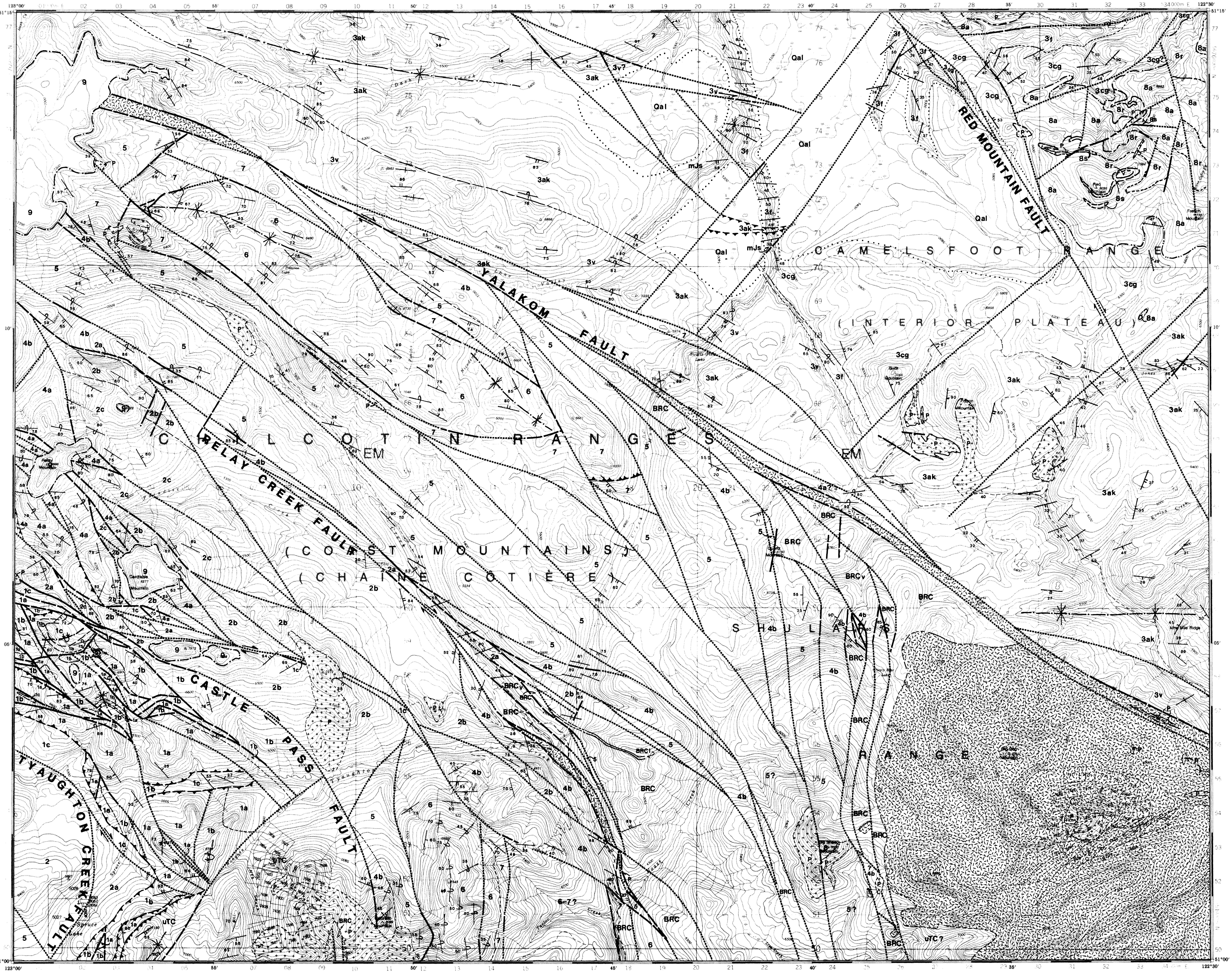

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Energy, Mines and Resources Canada — Énergie, Mines et Ressources Canada

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9A. GEOLOGY OF THE NOAXE CREEK MAP AREA

NTS 920/2

Geology by J.K. Glover, P. Schiarizza, J.I. Garver,[1] P.J. Umhoefer[1] and H.W. Tipper,[2] 1987

[1]Department of Geological Sciences, University of Washington, Seattle
[2]Geological Survey of Canada, Vancouver

Includes data from assessment reports and from reports and maps by H.W. Tipper, J.A. Jeletzky, E.T. Tozer and M.E. Rusmore

Compilation by J.K. Glover and P. Schiarizza

LEGEND

PLEISTOCENE AND RECENT

Qal *Unconsolidated alluvial, fluvial and glacial deposits*

STRATIFIED ROCKS

SOUTHWEST OF THE YALAKOM FAULT

MIOCENE AND/OR PLIOCENE

9 *Plateau lava, basalt flows*

EOCENE

8 *Rhyolitic to dacitic flows*

UPPER CRETACEOUS

Cenomanian and (?) younger

BATTLEMENT RIDGE GROUP

POWELL CREEK FORMATION
7 *Andesitic volcanic breccia and lapilli tuff; fine-grained tuff, basaltic to andesitic flows; epiclastic sediments*

SILVERQUICK FORMATION
6 *Pebble to cobble polymict conglomerates and minor sandstone; cobble to boulder volcanic conglomerates and volcanic sandstone*

LOWER CRETACEOUS

Albian

TAYLOR CREEK GROUP

LIZARD FORMATION
5 *Interbedded shale and muscovite-rich arkosic sandstone; minor pebble conglomerate*

DASH CONGLOMERATE
4b *Chert-pebble conglomerate, cherty sandstone, siltstone, shale and minor tuff*

PARADISE FORMATION
4a *Siltstone, shale, sandstone and polymict conglomerate*

MIDDLE JURASSIC TO LOWER CRETACEOUS

RELAY MOUNTAIN GROUP

BERRIASIAN TO BARREMIAN
2c *Interbedded grey to greenish grey siltstone, shale, and sandstone; minor conglomerate and limestone; coquina beds locally abundant*

UPPER OXFORDIAN TO UPPER TITHONIAN
2b *Dark grey to green sandstone, siltstone, minor conglomerate; pelecypods and belemnites locally common*

CALLOVIAN TO LOWER OXFORDIAN
2a *Dark grey siliceous shale interbedded with siltstone and calcarenite; sandstone, grit and volcanic conglomerate*

2 *Undivided*

LOWER JURASSIC TO MIDDLE JURASSIC

HETTANGIAN TO LOWER BAJOCIAN
1c *Dark grey to black, variably calcareous shale, brown sandstone, siltstone and conglomerate*

TYAUGHTON GROUP

UPPER NORIAN
1b *Limestone conglomerate; green-and-grey sandstone, shale, conglomerate, and conglomeratic sandstone*

MIDDLE AND UPPER NORIAN
1a *Red conglomerate; grit and conglomeratic sandstone; massive to thickly bedded limestone*

UPPER TRIASSIC

LOWER TO MIDDLE NORIAN AND (?) OLDER

CADWALLADER GROUP
uTC *Mafic volcanics and volcaniclastics; conglomerate; limestone and grey to black argillite*

MIDDLE TRIASSIC TO LOWER JURASSIC AND (?) OLDER

BRIDGE RIVER COMPLEX
BRC *Undivided ribbon and massive cherts, greenstone, argillaceous mélange, argillite and limestone, with minor altered gabbro to diorite and serpentinite; BRCv – greenstone, mafic pillow lavas and volcaniclastic rocks; BRCl – white, massive, finely crystalline limestone*

NORTHEAST OF THE YALAKOM FAULT

MIOCENE AND/OR PLIOCENE

9 *Plateau lava, basalt flows*

EOCENE

8a *Aphyric to porphyritic andesitic to dacitic flows*

8r *Rhyolite flows and flow breccias*

8s *Volcanic sandstone, siltstone and conglomerate*

UPPER CRETACEOUS

Cenomanian and (?) younger

7 *Andesitic volcanic breccia lapilli tuff and lahar; epiclastic sediments*

LOWER CRETACEOUS

Hauterivian(?) to Albian

JACKASS MOUNTAIN GROUP

3ak Unit 3ak: *Arkosic sandstone, conglomeratic sandstone, siltstone and shale*

3cg Unit 3cg: *Polymict boulder to cobble conglomerate, conglomeratic sandstone and sandstone*

3f Unit 3f: *Volcanic-lithic sandstone and conglomerate, siltstone and shale with abundant fossil plant remains*

3v Unit 3v: *Massive, green volcanic-lithic sandstone, minor siltstone and shale*

MIDDLE JURASSIC

BAJOCIAN
mJs *Grey siltstone to fine-grained sandstone*

PLUTONIC ROCKS

EOCENE AND OLDER

P *Hornblende plagioclase porphyry and hornblende-biotite-plagioclase porphyry; equigranular quartz diorite to quartz monzonite*

Peridotite, harzburgite, dunite, serpentinized peridotite

SYMBOLS

Geologic contact (defined, approximate, assumed)

Unconformity (defined, assumed)

Bedding, tops known (horizontal, inclined, vertical, overturned)

Bedding, tops unknown (horizontal, inclined, vertical)

Anticline, syncline (upright)

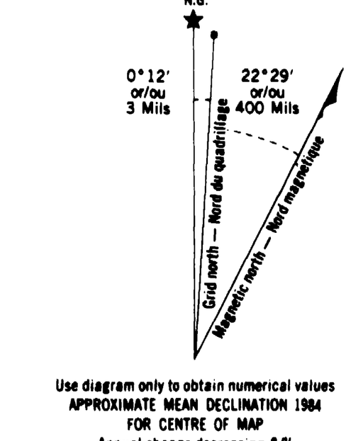
Anticline, syncline (overturned)

Thrust fault (defined, approximate, assumed) (teeth in direction of dip and indicate upthrust side)

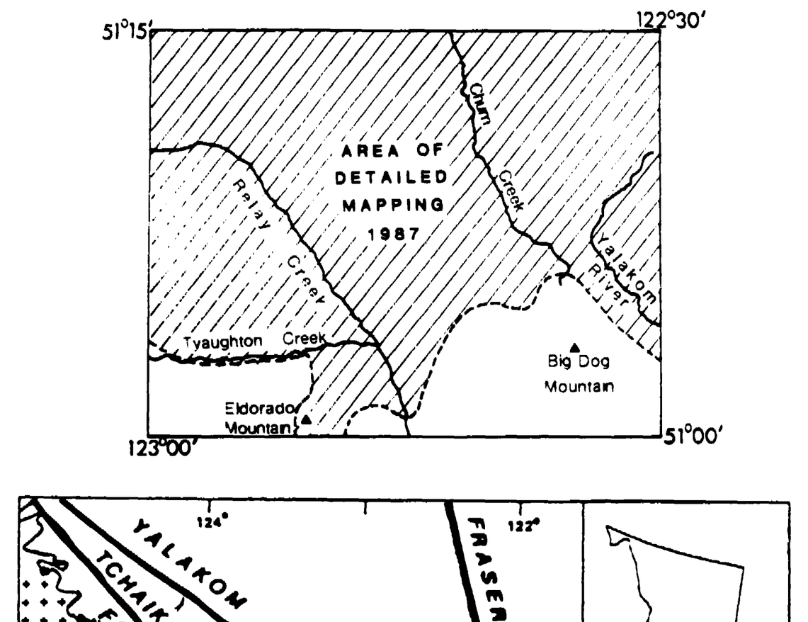
High angle fault (defined, approximate, assumed)

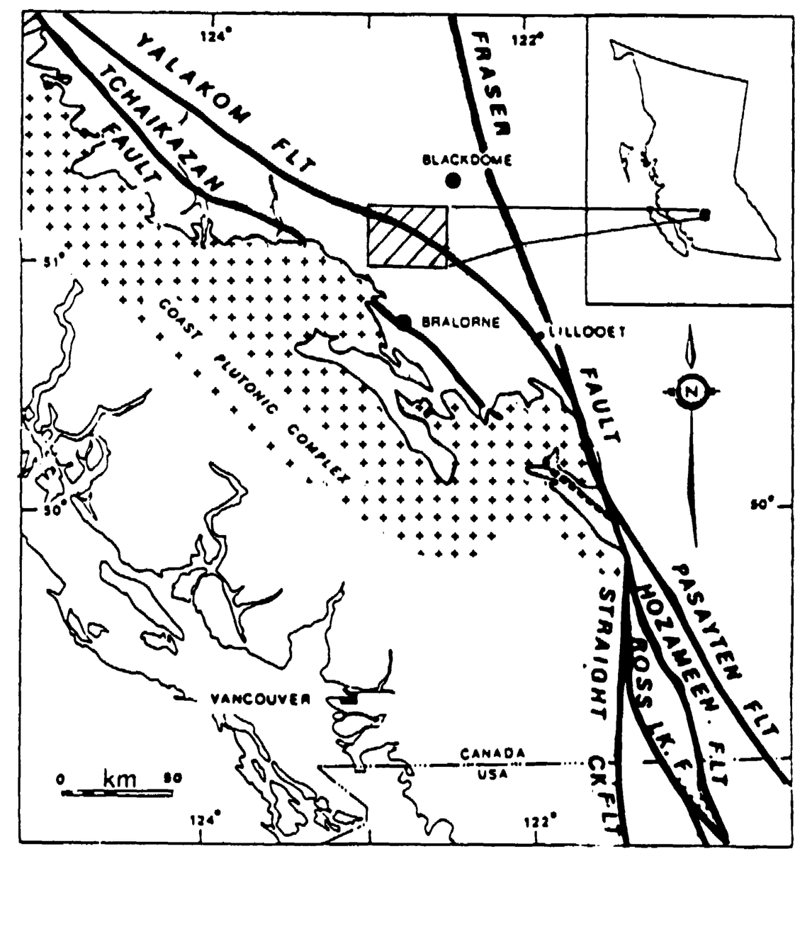
Normal fault (defined, approximate, assumed) (solid circle indicates downthrown side)

Strike-slip fault (defined, approximate, assumed) (arrows indicate relative sense of movement)



Use diagram only to obtain numerical values
APPROXIMATE MEAN DECLINATION 1984
FOR CENTRE OF MAP
Annual change decreasing 8.9′





Scale 1:50 000 Échelle

Miles 1 0 1 2 3 Miles

Metres 1000 0 1000 2000 3000 4000 Metres

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9B. MINERAL POTENTIAL OF THE NOAXE CREEK MAP AREA

NTS 920/2

Compilation by J.K. Glover and P. Schiarizza

Includes data from assessment reports, MINFILE and R.G.S. 3-1979, N.T.S. 920
Rock samples for lithogeochemistry were collected by
J.K. Glover, P. Schiarizza, J. Riddell and D. Payne, 1987

STREAM SEDIMENT GEOCHEMISTRY

I.D.	Zn	Cu	Pb	Ni	Co	Ag	Mo	W	As	Hg
1023	45	27	3	49	11	0.1	1	1	2.0	80
3026	86	51	8	196	25	0.1	1	1	60.0	400
3027	76	40	1	445	36	0.1	1	1	6.5	370
3028	80	39	5	190	23	0.1	2	30	15.0	6000
3029	68	39	3	29	16	0.1	1	1	13.0	210
3030	112	41	4	21	15	0.1	1	1	10.0	210
3031	64	19	3	37	13	0.1	1	1	4.0	200
3032	61	32	3	76	15	0.1	1	1	3.5	150
3033	78	86	4	174	20	0.1	1	1	12.0	200
3034	80	95	1	180	20	0.1	2	1	11.0	990
3035	78	38	1	99	21	0.1	1	1	2.5	120
3036	115	29	2	36	16	0.1	2	1	5.5	110
3037	140	41	2	200	23	0.1	2	1	11.0	380
3038	92	48	3	92	23	0.1	2	1	7.0	220
3039	74	30	2	200	22	0.1	1	1	12.0	370
3040	64	25	3	42	14	0.1	1	1	4.5	320
3042	64	22	3	38	10	0.1	1	1	7.0	250
3043	60	26	2	34	12	0.1	1	1	5.0	300
3044	68	29	3	72	15	0.1	1	1	5.5	410
3046	132	44	5	39	18	0.1	2	1	17.0	900
3047	33	15	1	1700	70	0.1	1	1	11.0	80
3048	30	14	1	1650	66	0.1	1	1	9.5	80
3049	34	21	1	1800	77	0.1	1	1	33.0	110
3051	86	32	3	210	24	0.1	1	1	7.0	2000
3052	74	30	1	550	37	0.1	1	1	3.5	330
3053	92	26	3	260	24	0.1	1	1	6.5	600
3054	72	400	2	28	17	0.1	3	1	19.0	180
3055	70	390	2	24	16	0.1	3	1	21.0	230
3056	60	22	2	26	13	0.1	1	1	4.0	60
3057	56	18	1	26	8	0.1	1	1	3.0	80
3058	60	24	3	26	11	0.1	1	1	5.0	100
3059	70	26	4	24	13	0.1	1	1	3.5	90
3060	52	19	4	32	6	0.1	1	1	3.0	370
3062	56	26	4	44	11	0.1	1	1	3.5	90
3063	44	19	1	1500	63	0.1	1	1	5.0	80
3064	49	20	2	67	11	0.1	1	1	3.0	60
3065	54	23	3	62	12	0.1	1	1	3.5	50
3066	28	15	1	1900	72	0.1	1	1	5.0	50
3085	48	19	2	37	14	0.1	1	1	0.5	90
5333	30	14	1	1400	68	0.1	1	1	3.5	50
5334	62	24	3	115	16	0.1	1	1	5.5	1400
5335	68	39	2	525	37	0.1	1	1	7.0	470
5336	76	34	4	120	20	0.1	1	1	6.5	1100
5337	71	44	1	435	34	0.1	1	1	6.0	400
5338	74	38	5	200	20	0.1	1	3	5.0	380
5339	68	38	1	440	33	0.1	1	1	5.5	390
5340	56	23	5	915	51	0.1	1	1	5.0	420
5342	46	26	2	1100	57	0.1	1	1	5.5	240
5343	136	39	6	33	14	0.1	2	1	11.0	200
5344	87	42	5	75	18	0.1	1	1	31.0	9200
5345	135	43	6	21	14	0.1	3	1	14.0	230
5347	83	27	3	58	17	0.1	2	1	7.5	260
5348	64	29	4	28	13	0.1	1	1	3.5	1100
5349	98	37	4	55	17	0.1	1	1	5.0	200
5350	82	33	3	89	18	0.1	1	1	5.5	240
5351	88	29	4	56	18	0.1	1	1	3.0	330
5352	93	29	4	87	17	0.1	1	1	5.0	200
5353	78	24	3	64	15	0.1	1	1	4.5	310
5354	84	28	4	69	16	0.1	1	1	6.5	180
5355	75	61	2	57	19	0.1	1	1	4.0	80
5356	80	48	4	45	17	0.1	1	1	16.0	1200
5357	62	37	4	34	13	0.1	1	1	4.0	170
5358	76	43	3	126	25	0.1	1	1	9.5	110
5359	79	36	3	126	24	0.1	1	1	8.0	190
5360	88	38	1	154	28	0.1	1	1	5.0	200
5362	78	48	4	82	18	0.1	1	1	16.0	450
5363	71	33	3	93	19	0.1	1	1	7.5	240
5364	68	27	4	49	16	0.1	1	1	5.0	160
5365	48	17	3	20	9	0.1	2	1	2.0	110
5366	55	24	3	25	10	0.1	1	1	2.5	100
5367	63	23	4	33	11	0.1	1	1	5.0	130
5394	85	31	4	98	22	0.1	1	1	3.5	120
5400	57	20	3	28	12	0.1	1	1	2.5	100
5403	71	29	5	49	15	0.1	1	1	4.0	180
5404	68	28	5	53	12	0.1	2	1	3.0	160
5405	64	25	1	49	13	0.1	1	1	5.5	140
5406	64	25	2	28	12	0.1	1	1	3.0	160
5407	61	22	2	21	11	0.1	1	1	2.5	170
5408	60	25	3	17	13	0.1	1	1	1.0	100
5409	67	30	2	18	12	0.1	1	1	3.0	60
5410	57	15	1	34	11	0.1	2	1	2.0	2000
5476	162	70	9	24	17	0.1	3	1	115.0	270
5477	120	53	11	71	16	0.1	2	1	215.0	500
5478	260	43	4	24	14	0.1	2	1	9.0	140
5479	129	37	2	18	15	0.1	1	1	9.5	250
5482	123	41	3	16	13	0.1	2	1	8.5	170
5483	100	40	1	14	17	0.1	1	1	9.0	110
5484	96	41	8	15	13	0.1	1	1	50.0	100
5485	65	30	1	7	11	0.1	1	1	10.0	120
5486	82	64	4	44	20	0.1	1	1	2.0	160
5548	131	54	4	22	15	0.1	1	1	11.0	100
5550	87	42	9	28	15	0.1	1	1	13.0	90
5551	84	40	8	26	15	0.1	1	1	11.0	100
5552	120	50	8	26	18	0.1	2	1	10.0	100
5553	186	54	6	24	16	0.1	3	1	17.0	110
5554	118	46	5	27	16	0.1	2	1	10.0	100
5555	72	32	3	38	12	0.1	1	1	6.0	120
5556	66	23	3	30	12	0.1	1	1	2.5	250
5557	77	28	4	30	11	0.1	1	1	4.5	290
5558	82	42	4	40	17	0.1	1	1	12.0	480
5559	85	56	5	29	14	0.1	1	1	15.0	170
5560	76	1 22	3	60	16	0.1	2	1	11.0	930
5562	92	50	8	32	13	0.1	1	1	13.0	120
5563	99	44	7	46	17	0.1	1	1	11.0	130
5571	54	23	4	24	11	0.1	1	1	5.0	270
5572	62	36	1	17	14	0.1	1	1	6.0	60
5573	60	37	2	21	14	0.1	1	1	3.5	80
5574	66	42	1	22	16	0.1	2	1	2.5	60
5633	61	23	2	31	15	0.1	1	1	2.0	60

ZN ZINC BY ATOMIC ABSORPTION SPECTROSCOPY (ppm)
CU COPPER BY ATOMIC ABSORPTION SPECTROSCOPY (ppm)
PB LEAD BY ATOMIC ABSORPTION SPECTROSCOPY (ppm)
NI NICKEL BY ATOMIC ABSORPTION SPECTROSCOPY (ppm)
CO COBALT BY ATOMIC ABSORPTION SPECTROSCOPY (ppm)
AG SILVER BY ATOMIC ABSORPTION SPECTROSCOPY (ppm)
AS ARSENIC BY FLAMELESS SPECTROSCOPY (ppm)
MO MOLYBDENUM BY ATOMIC ABSORPTION SPECTROSCOPY (ppm)
HG MERCURY BY FLAMELESS SPECTROSCOPY (ppb)

LITHOGEOCHEMISTRY

1 SAMPLE NO.	2 TYPE	3 ALTN	4 AU ppb	5 AG ppm	6 CU ppm	6 PB ppm	6 ZN ppm	6 NI ppm	6 MO ppm	7 HG ppb	6 AS ppm	6 SB ppm
G01	VN	QCCa	<20	<0.5	31	7	95	115	<10	600	63	2
G02	VN	QCCa	<20	<0.5	20	24	200	13	<10	725	22	10
G03	DISS	Ca	31	<0.5	24	8	43	61	<10	810	11	4
G04	DISS	Ca	<20	<0.5	22	3	36	25	<10	515	15	3
G05	DISS	Po	<20	<0.5	400	12	12	37	<10	110	13	0.9
G06	DISS	PyPo	<20	<0.5	173	3	20	12	<10	120	6	<0.5
G07	DISS	Ca	<20	<0.5	40	8	58	57	<10	3400	10	7
G08	VN	QC	21	<0.5	14	3	27	25	<10	20	3	2
G09	DISS	Li	<20	<0.5	4	<3	21	0.14%	<10	30	8	0
G10	DISS	Li	<20	<0.5	5	<3	28	0.16%	<10	29	11	5
G11	DISS	Li	<20	<0.5	3	23	20	0.10%	<10	20	6	10
G12	DISS	Li	<20	<0.5	18	<3	40	0.14%	<10	25	5	0.7
G13	DISS	Li	<20	<0.5	5	3	10	730	<10	10	2	<0.5
G14	DISS	Li	<20	<0.5	7	<3	30	0.12%	<10	62	1	<0.5
G15	DISS	Li	21	<0.5	5	<3	32	530	<10	17000	133	820
G16	DISS	PyCs	62	<0.5	257	<3	28	7	<10	15	10	5
G17	DISS	Ca	<20	<0.5	30	7	82	190	<10	1880	18	6
G18	DISS	Ca	23	<0.5	23	4	83	34	<10	130	3	1
G19	DISS	PyCa	<20	<0.5	41	4	115	18	<10	43	1	<0.5
G20	DISS	Ca	<20	<0.5	36	180	760	12	<10	830	27	18
G21	DISS	PyCs	<20	<0.5	27	5	54	5	<10	10	22	7
G22	DISS	PyCs	<20	<0.5	74	4	34	3	<10	<10	9	2
G23	DISS	Py	30	<0.5	90	6	28	15	<10	25	3	1
G24	DISS	Si	<20	<0.5	13	<5	38	0.11%	<10	<10	<1	<0.5
G25	BX	Fe	<20	<0.5	5	22	34	4	<10	300	3	0.9
P01	DISS	Py	<20	<0.5	299	4	10	43	<10	323	3	0.5
P02	DISS	Ca	<20	<0.5	32	7	72	20	<10	231	12	0.8
R01	VN;BX	Q;Fe	36	<0.5	9	12	84	4	<10	30	24	<0.5
R02	VN;BX	Q;Fe	<20	<0.5	7	9	50	2	<10	52	22	<0.5
R03	DISS	Fe	<20	<0.5	43	6	81	<3	<10	<10	41	5
R04	DISS	Py	<20	<0.5	43	9	99	22	<10	32	16	0.5
R05	DISS	Ca	<20	<0.5	34	13	63	20	<10	1350	430	26
R07	DISS	SiPy	<20	<0.5	107	7	33	43	<10	172	5	<0.5
R08	DISS	Si	<20	<0.5	257	5	15	7	<10	15	5	0.5
R09	DISS	Py	<20	<0.5	35	9	74	25	<10	92	3	0.5
R10	DISS	PySi	<20	<0.5	135	9	70	33	<10	60	5	0.7
S01	DISS	Li	<20	<0.5	17	<5	54	0.15%	<10	16	6	0.5
S02	VN	QC;Li	<20	<0.5	3	<5	20	0.17%	<10	<10	2	<0.5
S03	VN	Q;Li	<20	<0.5	31	<5	30	0.11%	<10	30	11	<0.5
S04	VN	Ma	<20	<0.5	45	<5	64	182	<10	310	1	0.5
S05	DISS	Li	26	<0.5	10	<5	25	800	<10	380	400	43
S06	DISS	LI	<20	<0.5	5	<5	33	0.15%	<10	2750	2	3
S07	DISS	CaPy	<20	<0.5	15	13	58	16	<10	850	11	10
S08	DISS	CsPy	<20	<0.5	29	26	48	6	<10	<10	8	5
S09	DISS	Py	36	<0.5	26	7	49	23	<10	<10	2	<0.5
S10	DISS	Py	34	<0.5	233	8	49	20	<10	<10	4	<0.5
S12	DISS	CaPo	<20	<0.5	76	7	78	40	<10	422	11	3
S13	DISS	PyPo	20	<0.5	530	6	37	47	10	176	3	<0.5
S14	DISS	PyPo	<20	<0.5	540	3	14	46	<10	78	6	1
S15	DISS	Ca	27	<0.5	18	3	30	4	<10	325	12	0.7
S16	-	-	<20	<0.5	40	12	93	40	<10	15	4	0.5

1. ALL SAMPLES WERE TAKEN IN SITU
2. VN = HYDROTHERMAL VEIN; DISS = DISSEMINATED MINERALIZATION OR PERVASIVE ALTERATION; BX = BRECCIA
3. Q = QUARTZ; C = CALCITE; Py = PYRITE; Po = PYRRHOTITE; Ma = MAGNESITE Ca = CARBONATE; Si = SILICIFICATION; Fe = OXIDIZED LIMONITIC GOSSAN; Cs = CALC-SILICATE ALTERATION; Li = LISTWANITE - CARBONATE-ALTERED SERPENTINITE +/- FUCHSITE
4. AU BY STANDARD FIRE ASSAY/ATOMIC ABSORPTION SPECTROSCOPY
5. AG BY STANDARD FIRE ASSAY
6. PB, ZN, CU, NI, MO, AS, AND SB BY ATOMIC ABSORPTION
7. HG BY COLD VAPOUR/ATOMIC ABSORPTION SPECTROSCOPY

MINERAL OCCURRENCES

Minfile No.	Name	Type	Commodities
	Eldorado Nickel	disseminated	Ni
	Big Sheep Mt.	epithermal	Au
	Upper Relay Ck.	disseminated	Au
12	Elizabeth	Vein	Au,Ag,Pb,Zn
17	Silverquick	Shear zone	Hg
18	Tungsten Queen	Vein	W,Sb,Hg
20	Tungsten King	Vein	W,Sb,Hg
23	Manitou	Shear zone	Hg
26	Bonanza (Robson)	Vein	Au,Ag,Sb,Pb,Zn,Cu
47	*Poison Mountain	Porphyry	Cu,Mo,(Au,Ag)
59	Mugwamp (Relay Creek)	Shear zone	Hg,Sb
64	XYZ	Porphyry	Cu,Mo
65	ABC	Porphyry	Cu

*Published reserves of 175 million tonnes @ 0.33% copper, 0.015% molybdenum and 0.3g/tonne gold (Seraphim, R.H. and Rainboth, W., 1976: Poison Mountain *in* Porphyry Deposits of the Canadian Cordillera, The Canadian Institute of Mining and Metallurgy, Special Volume 15 page 323).

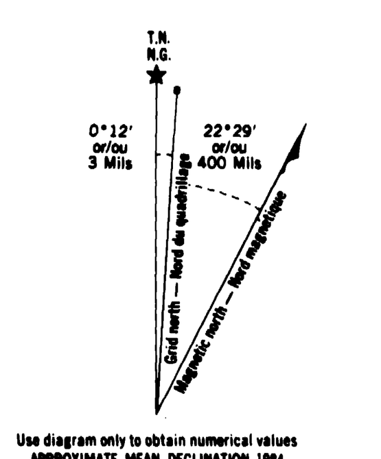
SYMBOLS

HYDROTHERMAL ALTERATION

- Carbonate alteration with minor clay alteration, sericitization and/or silicification; biotite and chlorite-epidote alteration................
- Listwanite: carbonate-altered serpentinite with quartz-calcite veins and local fuchsite..
- Porphyry intrusion.. P
- Mineral occurrence: accuracy of location within radius of 500 metres....
- Lithogeochemical sample...
- Stream sediment sample..

Scale 1:50 000 Échelle

Miles 1 0 1 2 3 Milles
Metres 1000 0 1000 2000 3000 4000 Mètres



Use diagram only to obtain numerical values
APPROXIMATE MEAN DECLINATION 1984
FOR CENTRE OF MAP
Annual change decreasing 8.9'