.011	0.01	<0.1
J91-120B	0.18	<0.3	0.10	19	6.1	0.52	0.3	<0.3	0.41	0.008	<0.05	0.26	<0.1	0.087	<0.05	26.9	<5	4	0.022	0.02	<0.1
J91-129B	0.06	<0.3	0.09	13	5.2	0.54	0.3	<0.3	0.15	0.005	<0.05	0.22	<0.1	0.065	<0.05	26.3	<5	2	0.017	0.02	<0.1
J91-130B	0.18	<0.3	0.09	11	3.5	0.38	0.2	<0.3	<0.05	0.008	<0.05	0.16	<0.1	0.088	0.07	26.7	<5	2	0.015	0.02	<0.1
J91-133B	0.13	<0.3	0.11	32	5.6	0.63	0.3	<0.3	<0.05	0.008	<0.05	0.15	<0.1	0.099	0.05	29.6	<5	1	0.020	0.02	0.1
J91-134B	0.18	<0.3	0.06	22	4.5	0.47	0.2	<0.3	<0.05	0.006	<0.05	0.19	<0.1	0.071	<0.05	21.1	<5	1	0.018	0.02	<0.1
J91-137B	0.09	<0.3	0.05	200	3.5	1.01	0.1	<0.3	<0.05	<0.005	<0.05	0.21	<0.1	0.163	<0.05	17.2	<5	3	0.010	0.01	<0.1
J91-139B	0.06	<0.3	0.09	10	3.6	0.57	0.2	<0.3	0.28	0.005	<0.05	0.12	<0.1	0.078	<0.05	20.1	<5	2	0.019	0.02	<0.1
J91-140B	0.14	<0.3	0.11	26	5.0	0.77	0.3	<0.3	0.30	0.006	<0.05	0.17	<0.1	0.076	0.05	18.8	<5	3	0.023	0.01	<0.1
J91-141B	0.11	<0.3	0.08	8	4.1	0.33	0.2	<0.3	0.22	0.005	<0.05	0.13	<0.1	0.079	<0.05	19.8	<5	4	0.016	0.02	<0.1
J91-142B	0.18	<0.3	0.09	23	4.2	0.65	0.2	0.5	<0.05	0.012	<0.05	0.14	<0.1	0.062	0.06	49.9	<5	1	0.021	0.04	<0.1
J91-143B	0.15	<0.3	0.09	23	3.4	0.56	0.2	0.3	<0.05	0.008	<0.05	0.11	<0.1	0.068	0.07	40.3	<5	<1	0.020	0.03	<0.1
J91-144B	0.10	<0.3	0.12	29	5.0	0.65	0.3	0.4	<0.05	0.010	<0.05	0.13	<0.1	0.093	0.08	49.0	<5	1	0.028	0.03	<0.1
J91-145B	0.15	<0.3	0.10	37	5.0	0.52	0.2	<0.3	<0.05	0.007	<0.05	0.15	<0.1	0.080	<0.05	26.8	<5	1	0.020	0.02	0.1
J91-146B	0.09	<0.3	0.12	41	5.8	0.46	0.2	<0.3	<0.05	0.007	<0.05	0.18	<0.1	0.094	0.07	28.4	<5	1	0.022	0.02	<0.1
J91-147B	0.17	<0.3	0.07	18	3.8	0.51	0.1	<0.3	<0.05	0.005	<0.05	0.14	<0.1	0.074	0.08	18.5	<5	1	0.014	0.02	<0.1
J91-148B	0.17	<0.3	0.12	34	5.5	0.68	0.3	<0.3	<0.05	0.006	<0.05	0.21	<0.1	0.072	0.05	26.2	<5	2	0.027	0.02	0.2

Activation Laboratories Ltd. Work Order: 3778 Report: 3802

Sample description	SR PPM	TA PPM	TH PPM	U PPM	W PPM	ZN PPM	LA PPM	CE PPM	ND PPM	SM PPM	EU PPM	TB PPM	YB PPM	LU PPM	Mass g
J91 25B	22	<0.05	<0.1	<0.01	<0.05	49	0.19	0.3	<0.3	0.022	<0.05	<0.1	0.013	0.002	30.06
J91 26B	<10	<0.05	<0.1	<0.01	<0.05	35	0.05	<0.1	<0.3	0.007	<0.05	<0.1	<0.005	0.001	30.30
J91 27B	15	<0.05	<0.1	<0.01	<0.05	52	0.09	0.2	<0.3	0.012	<0.05	<0.1	0.008	0.002	30.33
J91 35B	<10	<0.05	<0.1	<0.01	<0.05	29	0.04	<0.1	<0.3	0.005	<0.05	<0.1	<0.005	<0.001	30.30
J91 2[illegible]B	<10	<0.05	<0.1	<0.01	<0.05	43	0.07	0.1	<0.3	0.009	<0.05	<0.1	<0.005	<0.001	30.22
J91 56B	<10	<0.05	<0.1	<0.01	<0.05	37	0.03	<0.1	<0.3	0.005	<0.05	<0.1	<0.005	<0.001	30.06
J91 58B	<10	<0.05	<0.1	<0.01	<0.05	46	0.05	<0.1	<0.3	0.007	<0.05	<0.1	<0.005	<0.001	30.10
J91-59B	<10	<0.05	<0.1	<0.01	<0.05	39	0.06	<0.1	<0.3	0.008	<0.05	<0.1	<0.005	<0.001	30.04
J91-101B	17	<0.05	<0.1	<0.01	<0.05	37	0.14	0.2	<0.3	0.017	<0.05	<0.1	0.009	0.002	30.46
J91-104B	<10	<0.05	<0.1	<0.01	<0.05	37	0.08	<0.1	<0.3	0.011	<0.05	<0.1	0.007	<0.001	30.26
J91-105B	17	<0.05	<0.1	<0.01	<0.05	36	0.07	0.1	<0.3	0.008	<0.05	<0.1	0.007	<0.001	30.17
J91-110B	<10	<0.05	<0.1	<0.01	<0.05	49	0.07	0.1	<0.3	0.009	<0.05	<0.1	<0.005	<0.001	30.20
J91-111B	<10	<0.05	<0.1	<0.01	<0.05	40	0.05	<0.1	<0.3	0.007	<0.05	<0.1	<0.005	<0.001	30.11
J91-112B	<10	<0.05	<0.1	<0.01	<0.05	40	0.04	<0.1	<0.3	0.006	<0.05	<0.1	<0.005	<0.001	30.60
J91-114B	17	<0.05	<0.1	<0.01	<0.05	47	0.05	0.1	<0.3	0.006	<0.05	<0.1	<0.005	<0.001	30.17
J91-115B	<10	<0.05	<0.1	<0.01	<0.05	35	0.03	<0.1	<0.3	0.004	<0.05	<0.1	<0.005	<0.001	30.18
J91-116B	18	<0.05	<0.1	<0.01	<0.05	59	0.04	<0.1	<0.3	0.005	<0.05	<0.1	<0.005	<0.001	30.66
J91-117B	18	<0.05	<0.1	<0.01	<0.05	54	0.04	<0.1	<0.3	0.007	<0.05	<0.1	<0.005	0.001	30.17
J91-118B	<10	<0.05	<0.1	<0.01	<0.05	25	0.03	<0.1	<0.3	0.005	<0.05	<0.1	<0.005	<0.001	30.27
J91-120B	<10	<0.05	<0.1	<0.01	<0.05	42	0.06	0.1	<0.3	0.008	<0.05	<0.1	0.005	<0.001	30.21
J91-129B	<10	<0.05	<0.1	<0.01	<0.05	42	0.04	<0.1	<0.3	0.006	<0.05	<0.1	<0.005	<0.001	30.14
J91-130B	<10	<0.05	<0.1	<0.01	<0.05	24	0.05	<0.1	<0.3	0.008	<0.05	<0.1	0.006	<0.001	30.02
J91-133B	13	<0.05	<0.1	<0.01	<0.05	43	0.06	0.1	<0.3	0.009	<0.05	<0.1	<0.005	<0.001	30.11
J91-134B	13	<0.05	<0.1	<0.01	<0.05	51	0.05	<0.1	<0.3	0.007	<0.05	<0.1	<0.005	<0.001	30.19
J91-137B	43	<0.05	<0.1	<0.01	<0.05	67	0.03	<0.1	<0.3	0.004	<0.05	<0.1	<0.005	<0.001	30.14
J91-139B	<10	<0.05	<0.1	<0.01	<0.05	34	0.04	<0.1	<0.3	0.006	<0.05	<0.1	<0.005	<0.001	30.02
J91-140B	<10	<0.05	<0.1	<0.01	<0.05	61	0.04	<0.1	<0.3	0.007	<0.05	<0.1	<0.005	<0.001	30.04
J91-141B	<10	<0.05	<0.1	<0.01	<0.05	38	0.04	<0.1	<0.3	0.006	<0.05	<0.1	<0.005	<0.001	30.25
J91-142B	<10	<0.05	<0.1	<0.01	<0.05	40	0.10	0.2	<0.3	0.013	<0.05	<0.1	0.008	0.002	30.37
J91-143B	13	<0.05	<0.1	<0.01	<0.05	36	0.08	0.1	<0.3	0.011	<0.05	<0.1	0.007	0.001	30.20
J91-144B	<10	<0.05	<0.1	<0.01	<0.05	57	0.09	0.1	<0.3	0.013	<0.05	<0.1	<0.005	0.002	30.33
J91-145B	<10	<0.05	<0.1	<0.01	<0.05	51	0.06	<0.1	<0.3	0.009	<0.05	<0.1	<0.005	<0.001	30.14
J91-146B	13	<0.05	<0.1	<0.01	<0.05	46	0.06	0.1	<0.3	0.009	<0.05	<0.1	0.007	0.001	30.51
J91-147B	15	<0.05	<0.1	<0.01	<0.05	54	0.04	<0.1	<0.3	0.006	<0.05	<0.1	0.006	<0.001	30.24
J91-148B	18	<0.05	<0.1	<0.01	<0.05	55	0.05	<0.1	<0.3	0.008	<0.05	<0.1	<0.005	<0.001	30.05

Activation Laboratories Ltd. Work Order: 3778 Report: 3802

JEAN PROPERTY

outer banks

All samples: lodgepole pine

Sample description	AU PPB	AG PPM	AS PPM	BA PPM	BR PPM	CA %	CO PPM	CR PPM	CS PPM	FE %	HF PPM	HG PPM	IR PPB	K %	MO PPM	NA PPM	NI PPM	RB PPM	SB PPM	SC PPM	SE PPM
J91-151B	0.14	<0.3	0.12	47	5.4	0.79	0.3	0.4	<0.05	0.010	<0.05	0.22	<0.1	0.068	0.07	43.3	<5	1	0.031	0.04	0.1
J91-154B	0.08	<0.3	0.07	13	4.7	0.56	0.2	<0.3	0.13	0.005	<0.05	0.22	<0.1	0.101	<0.05	19.4	<5	3	0.016	0.01	<0.1
J91-157B	0.20	<0.3	0.09	59	5.0	0.72	0.2	<0.3	<0.05	0.009	<0.05	0.24	<0.1	0.071	<0.05	26.1	<5	2	0.023	0.03	<0.1
J91-159B	0.22	<0.3	0.10	32	5.2	0.79	0.2	<0.3	<0.05	0.007	<0.05	0.23	<0.1	0.077	<0.05	21.0	<5	2	0.021	0.02	<0.1
J91-160B	0.20	<0.3	0.14	60	6.6	0.85	0.3	<0.3	<0.05	0.007	<0.05	0.27	<0.1	0.113	<0.05	24.6	<5	2	0.020	0.02	<0.1
J91-161B	0.09	<0.3	0.06	26	4.6	0.66	0.2	<0.3	<0.05	<0.005	<0.05	0.19	<0.1	0.080	0.09	19.9	<5	<1	0.012	0.02	<0.1
J91-162B	0.19	<0.3	0.04	23	3.4	0.60	0.2	<0.3	<0.05	<0.005	<0.05	0.15	<0.1	0.098	<0.05	17.6	<5	<1	0.018	0.01	<0.1
J91-200B	0.17	<0.3	0.07	14	6.7	0.45	0.3	<0.3	<0.05	0.006	<0.05	0.21	<0.1	0.087	<0.05	28.8	<5	<1	0.019	0.02	<0.1
J91-201B	0.08	<0.3	0.05	19	4.4	0.56	0.2	<0.3	<0.05	<0.005	<0.05	0.13	<0.1	0.081	<0.05	20.9	<5	<1	0.016	0.01	<0.1
J91-202B	0.16	<0.3	0.06	19	4.4	0.71	0.2	<0.3	<0.05	<0.005	<0.05	0.13	<0.1	0.071	<0.05	20.6	<5	<1	0.019	0.01	<0.1
J91-203B	0.14	<0.3	0.07	17	4.2	0.77	0.2	<0.3	<0.05	0.006	<0.05	0.18	<0.1	0.079	0.07	38.4	<5	1	0.018	0.02	<0.1
J91-204B	0.16	<0.3	0.07	19	5.4	0.61	0.2	<0.3	<0.05	<0.005	<0.05	0.14	<0.1	0.085	<0.05	26.0	<5	2	0.019	0.01	<0.1
J91-205B	0.14	<0.3	0.06	31	4.8	0.82	0.2	<0.3	0.06	<0.005	<0.05	0.17	<0.1	0.049	<0.05	27.1	<5	2	0.021	0.01	<0.1
J91-206B	0.16	<0.3	0.05	27	5.0	0.72	0.2	<0.3	0.06	<0.005	<0.05	0.12	<0.1	0.056	<0.05	26.4	<5	2	0.013	0.01	<0.1
J91-207B	0.09	<0.3	0.07	21	3.9	0.70	0.1	<0.3	0.07	0.006	<0.05	0.09	<0.1	0.075	0.05	37.8	<5	2	0.017	0.02	<0.1
J91-208B	0.10	<0.3	0.08	43	5.6	0.68	0.2	<0.3	<0.05	0.006	<0.05	0.08	<0.1	0.074	<0.05	34.0	<5	1	0.023	0.02	<0.1
J91-210B	0.16	<0.3	0.08	49	4.5	0.86	0.2	<0.3	<0.05	0.008	<0.05	0.11	<0.1	0.048	0.08	28.6	<5	<1	0.023	0.03	<0.1
J91-211B	0.20	<0.3	0.07	37	4.3	0.75	0.2	<0.3	<0.05	0.006	<0.05	0.13	<0.1	0.053	0.07	28.4	<5	<1	0.020	0.02	<0.1

Activation Laboratories Ltd. Work Order: 3778 Report: 3802

Sample description	SR PPM	TA PPM	TH PPM	U PPM	W PPM	ZN PPM	LA PPM	CE PPM	ND PPM	SM PPM	EU PPM	TB PPM	YB PPM	LU PPM	Mass g
J91-151B	<10	<0.05	<0.1	<0.01	<0.05	67	0.10	0.2	<0.3	0.013	<0.05	<0.1	<0.005	0.001	30.30
J91-154B	<10	<0.05	<0.1	<0.01	<0.05	32	0.04	<0.1	<0.3	0.005	<0.05	<0.1	<0.005	<0.001	30.45
J91-157B	20	<0.05	<0.1	<0.01	0.11	55	0.08	0.1	<0.3	0.009	<0.05	<0.1	0.006	<0.001	30.11
J91-159B	<10	<0.05	<0.1	<0.01	<0.05	58	0.06	0.1	<0.3	0.008	<0.05	<0.1	0.007	0.001	30.28
J91-160B	23	<0.05	<0.1	<0.01	<0.05	56	0.06	0.1	<0.3	0.008	<0.05	<0.1	<0.005	<0.001	30.32
J91-161B	26	<0.05	<0.1	<0.01	<0.05	48	0.04	<0.1	<0.3	0.006	<0.05	<0.1	<0.005	0.001	30.03
J91-162B	<10	<0.05	<0.1	<0.01	<0.05	40	0.04	<0.1	<0.3	0.005	<0.05	<0.1	<0.005	<0.001	30.20
J91-200B	<10	<0.05	<0.1	<0.01	<0.05	42	0.05	0.1	<0.3	0.009	<0.05	<0.1	<0.005	<0.001	30.21
J91-201B	<10	<0.05	<0.1	<0.01	<0.05	49	0.03	<0.1	<0.3	0.006	<0.05	<0.1	<0.005	<0.001	30.03
J91-202B	15	<0.05	<0.1	<0.01	<0.05	54	0.04	<0.1	<0.3	0.006	<0.05	<0.1	<0.005	<0.001	30.11
J91-203B	<10	<0.05	<0.1	<0.01	<0.05	67	0.05	0.1	<0.3	0.007	<0.05	<0.1	<0.005	<0.001	30.24
J91-204B	<10	<0.05	<0.1	<0.01	<0.05	52	0.04	<0.1	<0.3	0.006	<0.05	<0.1	0.005	<0.001	30.07
J91-205B	<10	<0.05	<0.1	<0.01	<0.05	68	0.04	<0.1	<0.3	0.006	<0.05	<0.1	<0.005	<0.001	30.29
J91-206B	19	<0.05	<0.1	<0.01	<0.05	39	0.04	<0.1	<0.3	0.006	<0.05	<0.1	<0.005	<0.001	30.18
J91-207B	22	<0.05	<0.1	<0.01	<0.05	61	0.05	<0.1	<0.3	0.007	<0.05	<0.1	<0.005	<0.001	30.21
J91-208B	<10	<0.05	<0.1	<0.01	<0.05	63	0.06	<0.1	<0.3	0.009	<0.05	<0.1	<0.005	<0.001	30.11
J91-210B	32	<0.05	<0.1	<0.01	<0.05	51	0.07	<0.1	<0.3	0.011	<0.05	<0.1	0.006	0.001	30.33
J91-211B	20	<0.05	<0.1	<0.01	<0.05	52	0.06	<0.1	<0.3	0.010	<0.05	<0.1	0.006	<0.001	30.01

Activation Laboratories Ltd. Work Order: 3778 Report: 3802B

JEAN PROPERTY

Sample description	AU PPB	AG PPM	AS PPM	BA PPM	BR PPM	CA %	CO PPM	CR PPM	CS PPM	FE %	HF PPM	HG PPM	IR PPB	K %	MO PPM	NA PPM	NI PPM	RB PPM	SB PPM	SC PPM	SE PPM
J91-102B White spruce	0.12	<0.3	0.04	210	3.6	1.02	0.2	<0.3	<0.05	<0.005	<0.05	0.14	<0.1	0.198	<0.05	20.1	<5	3	0.010	0.01	<0.1
J91-103B	.12	<0.3	0.02	220	1.5	1.21	0.1	<0.3	<0.05	<0.005	<0.05	0.08	<0.1	0.106	<0.05	12.3	<5	<1	0.006	<0.01	<0.1
J91-126B	0.15	<0.3	0.03	99	2.9	0.92	<0.1	<0.3	0.05	<0.005	<0.05	0.19	<0.1	0.160	<0.05	14.4	<5	3	0.007	<0.01	<0.1
J91-127B	0.10	<0.3	0.05	80	4.4	1.21	0.2	<0.3	0.18	<0.005	<0.05	0.13	<0.1	0.219	<0.05	21.2	<5	6	0.014	0.01	<0.1
J91-135B	0.11	<0.3	0.03	170	2.3	1.15	0.1	<0.3	<0.05	<0.005	<0.05	0.13	<0.1	0.108	0.14	13.9	<5	1	0.005	<0.01	<0.1
J91-136B	0.17	<0.3	0.05	150	4.8	1.43	0.2	<0.3	<0.05	<0.005	<0.05	0.26	<0.1	0.192	<0.05	17.7	<5	3	0.010	0.01	<0.1
J91-138B Lodgepole pine	0.13	<0.3	0.03	94	3.0	1.39	<0.1	<0.3	0.06	<0.005	<0.05	0.12	<0.1	0.139	<0.05	14.6	<5	1	0.011	<0.01	0.1
J91-155B Lodge pole pine	0.07	<0.3	0.05	18	3.0	0.54	0.1	<0.3	0.07	<0.005	<0.05	0.15	<0.1	0.059	<0.05	14.6	<5	1	0.300	0.01	<0.1
J91-156B White spruce	0.14	<0.3	0.04	160	3.2	0.91	<0.1	<0.3	<0.05	<0.005	<0.05	0.12	<0.1	0.186	<0.05	17.1	<5	2	0.220	<0.01	<0.1
J91-158B	0.13	<0.3	0.04	240	5.1	1.40	0.2	<0.3	<0.05	<0.005	<0.05	0.18	<0.1	0.181	0.10	16.5	<5	3	0.020	<0.01	<0.1
J91-209B	0.14	<0.3	0.07	150	5.3	0.94	0.2	<0.3	<0.05	0.005	<0.05	0.05	<0.1	0.083	<0.05	43.0	<5	<1	0.026	0.02	<0.1
J91-212B	0.07	<0.3	0.06	230	5.4	1.70	0.2	<0.3	<0.05	<0.005	<0.05	0.17	<0.1	0.219	<0.05	21.8	<5	2	0.017	0.01	<0.1

Activation Laboratories Ltd. Work Order: 3778 Report: 3802B

Sample description	SR PPM	TA PPM	TH PPM	U PPM	W PPM	ZN PPM	LA PPM	CE PPM	ND PPM	SM PPM	EU PPM	TB PPM	YB PPM	LU PPM	Mass g
J91-102B	31	<0.05	<0.1	<0.01	<0.05	70	0.03	<0.1	<0.3	0.004	<0.05	<0.1	<0.005	<0.001	30.00
J91-103B	25	<0.05	<0.1	<0.01	<0.05	54	0.02	<0.1	<0.3	0.002	<0.05	<0.1	<0.005	<0.001	30.00
J91-126B	25	<0.05	<0.1	<0.01	<0.05	84	0.02	<0.1	<0.3	0.002	<0.05	<0.1	<0.005	<0.001	30.10
J91-127B	38	<0.05	<0.1	<0.01	<0.05	66	0.03	<0.1	<0.3	0.004	<0.05	<0.1	<0.005	<0.001	30.01
J91-135B	25	<0.05	<0.1	<0.01	<0.05	64	0.02	<0.1	<0.3	0.003	<0.05	<0.1	<0.005	<0.001	30.25
J91-136B	35	<0.05	<0.1	<0.01	<0.05	77	0.03	<0.1	<0.3	0.004	<0.05	<0.1	<0.005	<0.001	30.54
J91-138B	37	<0.05	<0.1	<0.01	<0.05	89	0.02	<0.1	<0.3	0.003	<0.05	<0.1	<0.005	<0.001	30.54
J91-155B	13	<0.05	<0.1	<0.01	<0.05	44	0.04	<0.1	<0.3	0.006	<0.05	<0.1	<0.005	<0.001	30.11
J91-156B	24	<0.05	<0.1	<0.01	<0.05	68	0.03	<0.1	<0.3	0.004	<0.05	<0.1	<0.005	<0.001	30.44
J91-158B	54	<0.05	<0.1	<0.01	<0.05	98	0.03	<0.1	<0.3	0.003	<0.05	<0.1	<0.005	<0.001	30.18
J91-209B	40	<0.05	<0.1	<0.01	<0.05	98	0.05	<0.1	<0.3	0.008	<0.05	<0.1	<0.005	0.001	30.14
J91-212B	30	<0.05	<0.1	<0.01	0.05	92	0.03	<0.1	<0.3	0.004	<0.05	<0.1	<0.005	<0.001	30.07

ANALYTICAL PROCEDURES FOR VEGETATION SAMPLES

AT ACTIVATION LABORATORIES LTD.
1336 SANDHILLS DRIVE, ANCASTER, ONTARIO, CANADA
L9G4V5 TEL. 416 648-9611, FAX 416-648-9613

The following procedures in quotes were provided by Eric Hoffman in a FAX dated August 3, 1990 and are believed to apply to samples up to and including REPORT 2694 in the APPENDIX. Subsequently, a Retsch mill, with 1 mm sieve, replaced the Wylie mill and the briquetting press was changed to Hertzog (Ref. FAX Dec. 20, 1991).

"Samples were dried at 90 degrees C. for 24 hours. Samples were macerated in a Wylie mill (specifically designed for vegetation). 30 grams of sample were weighed on a laboratory kimwipe and then placed in a Detiert Detroit briquetting press complete with kimwipe enclosing the sample. The sample was pressed using 15 tons of pressure to form a briquette approximately 2 1/8 inches in diameter and 0.5 inch thick. The samples were placed in stacks approximately 12 inches high with flux monitors at the top, middle and bottom of the stack. The stacks of samples were irradiated for 3 hours at a flux of about 5X10 neutrons per centimeter square per second. After a decay of 6 to 7 days to allow the Na to decay the samples were counted on high resolution germanium detectors under computer automation for 500 seconds. Results were corrected for decay and compared to calibrations developed from multiple international and synthetic standards. All anomalous samples for Au and random other samples to make up about 40 % of the total number of samples were then recounted as part of our QA/QC program".

JEAN 14

JEAN 19

Alex 3

Alex 20

Alex 18

Alex 3

Alex 2

Alex 14

Alex 1

Alex 5

Alex 8

Alex 21

Alex 13

JEAN 19

JEAN CREEK (unnamed)

OPEN GROUND

Manon

Manon, M.C.

BEAVER POND

JEAN 9 (1988)
JEAN 8 (1988)

JEAN 8

Baseline 22N

Alex 2 (4Apr)

Alex 2 (4Apr)

Alex 1 (Aug 21/88)

JW 180
Nº 8 SW 6

LCP

OWNERSHIP

- D.L. Cooke, Ella Ramsey, Diane Sherwood, Blanche Lee, Charles W. Fawcett, + Manitoba Ltd. — JW 91 Nos 4, 6, 8, 14, ; JW 180
- J.C. Stephen, J.P. Stevenson — Alex, Manon
- Imperial Metals Corp. — JEAN 8, 9, 13, 14, 15

Legend

- Select post
- Select post
- Creek
- road
- swamp
- other
- JW 212 cancelled claim
- Drillsite no. percussion hole - diamond drill hole - vertical - inclined

Scale:
0 m 250 m 500 m
0 m 500 ft 1000 ft
1" = 400' original plot

Roads and creeks were originally mapped from original of JEAN 74-3 (1974 map)
Also claims to the south are location lines + JW 91-1 series claims obtained from Alex of Cominco Plan 20-154 (July 1974)
Percussion drill hole locations from Plate JEAN 74-3

NOTE: Control by tie claim and compass traverses with tie-in to Cominco control originally established by Ella Ramsey using the same methods in the early to mid-1970's.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

22,519

JEAN PROPERTY — NTS. 93M/2W

Drawn by: JW/B	Traced by:
Surveyed by:	Revised by:
Date:	Date:

CLAIM MAP

Scale: 1 : 4000 — Date: Sept. 1991 — Plate J 82-3

LEGEND

- 5 Monzonite & Quartz Monzonite
- 4 Diorite & Feldspar Porphyry.
- 3 Granodiorite.
- 2 Sanitized or Hornfelsic Biotite Volcanics
- 2A Garnitiferous Agglomerate.
- 1 Andesite Flows & Fragmentals.
- Outcrop
- Dip & Strike : Strata, etc. Veins & Fractures
- Fault Zone
- Roads - 4 WD
- Drill Hole 3PH-10

Scales
1:25m
0m 250m
0 800ft. 800ft.

GEOLOGICAL BRANCH
ASSESSMENT REPORT
22,519

JEAN PROPERTY
N.T.S. 93 H/10W

Drawn by: DLC	Traced by
Plotted by: Date:	Reviewed by: Date:
DLC MAR 92	

GEOLOGY

Omineca M.D.

Scale: 1:2500 Date: March 31, 1992 Plate: 392-9

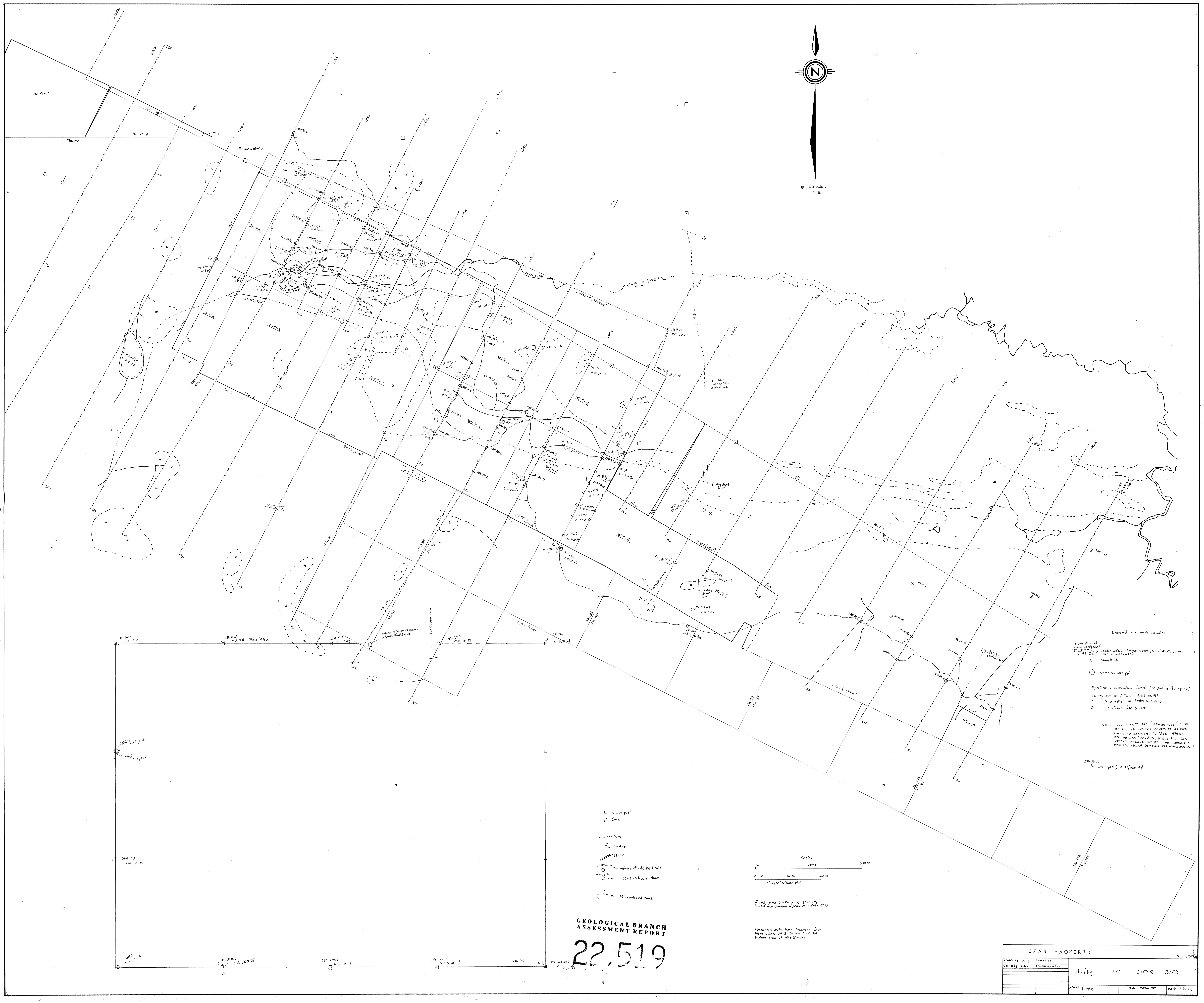
GEOLOGICAL BRANCH
ASSESSMENT REPORT

22,519

JEAN PROPERTY

N.T.S. 93A/2W

Drawn by: R.G.B.	Traced by:	
Drawn Hdby: Date: Oct. 1991	Devised by: Date:	ROCK ANALYSES: COPPER AND GOLD
Scale: 1:2400	Date: March 1992	Plate: 7-92-5


1991 Declination 24°16'
JEAN CREEK
BEAVER POND
Legend for bark samples
Sample designation, without postscript "B" (for bark)
J 91-XX, J
species code: J = Lodgepole pine, W.S. = White spruce, B.S. = Balsam fir
Samplesite
Check sample pair
Hypothetical anomalous levels for gold in this type of survey are as follows: (Ref: Dunn, 1992)
≥ 0.4 ppb for Lodgepole pine
≥ 0.3 ppb for spruce
NOTE: ALL VALUES ARE "DRYWEIGHT" IE. THE ACTUAL ELEMENTAL CONTENTS OF THE BARK. TO CONVERT TO "ASH WEIGHT EQUIVALENT" VALUES, MULTIPLY DRY WEIGHT VALUES BY 50 FOR LODGEPOLE PINE AND SPRUCE SAMPLES (FOR ANY ELEMENT).
J91-200, J
0.17 (ppb Au), 0.21 (ppm Hg)
Claim post
Creek
Road
swamp
esker
JPH74-12
percussion drill hole (vertical)
DDH 75-4
DDH; vertical, inclined
Mineralized zone
Scales
0m
250 M
0
100
500 Ft.
1000 Ft.
1" =400' original plot
Roads and creeks were generally traced from original of JEAN 74-3 (Nov. 1974)
Percussion drill hole locations from Plate JEAN 74-3 Diamond drill hole locations from JP-75-4 (1"=400')
GEOLOGICAL BRANCH
ASSESSMENT REPORT
22,519
JEAN PROPERTY
N.T.S. 93N/2W
Drawn by: R.U.B.
Traced by:
Revised by: Date:
Revised by: Date:
Au / Hg IN OUTER BARK
Scale: 1: 4800
Date: March 1992
Plate: J 92-6