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EXPLORATION

NTS: 104K/11

WESTERN CANADA

FILMED

ASSESSMENT REPORT

DIAMOND DRILLING ON

TULSEQUAH CHIEF CROWN GRANT

ATLIN MINING DISTRICT, B.C.

LATITUDE: 58°43'

LONGITUDE: 133°35'

24 FEBRUARY 1988

GEOLOGICAL BRANCH M.J. CASSELMAN
ASSESSMENT REPORT

17,137

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COMINCO LTD.

EXPLORATION

WESTERN CANADA
24 February 1988

ASSESSMENT REPORT
TULSEQUAH CHIEF CROWN GRANT

SUMMARY

Drill hole TC-87-5 was drilled in November, 1987 to test the down dip extension of the Tulsequah Chief upper deposits. The hole intersected the mineral horizon from 2094.5 to 2307 with a significant interval of mineralization over 13.5 ft. from 2102-2115.5 grading: 1.31% Cu, 1.08% Pb, 6.03% Zn, 2.48 oz/t Ag and 0.082 oz/t Au.

The drill hole showed that the upper deposits which previous workers interpreted to pinch out on the 5900 mining level to be only cut off by a diorite dyke and to continue below the dyke.

INTRODUCTION

A joint venture between Cominco Ltd. and Redfern Resources was convened March 25, 1987 to explore the Tulsequah Chief property.

Two phases of field work were completed in 1987. Phase I from June 22 to August 5 mapped the area enclosing the Chief deposits (Central Area) at 1:1000 scale and the surrounding property at 1:2500 scale. Phase II from September 15 to December 3, drill tested downward extensions of the mineral horizon hosting the Chief deposits.

Drilling was carried out on the Tulsequah Chief deposits by Connors Drilling of Kamloops, B.C. using two BBS-37A drills. A total of 5 NQ drill (Plate 87-3) holes were completed to target depths. One other hole was lost short of its target. A total of 11561 feet was drilled. Core recovery averaged 98% + in mineralized and unmineralized sections.

Connors ran two shifts which due to dwindling daylight hours varied from 11 and 13 hours in the beginning to 8.0 and 16.0 hours at the end.

Drill site locations were mostly steep and heavily timbered. All sites required brush slashing and tree falling with some cribbing to create level platforms for the drill. Sites normally took 2 days to prepare.

Moves between drill sites were by a Bell 206A helicopter and normally took 2 to 2.5 days and 15-18 hours of helicopter time due in combination to amount of material to move, steep terrane and short days.

2.

Ground conditions for drilling were generally good except within the outer 200 feet of the diorite complex where ground was commonly heavily fractured, and in major fault zones.

Plastic pipe was installed in some holes in case later down hole geophysics was required.

The diamond drilling was supervised by M. Casselman and H. Kang.

LOCATION AND ACCESS

The property is situated on the east side of the Tulsequah River on map sheet 104K/11 in northwestern B.C. and is centered on latitude 58°43' and longitude 133°35' (Fig.1). Access to the area is by air from Atlin 100 km north or by water/air from Juneau 64 km southwest to a gravel airstrip along the Tulsequah River, 10 km south of the Tulsequah Chief mine site where the base camp was located.

TOPOGRAPHY

The property is situated on the west side of Mount Eaton at elevations between 50 and 1850 m above sea level. Topography was molded by large valley and smaller alpine glaciers. Slopes are moderate to steep with cliffs ranging up to several tens of metres in height common. Lower slopes to 1100 metres are covered by spruce and hemlock. Slide and blow down areas common in the forests are covered by thick growths of devils club, alder and stinging nettles.

PROPERTY AND OWNERSHIP

The property consists of the following claims (Fig. 2):

Located Claims

<u>Name</u>	<u>Record No.</u>	<u>Recorded</u>	<u>Assessment Work Due</u>
Ross	5226	May 3, 1963	May 30, 1998
Pat	5225	May 3, 1963	May 30, 1998
Birds	5224	May 3, 1963	May 30, 1998
Co1	995	Mar 4, 1980	Mar 4, 1998
Co2	996	Mar 4, 1980	Mar 4, 1998
Co4	999	Mar 4, 1980	Mar 4, 1998
SEQ 1	933	Jan 28, 1980	Jan 28, 1998
SEQ 2	934	Jan 28, 1980	Jan 28, 1998
Phil 1	2885	May 8, 1987	May 8, 1998
Phil 2	2886	May 8, 1987	May 8, 1998
Phil 3	2887	May 8, 1987	May 8, 1991
Phil 4	2888	May 8, 1987	May 8, 1991

3.

Crown Grants

<u>Name</u>	<u>Lot No.</u>	<u>Area (Ha)</u>	<u>1986 Mineral Land Taxes</u>
River Fr	5669	7.99	7.91
Tulsequah Bonanza	5668	20.90	20.69
Tulsequah Bald Eagle	5676	14.16	14.02
Tulsequah Chief	5670	20.90	20.69
Tulsequah Elva Fr	5679	9.70	9.60

PREVIOUS WORK

The Tulsequah Chief deposits were discovered by W. Kirkham of Juneau in 1923 while prospecting. He located a lense of high grade barite, pyrite sphalerite, galena, chalcopryrite outcropping in an east-west trending gulley just above the 6500 level adit. Development of this showing between 1923 and 1929 attracted the attention of prospectors to the promise of the area. In 1929 about 40 prospectors were in the area which resulted in the discovery of the Big Bull deposit by V. Manville, the Potlatch (Sparling) and Banker showings and the Whitewater (Polaris Taku) deposit. The Erickson-Ashby deposit was found in 1930.

Cominco Ltd. acquired the Tulsequah Chief and Big Bull deposits in 1946 and production was started in 1951 with an average of 530 tons per day mined. Mining continued until 1957 when the mine was closed due to low metal prices.

The Tulsequah Chief deposits lay dormant until 1987 when the convening of a joint venture with Redfern Resources led to the present work program.

REGIONAL GEOLOGY

The Tulsequah Chief property is situated on the western edge of the Intermontane Belt adjacent to the Coast Plutonic Complex and north of the Stikine Arch. Kerr in 1948 published a 1:50,000 scale geological map of the Taku River area. Souther in 1971 mapped at 1:250,000 scale the Tulsequah area. Monger in 1980 showed the relationship of rocks in the Tulsequah-Taku area to regional features of the Cordillera using Souther's data. Souther and Monger showed the Tulsequah Chief deposits to lie within the basal part of the Upper Triassic Stuhini Group thought to be at least 12000 feet thick and to overlie fossiliferous limestones and quartzites believed to be of Permian age.

Payne, Nelson and Gosson in 1981 mapped at 1:50,000 scale much of the Tulsequah-Taku area as part of a regional exploration program. They suggested the area to be more strongly folded and faulted than previously recognized. They interpreted the Paleozoic rocks to be broken by several major faults into separate lithotectonic blocks representing different stratigraphic levels in the volcanic pile. They also interpreted the rocks hosting the Chief deposits to occupy the central part of a steeply north plunging anticline and thus to underlie Pennsylvannian-Permian limestone units rather than overlying them as originally thought.

4.

Nelson and Payne in 1984 collected middle Pennsylvannian-Permian fossils in these limestones and assigned the rocks hosting the Chief deposits to a Pennsylvannian-Permian age group they termed Mount Eaton Group.

Payne and Sisson working for Cominco in 1987 refined Payne, Nelson and Gosson's 1981 mapping. For details of this work see assessment report by Payne and Sisson, 1988.

Mineral deposits in the area include Tulsequah Chief, Big Bull, Ericksen-Ashby and Polaris Taku. The Chief and Bull deposits consist of massive sphalerite-galena-chalcopryrite-barite-pyrite lenses in altered dacite rhyodacite fragmentals. The Erickson-Ashby showing contains pods of sphalerite-galena-pyrite in and near felsic volcanic lenses in a chert-limestone sequence in andesite volcanics. The Polaris Taku deposit contains discontinuous quartz-carbonate zones with Au-arsenopyrite-stibnite-pyrite hosted by volcanic and sedimentary rocks and possibly minor ultramafic intrusives. Smaller showings include the Banker and Sparling which contain Au-Ag-sphalerite-galena-chalcopryrite-tetrahedrite-arsenopyrite-stibnite hosted by quartz veins in folded shattered limestone-dolomite, and sheared andesite volcanics, respectively.

PROPERTY GEOLOGY

In 1987 the entire property was mapped on two scales: 1:1000 scale mapping over the Central Area which includes the Tulsequah Chief deposits, and 1:2500 scale mapping on the remainder of the property.

1:2500 scale mapping showed the Tulsequah property to be underlain by rocks belonging to two different lithotectonic blocks separated by the Chief fault. The rocks are primarily andesite flows and pyroclastics with lesser clastic, mixed limestone-chert-clastic, and dacite to rhyodacite pyroclastic units. Rocks west of the Chief fault resemble those east of the fault except for a much higher level of deformation and penetrative foliation. All layered rocks are intruded by numerous dykes and plugs including Paleozoic andesites/diorites and dacites, Mesozoic granodiorites, quartz monzonites, diorites and pyroxenites and Tertiary rhyodacites, andesites/diorites and quartz monzonites.

1:1000 scale mapping in the Central Area (Plate 87-3) showed it to be broken into four separate blocks by north-south striking faults designated the Chief, 4400E and 5100E faults. The Tulsequah Chief deposits are hosted by a conformable NE-SW striking, steeply northwest dipping succession of volcanics and minor sediments from oldest to youngest:

5.

1. andesite and dacite pyroclastics, mixed limy clastics tuffs, and limestone;
2. undifferentiated andesite flows, flow breccias and pyroclastics;
3. felsic pyroclastics - primarily dacites and rhyodacites with minor dacite andesites;
4. andesite pyroclastics - minor tuffaceous clastics

The layered rocks have been intruded by a large diorite plug, sill, dyke complex and dacite plugs and dykes of suspected Paleozoic age (subvolcanic intrusives), and rhyodacite dykes of suspected Eocene age.

The Chief deposits occur in one horizon designated the mineral horizon which is located in the lower part of a large lenticular mass of felsic pyroclastics. The mineral horizon comprises an intermixed assemblage of strongly pyritized (5-75%), sericitized and silicified dacite tuffs, muds, cherty tuffs and minor cherts and lapilli tuffs which can be traced on surface for 700 metres across 3 fault blocks. The surface expression of the mineral horizon appears much less contorted than seen from geological reconstructions on the 5200 and 5400 mining levels.

Mineralization is localized in 3 areas in the mineral horizon designated the upper and lower deposits and F zone areas. The deposits are stratigraphically controlled and occur as numerous lenses with varying proportions of sphalerite, galena, chalcopyrite, barite, gypsum, Au and Ag. Total production was 625,781 tons. Current reserves are 780,000 tons grading 0.07 oz/t Au, 2.9 oz/t Ag, 1.3% Cu, 1.6% Pb and 8.0% Zn.

The Central Area contains two large alteration zones interpreted to be feeder pipes; one underlies the Chief deposits (Main Alteration zone) and the other surrounds the 5200 and 5400 level portals (5200 Portal Alteration zone). These zones have developed at different stratigraphic levels.

DIAMOND DRILLING

Drill hole TC-87-5 started November 7, 1987 and was completed to a depth of 2414 feet on November 25, 1987. It was inclined at -50° with an azimuth of 135° (Plate 87-3). The drill hole was targeted to test the down dip extension of the upper deposits previously interpreted to pinch out at the 5900 mining level. It intersected the mineral horizon at 2094.5 feet and intersected 13.5 feet of: 1.31% Cu, 1.08% Pb, 6.03% Zn, 2.48 oz/t Ag and 0.08 oz/t Au, from 2102-2115.5 feet.

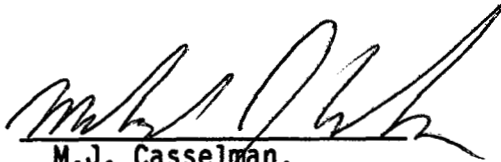
The drill hole was logged by H. Kang and is described in detail in Appendix B. The geochemical and assay data is in Appendix C.

6.

CONCLUSIONS

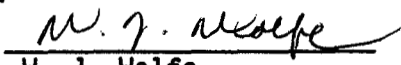
Drill hole TC-87-5 showed that the upper deposits, previously interpreted to pinch-out at the 5900 mining level, have only been cut off by a diorite dyke and continue below the dyke.

Report by:



M.J. Casselman,
Project Geologist

Endorsed for
Release by:



W. J. Wolfe,
Manager, Exploration-
Western Canada.

MJC/pm
Distribution:

7.

REFERENCES

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- Monger, J.W.H., Price, R.A., and Templeman-Kluit, D.J., 1982. Tectonic accretion and origin of two major metamorphic-plutonic belts in the Canadian Cordillera. Geology, V. 10, pp 70-75.
- Nelson, J. and Payne, J.G., 1984. Paleozoic volcanic assemblages and volcanogenic massive sulfide deposits near Tulsequah, British Columbia. Can. J. Earth Sci., V. 21, pp 379-381
- Payne, J.G., 1979. Geology of the Erickesen-Ashby Deposit. Unpublished report for Anglo Canadian Mining Corp., Vancouver, B.C.
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APPENDIX A
STATEMENT OF EXPENDITURES

Diamond Drill Hole TC-87-5 was part of a 11561 foot drill program from September 14 to November 29, 1987.

Salaries:

M.J. Casselman - September 16-30; October 6-20, 26-31			
	November 1-5	@\$230/day	\$9,430
M.J. Osatenko - November 1-15		@\$230/day	3,450
H. Kang - September 14 - November 29		@\$115/day	8,855
A.P. Roberts - September 28-30, October 1-11,			
	October 26-31; November 1-12	@\$170/day	5,270
A.L. MacGregor - September 14-30; October 1-2		@\$170/day	3,230
D. Brulotte - October 1 - November 29		@\$125/day	<u>7,500</u>
			37,735

Communications 16,238

Drill Site Preparation 18,331

Surveying 2,363

Diamond Drilling 484,420

Geochemistry and Assaying 12,349

Transportation - Helicopter	158,821	
- Fixed Wing	<u>190,067</u>	355,888

Camp Costs 62,956

Drafting and Report Writing 8,000

Expediting 17,720

Total: 1,010,000

Cost per foot drilling \$1,010,000 for 11,561 feet = \$87.36/ft.

Diamond drill hole TC-87-5 - cost = \$87.36 x 2414 feet = \$210,887.04

24 February 1988

APPENDIX B - Diamond Drill Hole Log

H. Kang - Geologist - 1986 B.Sc. U.B.C.
Core is stored at the camp on
Lot 5668 (Tulsequah-Bonanza claim)

Drill Hole Record

COMINCO

Property Tulseague District: Hole No. TC-87-5

Page 7 of 17

Footage		Description	FROM	TO	Length	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
From	To									

At 757 - 759 Core strongly fractured
 At 771 - 773 Grey/tan fine grained dacite (?) dykelets (2-10 cm thick)
 Contact/core axis angle 50-90 degrees
 At 773 - 778 Lower contact zone - grades into fine dacite tuff; locally bedded - bedding/core axis angle 75-80 degrees
 Fine tuff mixed with and hybridized by dacite dykelets (as described in 771 - 773).

778 - 1007.5 ANDESITE/DIORITE INTRUSIVE - AS DESCRIBED IN 395 - 445
 Dark green to pea-green, medium grained (locally fine to coarse), locally px-porphyrific.

At 789 - 790 Fault gouge/shear zone
 Shear/core axis angle 64 degrees
 At 804.5 - 807.5 Core moderately to strongly fractured with questionable slickensides - slick/core axis angle 5-10 degrees.
 At 841 - 844.5 Core strongly fractured/sheared - fault
 At 853 - 856.5 Core strongly fractured - fault.
 At 882 - 884 Core strongly fractured
 At 965 - 967.5 Breccia, dacitic fragments 0.5 - 4 cm matrix light green (inclusion?)
 At 977.0 - 977.5 Highly epidotized feldspar porphyry inclusion? or dyke
 At 996 - 1003 Inclusions of dacitic breccia and fine to medium grained dacitic material (inclusions).

Drill Hole Record

COMINDO

Property Tulsequah

District: _____

Hole No. TD-87-5

Page 9 of 17

Footage		Description	FROM	TO	Length	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
From	To									

At 1403 - 1586 Fault/fracture zone - core strongly fractured and gouged with strong calcite veining throughout; slickensides commonly visible throughout but difficult to determine orientation with respect to core axis because core is badly broken

At 1529 Slickenside/core axis angle 55 degrees

At 1581 Slickenside/core axis angle 25 degrees

At 1600 - 1688 Fault/fracture zone - core strongly fractured and gouged, gouge brecciated

At 1617 - 1632 1/2

Weakly fsp-porphyrific, hybridized dacite coarse fragmental rock (lapilli tuff) with subround, siliceous fragments.

Inclusion (xenolithic?)

Core badly fractured due to faulting

At 1660 - 1664 Slope Rhyodacite dyke

At 1684 1/2 - 1687

Slope rhyodacite dyke flow banding (core axis angle 45-50 degrees).

1709 - 1721

DACITE SUBVOLCANIC INTRUSIVE

Tan/grey, fine grained dacite, locally hybridized by dark green andesite intrusive; weak to moderate chlorite veining throughout, locally pyrite replaced; locally weak, fsp-porphyrific; pyrite coating on fracture surfaces common; core moderately fractured (2'3/ft.).

Drill Hole Record

COMINDO

Property Tulseague

District:

Hole No. TC-87-5

Page 16 of 17

Footage		Description	FROM	TO	Length	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
From	To									
2269	2307	MINERAL HORIZON - HEAVY PY ZONE Quartz, barite, sericite, pyrite rich (15 - 40%) fine grained rock; original rock was probably fine dacitic tuff; pyrite occurs as fine and coarse disseminations and fine blobs and layers; disseminated sphalerite 2 - 3%; bedding/foliation to core axis angle 5 - 25 degrees; locally mixed and hybridized by white/tan, bleached, originally rhyodacitic (?) intrusive rock.	2215.00	2220.00	5.00	96.	1.3	132.	15.	1650.
			2220.00	2225.50	5.50	102.	6.5	165.	52.	2720.
			2225.50	2230.00	4.50	274.	0.5	160.	128.	4630.
			2230.00	2235.00	5.00	280.	4.5	247.	227.	1640.
			2235.00	2240.00	5.00	148.	8.6	1230.	232.	471.
		At 2297 Bedding/foliation to core axis angle 35 degrees.	2240.00	2245.00	5.00	402.	25.8	7400.	690.	1137.
			2245.00	2250.00	5.00	458.	14.1	3190.	526.	1000.
			2250.00	2255.00	5.00	206.	2.5	250.	997.	1570.
			2255.00	2260.00	5.00	160.	0.2	85.	648.	1360.
			2260.00	2265.00	5.00	260.	5.6	592.	1930.	2160.
			2265.00	2269.00	4.00	162.	0.3	159.	681.	1730.
			2269.00	2275.00	6.00	336.	6.5	98.	436.	1340.
			2275.00	2280.00	5.00	244.	0.8	242.	1300.	2020.
			2280.00	2285.00	5.00	280.	11.4	340.	1130.	3060.
			2285.00	2290.00	5.00	352.	11.8	301.	247.	3150.
			2290.00	2295.00	5.00	220.	6.5	161.	62.	1240.
			2295.00	2300.00	5.00	176.	2.4	304.	40.	865.
2307	2365	ALTERED ANDESITE COARSE PYROCLASTIC - FOOTWALL ANDESITE White to tan, bleached, lapilli sized (2 - 40 mm) amygdaloidal fragments within grey to reddish brown, fine biotite-rich, tuffaceous matrix; amygdules within clasts are commonly pyrite replaced; 3 - 10% PY occurs as disseminations and in crude layers along foliation (after original bedding?) surfaces - foliation/core axis angle 40 - 50 degrees.	2300.00	2305.00	5.00	216.	2.5	120.	35.	1230.
			2305.00	2307.00	2.00	500.	3.5	183.	41.	1110.
			2307.00	2310.00	3.00	42.	0.0	19.	8.	97.
			2310.00	2315.00	5.00	40.	0.0	18.	5.	75.
			2315.00	2320.00	5.00	40.	0.4	32.	5.	417.
		At 2350 - 2351.5 Dark green, fine andesite dyke	2320.00	2325.00	5.00	36.	0.0	53.	11.	155.
		At 2359 - 2360 Dark green, fine andesite dyke.	2325.00	2330.00	5.00	40.	0.0	47.	7.	101.
			2330.00	2335.00	5.00	60.	0.4	122.	9.	578.
			2335.00	2340.00	5.00	76.	0.8	176.	4.	43.
			2340.00	2345.00	5.00	36.	0.7	91.	6.	35.
			2345.00	2350.00	5.00	0.	0.0	17.	5.	54.
			2350.00	2355.00	5.00	54.	0.5	90.	12.	90.
			2355.00	2360.00	5.00	42.	0.5	75.	5.	111.

Drill Hole Record

COMINCO

Property Tulsequah District: _____ Hole No. TC-87-5 Page 17 of 17

Footage		Description	FROM	TO	Length	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
From	To									

2360.00 2365.00 5.00 98. 0.1 108. 15. 135.

2365 - 2385 ANDESITE INTRUSIVE
Dark green, fine grained, massive, homogeneous with local, calcite/magnetite veins.

At 2380 - 2387 Core strongly fractured.
2385 - 2392 ALTERED ANDESITE COARSE PYROCLASTIC
As described in 2387 - 2365.

2392 - 2411 ANDESITE INTRUSIVE
Dark green, fine grained, massive.
As described in 2365 - 2385.
Core strongly fractured.

2411 - 2414.0 ALTERED ANDESITE COARSE PYROCLASTIC
< EOH > As described in 2387 - 2365.
Core strongly fractured and gouged - beginning of a fault zone.

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APPENDIX C - Diamond Drill Hole Geochemical and Assay Data

TC-87-5

Footage		Au	Ag	Cu	Pb	Zn
2094.50	2098.00	394	10.4	2320	157	950
2098.00	2102.00	634	33.3	4740	3020	21600
2102.00	2105.50	2350	94.9	10370	7970	63700
2105.50	2110.50	1540	46.2	11900	5850	46050
2110.50	2115.50	3760	117	23000	16200	82500
2115.50	2121.00	276	7.9	1540	1120	14000
2121.00	2124.50	24	1.8	72	77	360
2124.50	2130.00	20	1.5	51	48	172
2130.00	2135.00	0.0	0.0	11	4	74
2135.00	2140.00	0.0	.6	17	4	80
2140.00	2145.00	32	1	17	20	92
2145.00	2150.00	20	1.6	37	21	192
2150.00	2155.00	120	2.2	23	110	277
2155.00	2160.00	376	5.2	33	219	809
2160.00	2165.00	252	5.4	22	121	529
2165.00	2168.00	248	4.7	23	104	216
2168.00	2173.00	1266	31.4	69	616	776
2173.00	2178.00	1460	41.3	108	1110	1980
2178.00	2183.00	856	41.1	44	1250	1250
2183.00	2187.00	816	27.2	45	118	208
2206.00	2210.00	42	.8	57	70	868
2210.00	2215.00	56	1.2	139	70	1360
2215.00	2220.00	96	1.3	132	15	1650
2220.00	2225.50	102	6.5	165	52	2720
2225.50	2230.00	274	5	160	128	4930
2230.00	2235.00	280	4.5	247	227	1640
2235.00	2240.00	146	8.6	1230	232	471
2240.00	2245.00	402	25.8	7460	698	1137
2245.00	2250.00	458	14.1	3190	526	1008
2250.00	2255.00	206	2.5	259	997	1570
2255.00	2260.00	160	2	85	648	1360
2260.00	2265.00	260	5.6	592	1930	2160
2265.00	2269.00	162	3	159	681	1730
2269.00	2275.00	336	6.5	98	436	1340
2275.00	2280.00	244	8	242	1300	2020
2280.00	2285.00	280	11.4	349	1130	3080
2285.00	2290.00	352	11.8	301	247	3150
2290.00	2295.00	220	6.5	161	62	1240
2295.00	2300.00	176	2.4	304	40	865
2300.00	2305.00	216	2.5	120	35	1230
2305.00	2307.00	508	3.5	183	41	1110
2307.00	2310.00	42	0.0	19	8	97
2310.00	2315.00	40	0.0	18	5	75
2315.00	2320.00	40	.4	32	5	417
2320.00	2325.00	36	0.0	53	11	155
2325.00	2330.00	40	0.0	47	7	101
2330.00	2335.00	60	.4	122	9	578
2335.00	2340.00	76	.8	176	4	43
2340.00	2345.00	36	.7	91	6	35
2345.00	2350.00	0.0	0.0	17	5	54
2350.00	2355.00	54	.5	98	12	90
2355.00	2360.00	42	.5	75	5	111
2360.00	2365.00	98	1	108	15	135

~~TULSEQUAH CHIEF WD ASSAY DATA-DDH-87-5~~

TC 87-5

JOB V 87-0721R

REPORT DATE 8 JAN 1968

LAB NO	FIELD NUMBER	DRILL INTERVAL		Au	Nt Au	Ag	Pb	Zn	Cu	Au(1)	Au(1)	Ag(1)	Ag(1)	Cu(1)	Pb(1)	Zn(1)
		FROM (METRES)	TO	PPM	GRAM	PPM	PPM	PPM	PPM	PPM	G/T	OZ/T	G/T	OZ/T	%	%
R8723157	TC 87-5	2094.50	2098.00	394	5	10.4	157	950	2320	0.206	0.006	3.840	0.112	0.16	0.01	0.10
R8723158	TC 87-5	2098.00	2102.00	634	5	33.3	3020	E21600	4740	1.097	0.032	26.915	0.785	0.46	0.32	2.00
R8723159	TC 87-5	2102.00	2105.50	2350	5	94.9	7970	E63700	E10370	2.449	0.072	88.595	2.584	1.05	0.90	5.90
R8723160	TC 87-5	2105.50	2110.50	1540	5	46.2	5850	E46050	E11900	1.886	0.055	48.755	1.422	1.09	0.63	4.90
R8723161	TC 87-5	2110.50	2115.50	3760	5	E117	E16200	E82500	E23000	3.977	0.116	118.97	3.470	1.70	1.65	7.25
R8723162	TC 87-5	2115.50	2121.00	276	5	7.9	1120	E14000	1540	0.617	0.018	8.812	0.257	0.20	0.13	1.65

APPENDIX "D"

EXPLORATION

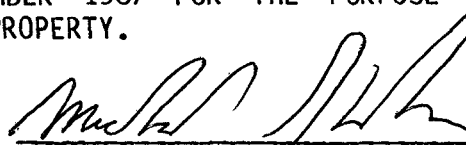
WESTERN CANADA

IN THE MATTER OF THE B.C. MINERAL ACT AND
IN THE MATTER OF DIAMOND DRILLING
CARRIED OUT ON THE TULSEQUAH PROPERTY
LOCATED IN THE ATLIN MINING DIVISION OF THE PROVINCE OF
BRITISH COLUMBIA - MORE PARTICULARLY N.T.S. 104K/11,12

A F F I D A V I T

I, MICHAEL J. CASSELMAN, OF THE CITY OF DELTA, IN THE PROVINCE OF BRITISH COLUMBIA, MAKE OATH AND SAY:

1. THAT I AM EMPLOYED AS A PROJECT GEOLOGIST BY COMINCO LTD. AND AS SUCH HAVE A PERSONAL KNOWLEDGE OF THE FACTS TO WHICH I HEREINAFTER DEPOSE:
2. THAT ANNEXED HERETO AND MARKED AS "APPENDIX A" TO THIS REPORT IS A TRUE COPY OF EXPENDITURE OF A DIAMOND DRILLING PROGRAM CARRIED OUT ON THE TULSEQUAH PROPERTY:
3. THAT THE SAID EXPENDITURES WERE INCURRED BETWEEN THE 14 DAY OF SEPTEMBER 1987 AND THE 29 DAY OF NOVEMBER 1987 FOR THE PURPOSE OF MINERAL EXPLORATION ON THE ABOVE NOTED PROPERTY.


MICHAEL J. CASSELMAN, M.Sc.

APPENDIX "E"

EXPLORATION

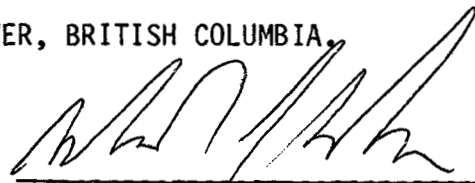
WESTERN CANADA

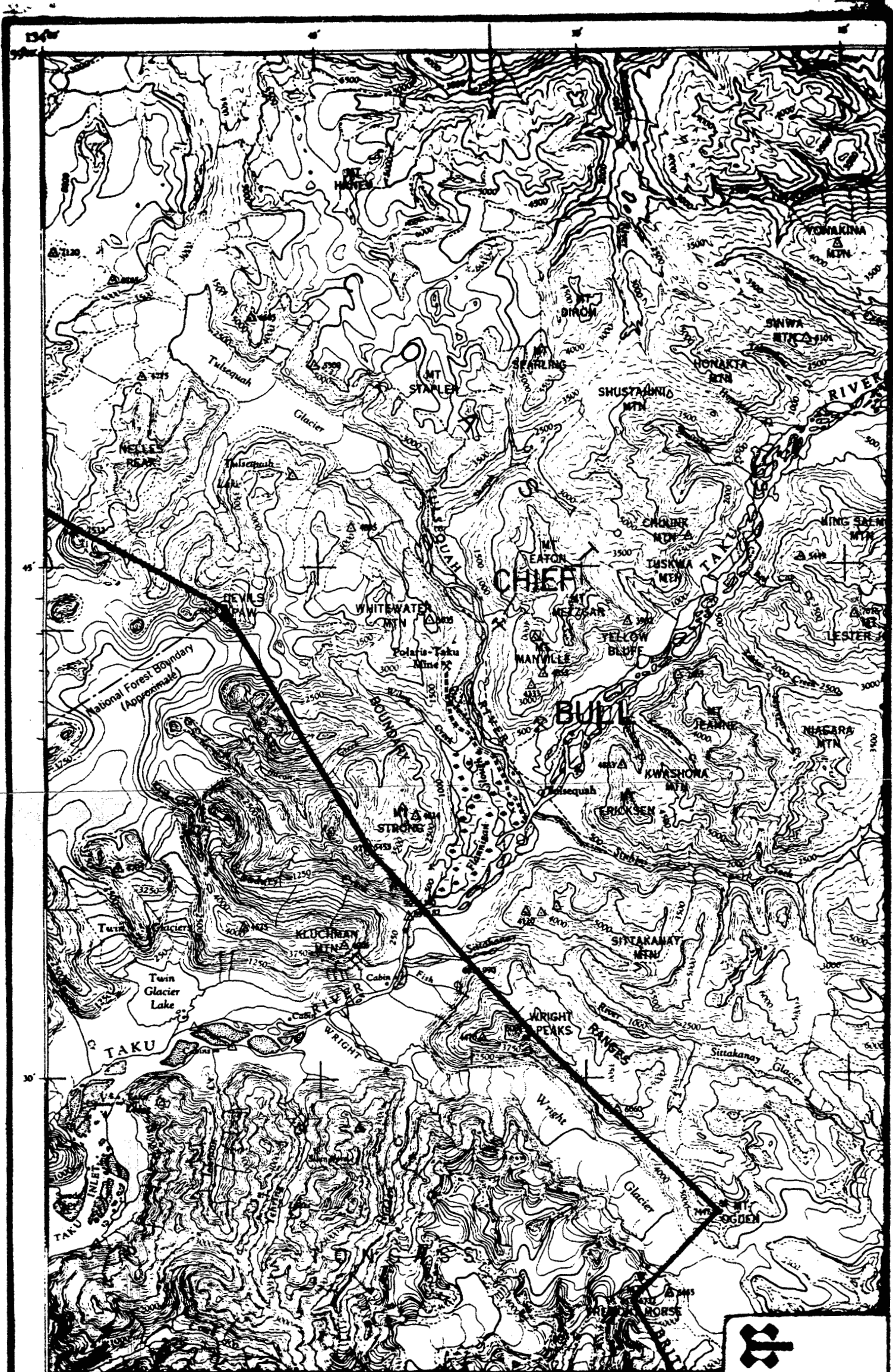
STATEMENT OF QUALIFICATIONS

I, MICHAEL J. CASSELMAN, OF THE CITY OF DELTA, BRITISH COLUMBIA, HEREBY CERTIFY:

- BRITISH COLUMBIA, WITH A BUSINESS ADDRESS AT 700-409 GRANVILLE STREET, VANCOUVER, BRITISH COLUMBIA.
- THAT I GRADUATED WITH B.Sc. AND M.Sc. DEGREES IN GEOLOGY FROM THE UNIVERSITY OF BRITISH COLUMBIA IN 1969 AND CARLTON UNIVERSITY IN 1977.
- THAT I HAVE PRACTISED GEOLOGY WITH COMINCO LTD. FROM 1969 TO PRESENT.

DATED THIS 29 DAY OF JANUARY 1988 AT VANCOUVER, BRITISH COLUMBIA.

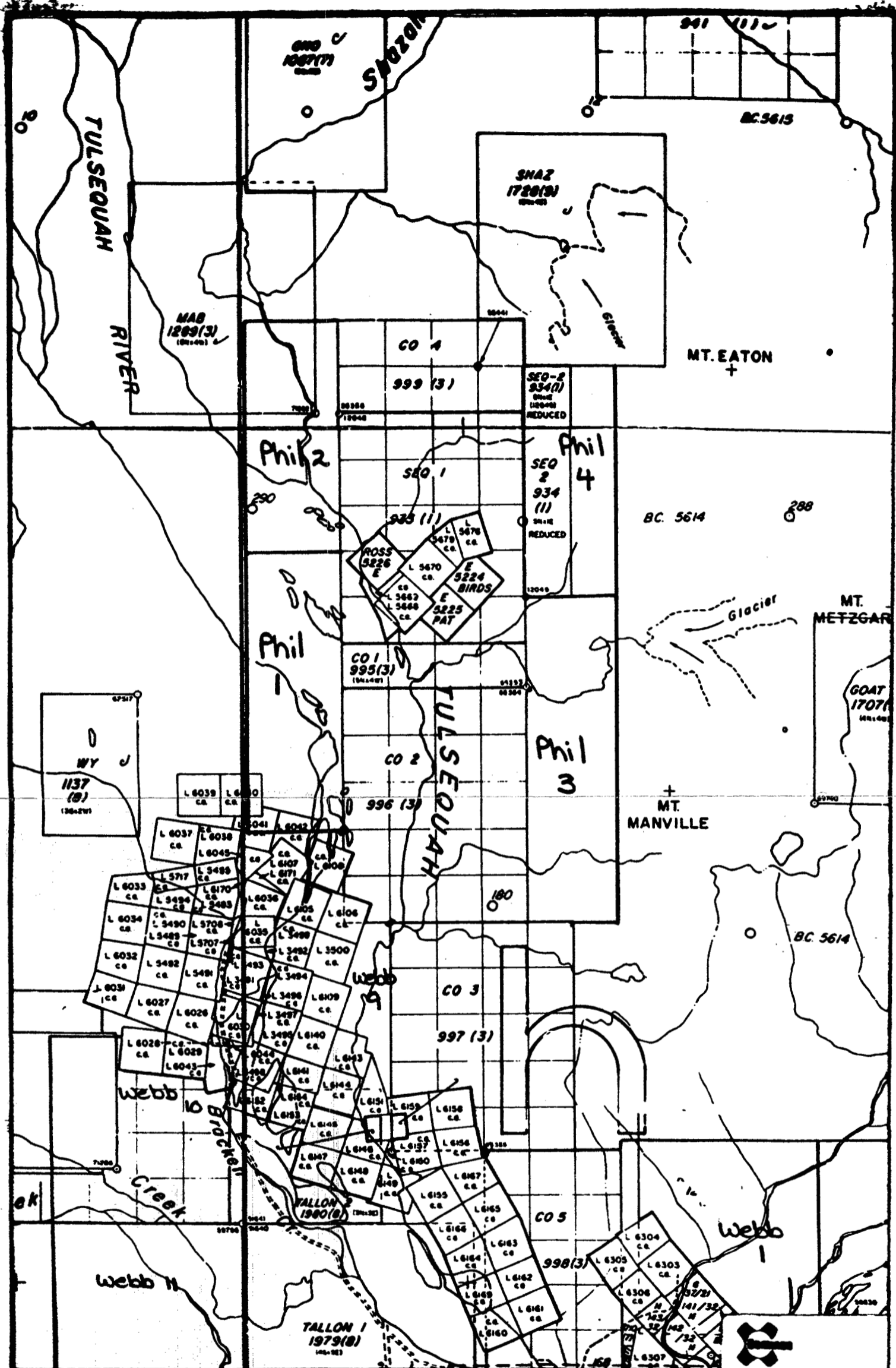

MICHAEL J. CASSELMAN, M.Sc.



Drawn by:		Traced by:	
Revised by	Date	Revised by	Date

**TULSEQUAH CHIEF PROPERTY
LOCATION MAP**

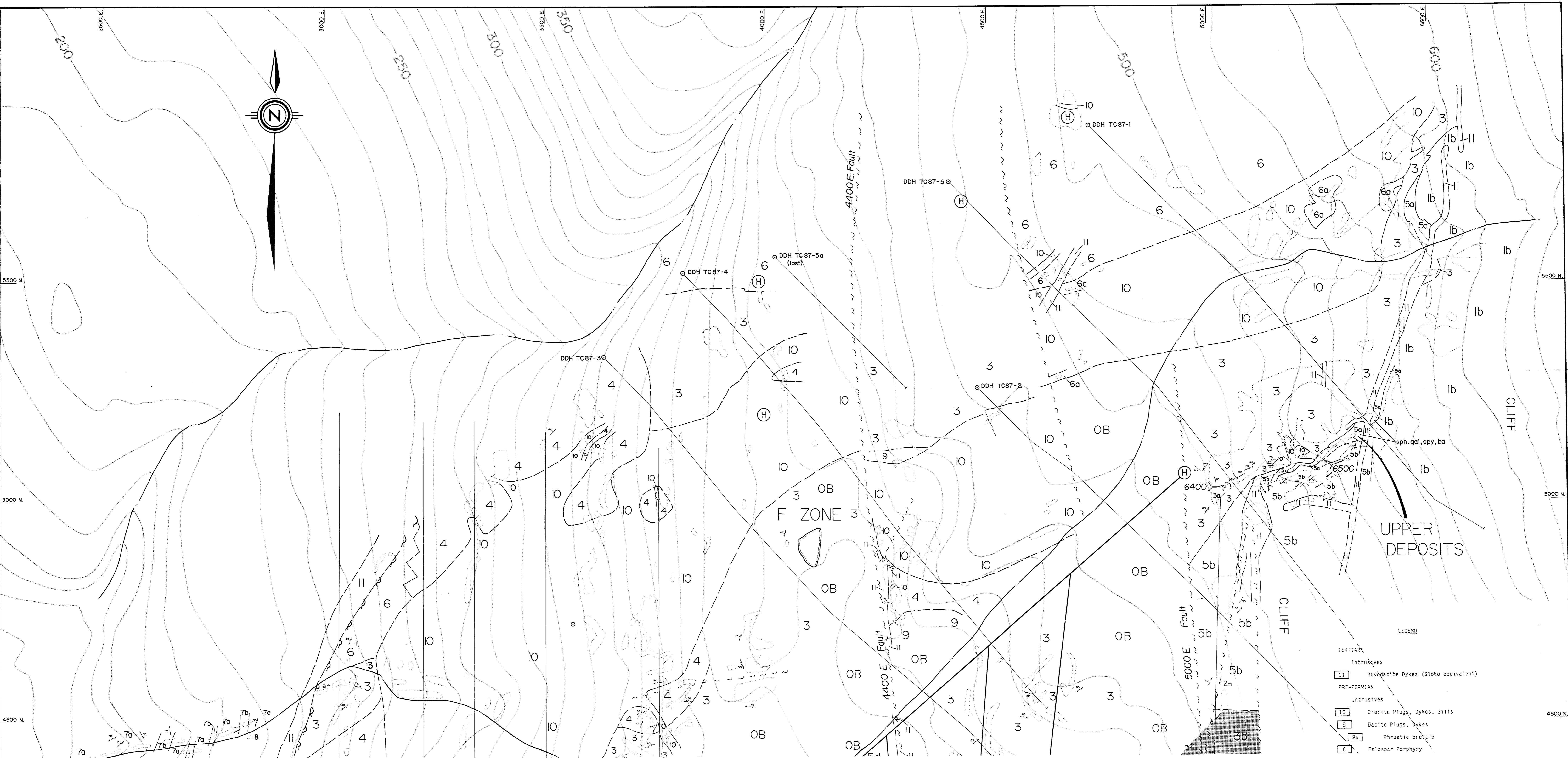
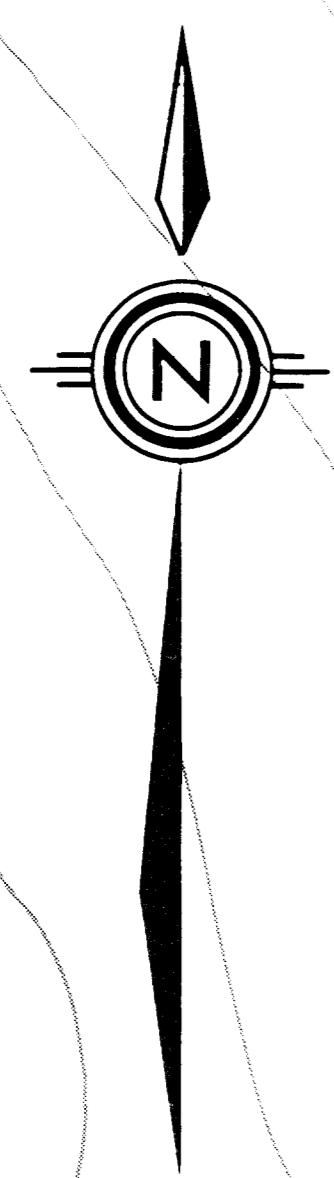
Scale: _____ Date: _____ Plate Figure 1



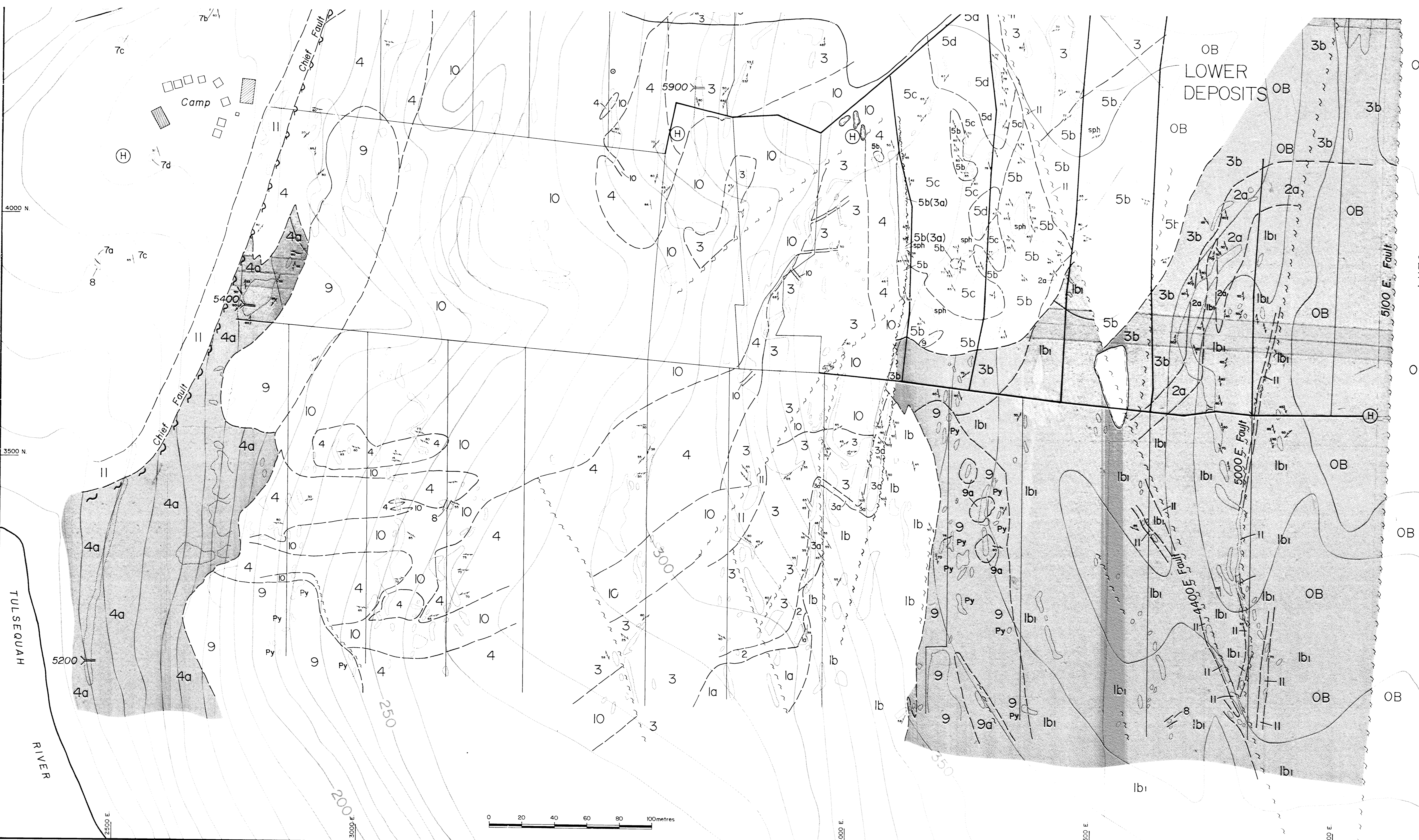
Drawn by:		Traced by:	
Revised by	Date	Revised by	Date

TULSEQUAH CHIEF PROPERTY CLAIM MAP

Scale: _____ Date _____ Plate Figure 2



- LEGEND
- TERTIARY
- Intrusives
 - 11 Rhyodacite Dykes (Sioko equivalent)
- PRE-PERUVIAN
- Intrusives
 - 10 Diorite Plugs, Dykes, Sills
 - 9 Dacite Plugs, Dykes
 - 9a Phraetic breccia
 - 8 Feldspar Porphyry



- 7 Mixed Volcanics/Sediments - moderately to strongly foliated
 - 7a Andesite Pyroclastics
 - 7b Dacite Pyroclastics
 - 7c Lm. Clastics, Andesite Tuffs
 - 7d Limestones
- Volcanics**
- 5 Andesite Pyroclastics
 - 5a Tuffaceous clastics
 - 5 Mineral Horizon (altered) - primarily dacitic tuffs, muds, cherty tuffs, cherts; minor dacite lapilli tuffs, andesite tuffs
 - 5a Strongly altered-foliated sericite-(quartz)-pyrite tuffs
 - 5b Strongly altered-massive quartz-sericite-pyrite rock (chert-like)
 - 5c Moderately altered-pyritized, sericitized, minor silicification, chloritization; primarily dacite lapilli tuffs.
 - 5d Weakly altered-pyritized; minor silicification, sericitization; primarily dacite lapilli tuffs
 - 4 Rhyodacite Pyroclastics
 - 4a Weakly to moderately altered-pyritized, sericitized; minor silicification
 - 3 Dacite Pyroclastics
 - 3a Dacite tuffs, cherty tuffs
 - 3b Moderately altered-pyritized, sericitized; minor silicification
 - 2 Dacite Andesite Pyroclastics
 - 2a Moderately altered-pyritized, sericitized, silicified; minor chloritization
 - 1 Undifferentiated Andesite Pyroclastics, Flows, Flow Breccias
 - 1a Amygduloidal; locally pillows, pillow breccias
 - 1b Feldspar porphyritic, amygduloidal-locally up to 20% dacite fragments
 - 1b1 Weakly to moderately altered-pyritized, sericitized

- SYMBOLS**
- Outcrop
 - ┊ Creek
 - ⊙ Helicopter pad
 - ⊕ Adit portal
 - Pond
 - ↗ Bedding-strike/dip
 - ↘ Foliation-strike/dip
 - Fault
 - Surveyed line
 - TC87-4 Diamond drill hole-drilled 1987
 - Drill site-not drilled
 - 3500N Mine grid
 - ▭ Permanent building, tent frame
 - O.B. Overburden
 - ▨ Alteration pipe
 - Py, sph, gal Pyrite, sphalerite, galena
 - cpy, ba Chalcopyrite, barite

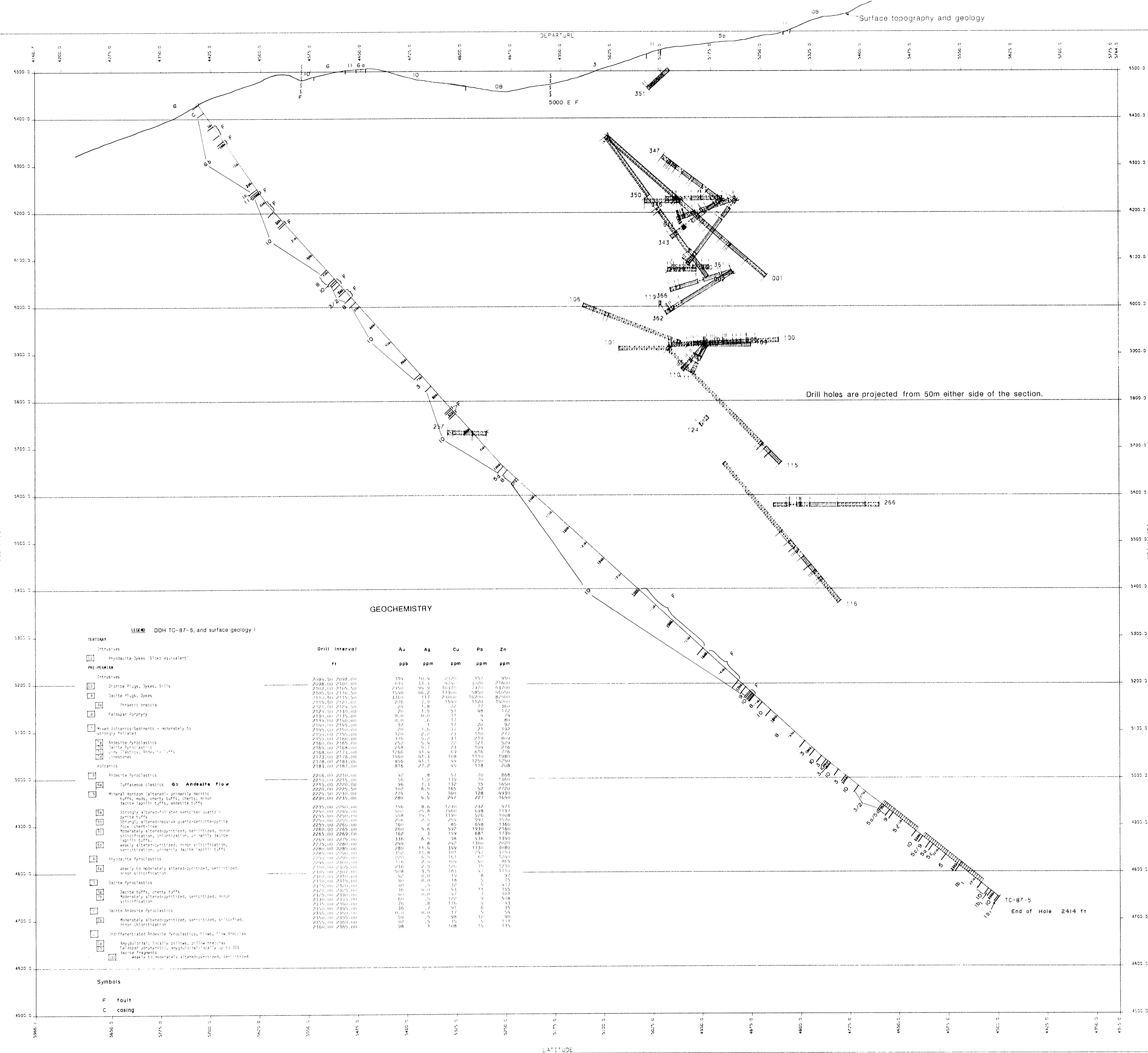
17,137
 GEOLOGICAL BRANCH
 ASSESSMENT REPORT

TULSEQUAH PROPERTY
CENTRAL AREA
 Mapped by M.J. Casselman

Drawn by: M.J.C.	Traced by: a.m.g.
Revised by: []	Revised by: []

GEOLOGY MAP

Scale: 1:1000 Date: August, 1987 Plate: 87-3



LEGEND

STRIP 1 LITHOLOGIES (DDH's 1946-1957)

- AND ANDESITE MASSIVE
- AND ANDESITE FRAGMENTED
- FRG FELSIC PORPHYRIS
- FRD FELSIC DYKE
- FMG FELSIC DYKE
- DMG DMG - 25' - 100' - 150'
- DMU DMU MASSIVE GYPSUMS
- DMR DMR DISSEMINATED GYPSUMS
- DMT DMG - 15' - 20'
- DMB DMG - 20' - 40'
- ASL ANDESITE
- SH SHALE
- DMU DMU - 25' - 100'
- NSG NO LOG

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

17.137

VOLUME SPECIFICATIONS

N 5265 E 4160.7 EL 4500.0
45.5 D 5764.0 EL 5500.0 SECTION

SCALE: 1" = 63'
RANGE: 154'
SECTION:

TULSEQUAH CHIEF

DRAWN BY: GEORGES TRACED BY: K.A. HISSINS
PROJECT NO: DDH TC-87-5
SCALE: 1" = 63' DATE: 11/20/1988
TIME: 1:25:43

1: 996

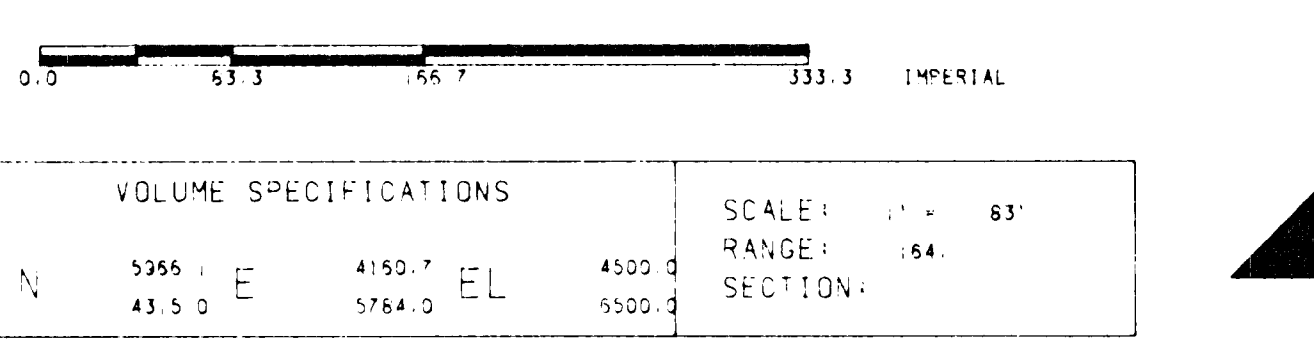
GEOCHEMISTRY

LEGEND DDH TC-87-5, and surface geology							
TERTIARY							
Intrusives							
11	Andesite Dykes (Stoxx equivalent)	Drill Interval	Au	Ag	Cu	Pb	Zn
		ft	ppb	ppm	ppm	ppm	ppm
PRE-PELMIAN							
Intrusives							
25	Diorite Plugs, Dykes, Sills	2094.50-2098.00	159	10.4	2520	15.7	950
		2098.00-2102.00	495	33.3	4720	30.0	2760
		2102.00-2106.50	2950	166.9	30400	2400	54300
26	Dacite Plugs, Dykes	2106.50-2110.50	1500	166.2	13900	9850	46000
		2110.50-2115.00	3820	333	24000	10200	87500
		2115.00-2120.00	276	7.9	1500	1120	3400
		2120.00-2125.00	25	1.8	72	4	360
		2125.00-2130.00	20	1.5	21	4	57
3	Felspar Porphyry	2130.00-2135.00	0.0	0.0	1.7	4	74
		2135.00-2140.00	0.0	0.0	1.7	4	60
		2140.00-2145.00	32	1	1.7	20	92
		2145.00-2150.00	24	1.6	89	23	199
		2150.00-2155.00	120	2.5	23	110	277
		2155.00-2160.00	376	5.2	33	233	800
		2160.00-2165.00	252	3.6	22	167	269
34	Andesite Dyke/clastics	2165.00-2168.00	298	6.7	23	104	216
35	Dacite Porphyry	2168.00-2173.00	1766	48.4	69	476	776
36	Limestones	2173.00-2178.00	1050	41.3	108	1330	1280
		2178.00-2183.00	956	48.1	94	1200	920
		2183.00-2187.00	816	27.2	45	118	208
Volcanics							
37	Andesite Dyke/clastics	2205.00-2210.00	42	.8	5.7	70	868
		2210.00-2215.00	56	1.2	139	70	360
		2215.00-2220.00	96	1.3	132	15	3050
38	Tuffaceous clastics	2220.00-2225.00	102	6.5	165	52	2720
		2225.00-2230.00	274	5	100	128	6930
		2230.00-2235.00	280	4.5	247	227	1640
39	Mineral Horizon (altered) - primarily dacitic tuffs, muds, cherty tuffs, cherts, minor dacite lapilli tuffs, andesite tuffs	2235.00-2240.00	156	8.6	1040	232	471
		2240.00-2245.00	29	2.8	240	128	1137
		2245.00-2250.00	174	11.1	1390	525	1008
		2250.00-2255.00	296	2.5	299	99	1720
		2255.00-2260.00	160	7	85	648	1360
40	Moderately altered-andesite, semicrystalline, minor silicification, sulfidation, or partly dacite lapilli tuffs	2260.00-2265.00	260	5.6	522	1930	2360
		2265.00-2269.00	162	3	159	681	1730
		2269.00-2275.00	336	6.5	98	436	1340
		2275.00-2280.00	280	8	200	1300	2000
		2280.00-2285.00	284	13.4	369	1130	1080
		2285.00-2290.00	352	11.8	301	247	1370
		2290.00-2295.00	220	6.5	363	65	1790
41	Hydrothermal Andesite	2295.00-2300.00	176	2.4	806	40	865
		2300.00-2305.00	246	2.9	140	32	1250
		2305.00-2310.00	518	3.5	183	43	1130
42	Dacite Dyke/clastics	2310.00-2315.00	40	0.0	19	6	75
		2315.00-2320.00	40	0.0	18	5	75
		2320.00-2325.00	40	0.0	37	7	427
		2325.00-2330.00	36	0.0	5.8	13	122
		2330.00-2335.00	40	0.0	6.7	7	101
		2335.00-2340.00	60	0.0	12	6	93
		2340.00-2345.00	76	0.0	175	6	63
		2345.00-2350.00	316	0.0	97	6	36
		2350.00-2355.00	0	0.0	1.7	0	24
		2355.00-2360.00	0	0.0	98	12	90
		2360.00-2365.00	62	0.0	75	5	151
		2365.00-2370.00	98	1	108	15	115

Symbols

F fault

C cosing



DRAWN BY: GEORGES		TRACED BY: K.A. HISSINS
PROJECT NO: DDH TC-87-5		SECTION: 154'
SCALE: 1" = 63'	DATE: 11/20/1988	TIME: 1:25:43
TULSEQUAH CHIEF		PLATE: 81-13