

DU PONT OF CANADA EXPLORATION LIMITED

GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE TUTS PROPERTY

CASSIAR MINING DIVISION

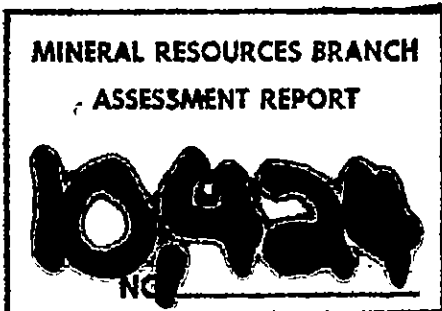
(BRITISH COLUMBIA)

LAT. 59°49'N, LONG. 134°45'W

NTS: 104-M-15W

OWNER OF CLAIMS: DU PONT OF CANADA EXPLORATION LIMITED

OPERATOR: DU PONT OF CANADA EXPLORATION LIMITED



Submitted by: J.T. Neelands
L. Holmgren

Date : 1982 May

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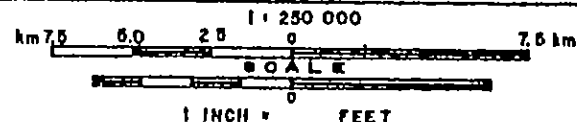
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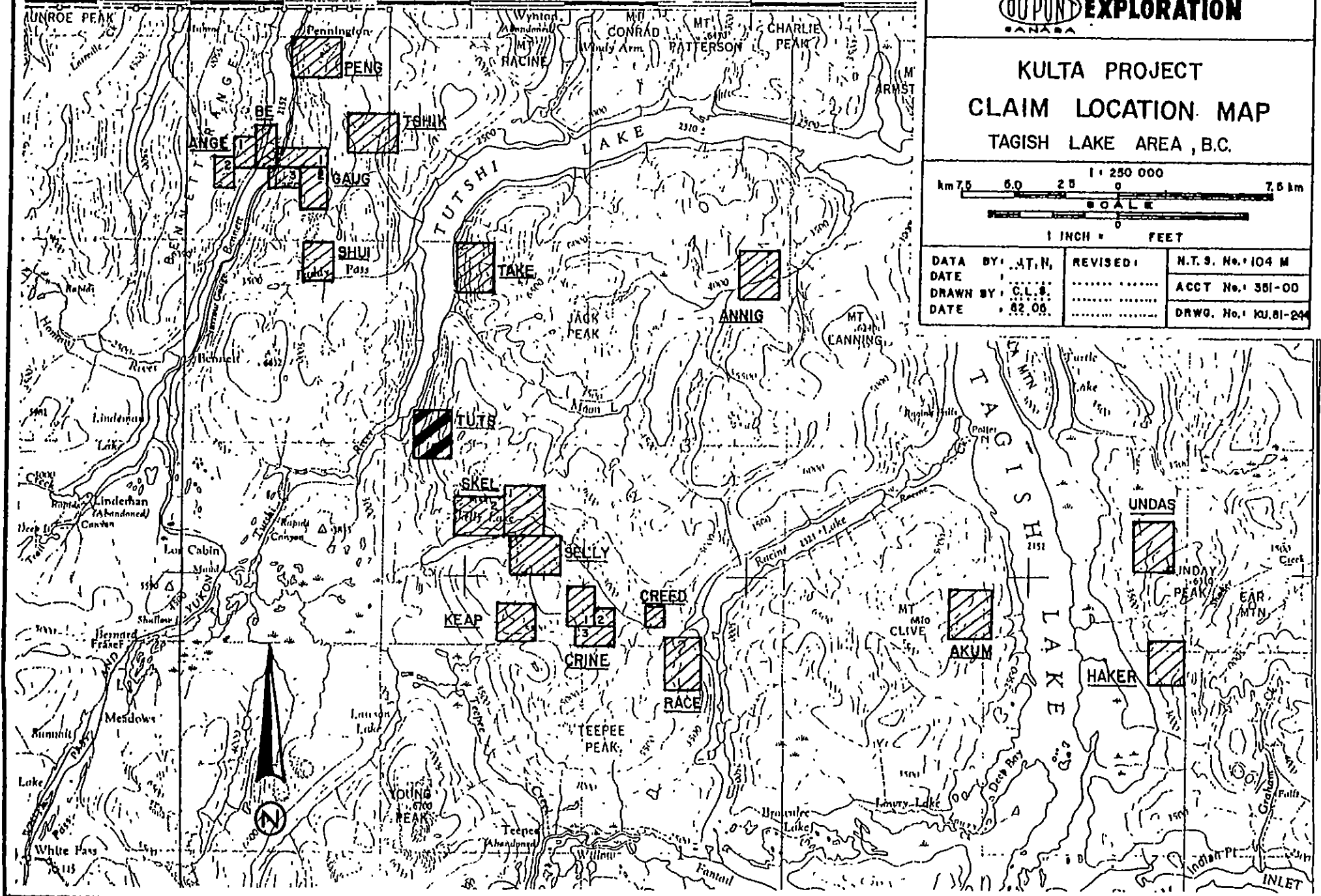
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DU PONT EXPLORATION
CANADA

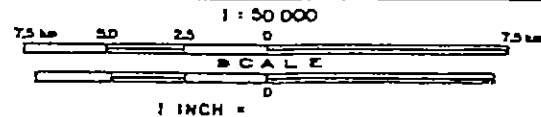
**KULTA PROJECT
CLAIM LOCATION MAP
TAGISH LAKE AREA, B.C.**



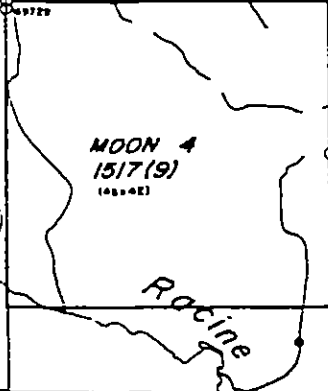
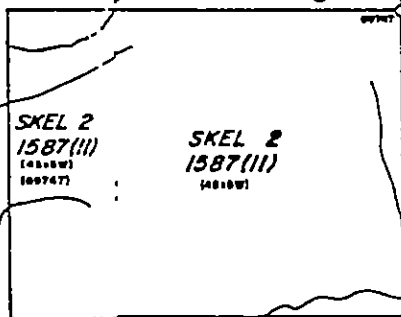
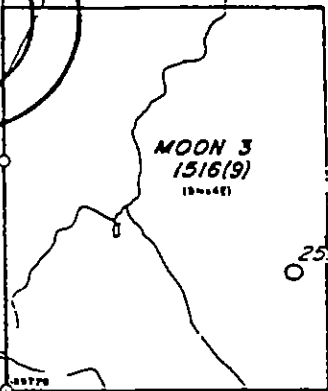
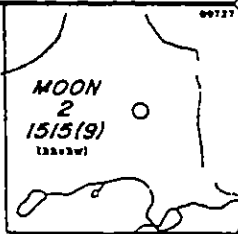
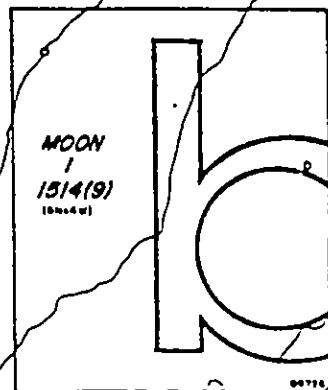
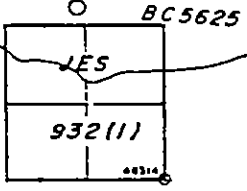
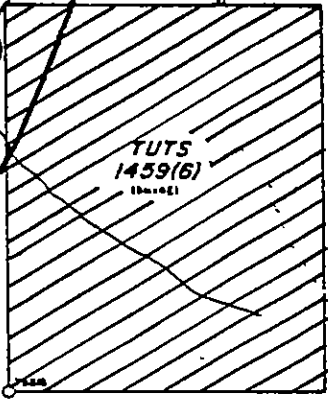
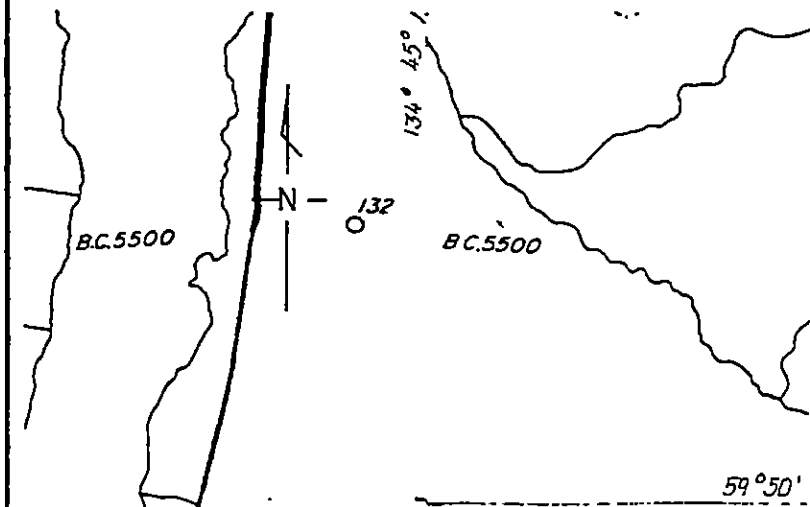
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DATE	ACCT No. 381-00
DRAWN BY: C.L.S.	DRWG. No. KJ.81-244
DATE: 42.00.	



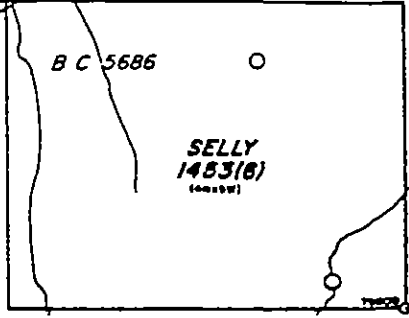
**KULTA PROJECT
TUTS CLAIM
CLAIM MAP**
ATLIN LAKE AREA, BRITISH COLUMBIA



DATA BY: J.T.N.	REVISED:	N.T.S No: 104 M15W
DATE:		ACCT No: 351-40
DRAWN BY: C.L.S.		DRWG No: KUJ-8-248
DATE: 182 '05.		



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INTRODUCTION

During 1981 May, reconnaissance stream sediment sampling was carried out in the Tagish-Bennett Lake area of northwestern British Columbia. The sampling was undertaken as part of a large regional programme known as Kulda Project. The areal extent of this project is shown on Dwgs. KU.81-1, 1a and 2.

As the result of a gold anomaly in a sample from a creek draining northwesterly into Tutshi Lake, the drainage area of this creek was staked as the TUTS property (Dwg. No. KU.81-244).

LOCATION AND ACCESS

The TUTS claim is located within the Cassiar Mining Division, NTS 104-M-15W (Lat. 59°49'N, Long. 134°45'W). The property is located at the southern end of Tutshi Lake. The nearest population centre is Carcross, YT, 40 km to the northwest. The claim is accessible by helicopter from Carcross or by boat on Tutshi Lake. The Carcross-Skagway, Alaska Highway runs along the opposite side of the lake, approximately 2 1/2 kilometres from the property.

TOPOGRAPHY AND VEGETATION

The claims lie at the south end of Tutshi Lake on the westerly facing slope of a small range of mountains. Elevation varies from a high of 1950 metres in the southeast to 700 metre low in the northwest along Tutshi Lake. Small intermittent streams drain the property, flowing west and northwest into Tutshi Lake. The extreme upper slopes are cliffs that grade down to talus slopes which are covered with grass and moss. Below 1300 metres spruce trees and alders thicken towards the lake.

PROPERTY DEFINITION

The TUTS property consists of 20 claim units as shown on Dwg. No. KU.81- . The claims are in good standing until 1982 June 8.

TUTS:	Record No.	1459
	Tag No.	75815
	Date Recorded:	1981 June 23

PREVIOUS WORK

No previous work is recorded within the property. The property was staked in 1981 June on the basis of an auriferous stream sediment anomaly. Follow-up work in August and September consisted of soil, stream sediment and rock sampling. The property was observed to be underlain by granodiorites, volcanic rocks and metamorphic rocks.

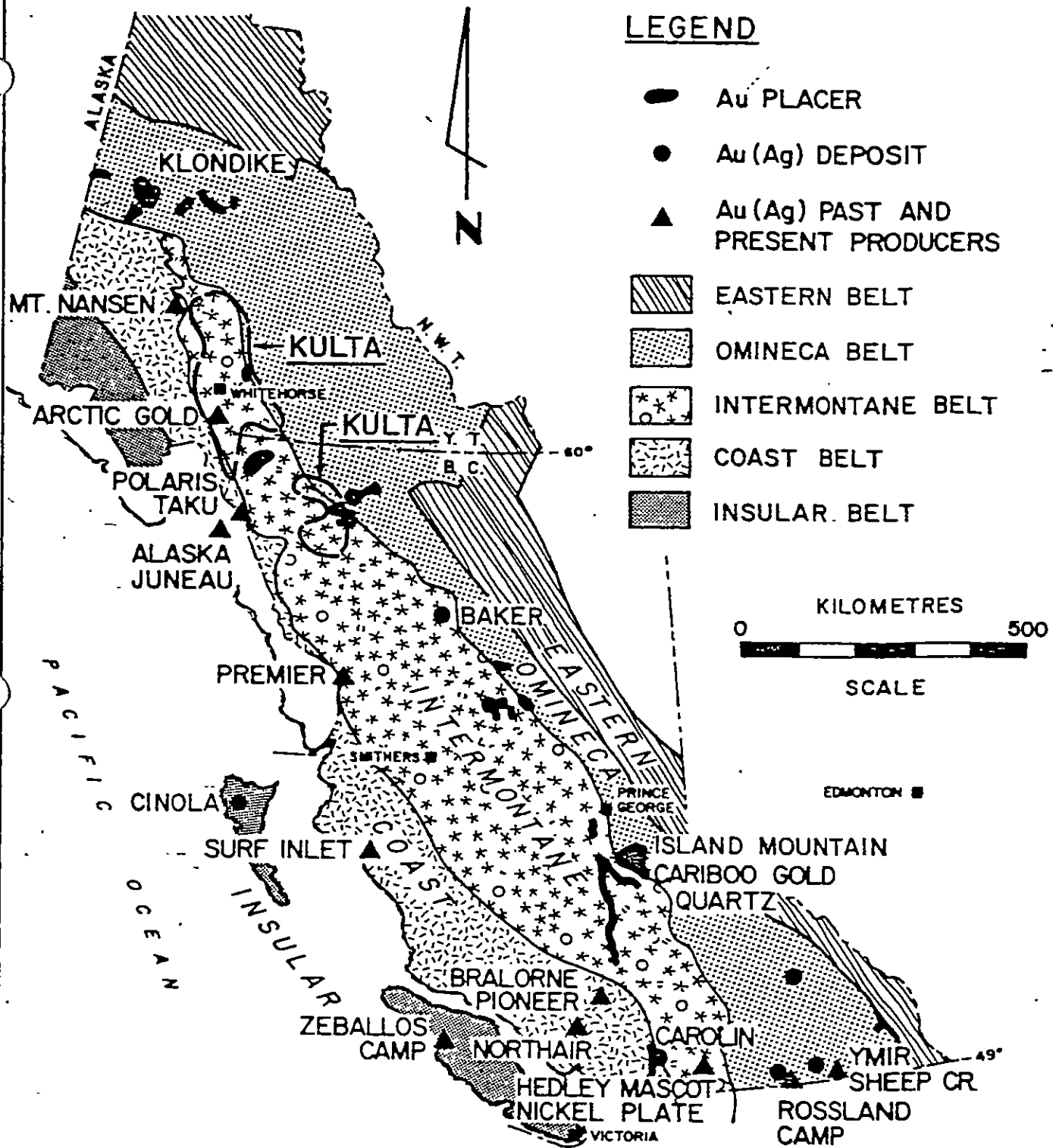
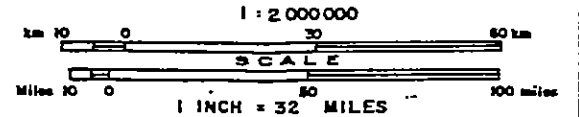


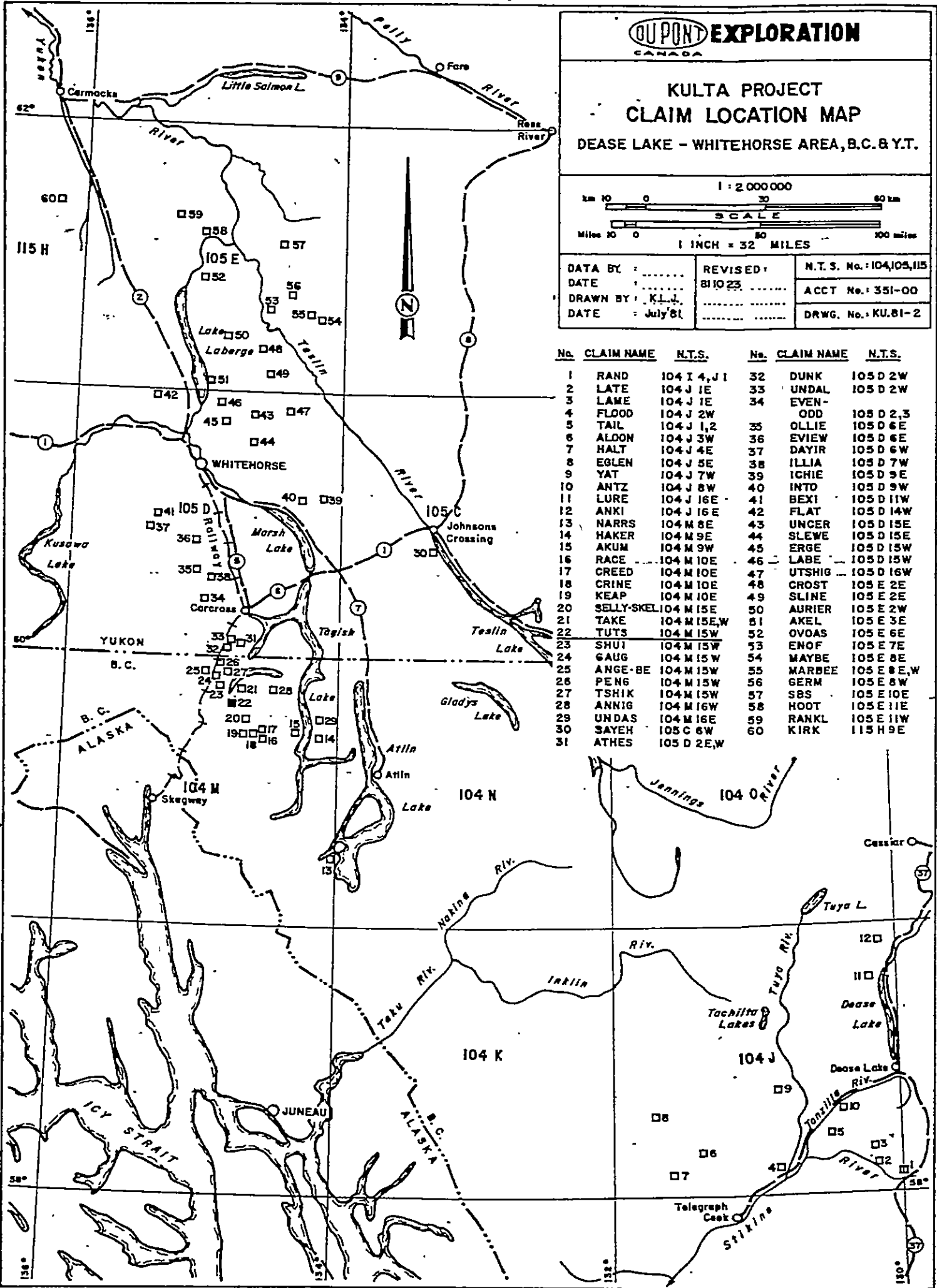
FIGURE 1
KULTA PROJECT AREAS
PRINCIPAL LODGE & PLACER GOLD DEPOSITS
CANADIAN CORDILLERA

**KULTA PROJECT
CLAIM LOCATION MAP**
DEASE LAKE - WHITEHORSE AREA, B.C. & Y.T.

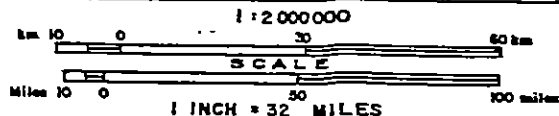


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DATE :	BI 10 23	ACCT No. : 351-00
DRAWN BY : K.L.J.	DRWG. No. : KU.81-2
DATE : July 81	

No.	CLAIM NAME	N.T.S.	No.	CLAIM NAME	N.T.S.
1	RAND	104 I 4, J 1	32	DUNK	105 D 2W
2	LATE	104 J 1E	33	UNDAL	105 D 2W
3	LAME	104 J 1E	34	EVEN-	
4	FLOOD	104 J 2W		ODD	105 D 2,3
5	TAIL	104 J 1,2	35	OLLIE	105 D 6E
6	ALDON	104 J 3W	36	EVIEV	105 D 6E
7	HALT	104 J 4E	37	DAYIR	105 D 6W
8	EGLN	104 J 5E	38	ILLIA	105 D 7W
9	YAT	104 J 7W	39	ICHIE	105 D 9E
10	ANTZ	104 J 8W	40	INTO	105 D 9W
11	LURE	104 J 16E	41	BEXI	105 D 11W
12	ANKI	104 J 16E	42	FLAT	105 D 14W
13	NARRS	104 M 8E	43	UNCER	105 D 15E
14	HAKER	104 M 9E	44	SLEWE	105 D 15E
15	AKUM	104 M 9W	45	ERGE	105 D 15W
16	RACE	104 M 10E	46	LABE	105 D 15W
17	CREED	104 M 10E	47	UTSHIG	105 D 16W
18	CRINE	104 M 10E	48	CROST	105 E 2E
19	KEAP	104 M 10E	49	SLINE	105 E 2E
20	SELY-SKEL	104 M 15E	50	AURIER	105 E 2W
21	TAKE	104 M 15E,W	51	AKEL	105 E 3E
22	TUTS	104 M 15W	52	OVQAS	105 E 6E
23	SHUI	104 M 15W	53	ENOF	105 E 7E
24	GAUG	104 M 15W	54	MAYBE	105 E 8E
25	ANGE-BE	104 M 15W	55	MARBEE	105 E 8E,W
26	PEN6	104 M 15W	56	GERM	105 E 8W
27	TSHIK	104 M 15W	57	SBS	105 E 10E
28	ANNIG	104 M 16W	58	HOOT	105 E 11E
29	UNDAS	104 M 16E	59	RAHKL	105 E 11W
30	SAYEH	105 C 6W	60	KIRK	115 H 9E
31	ATHES	105 D 2E,W			

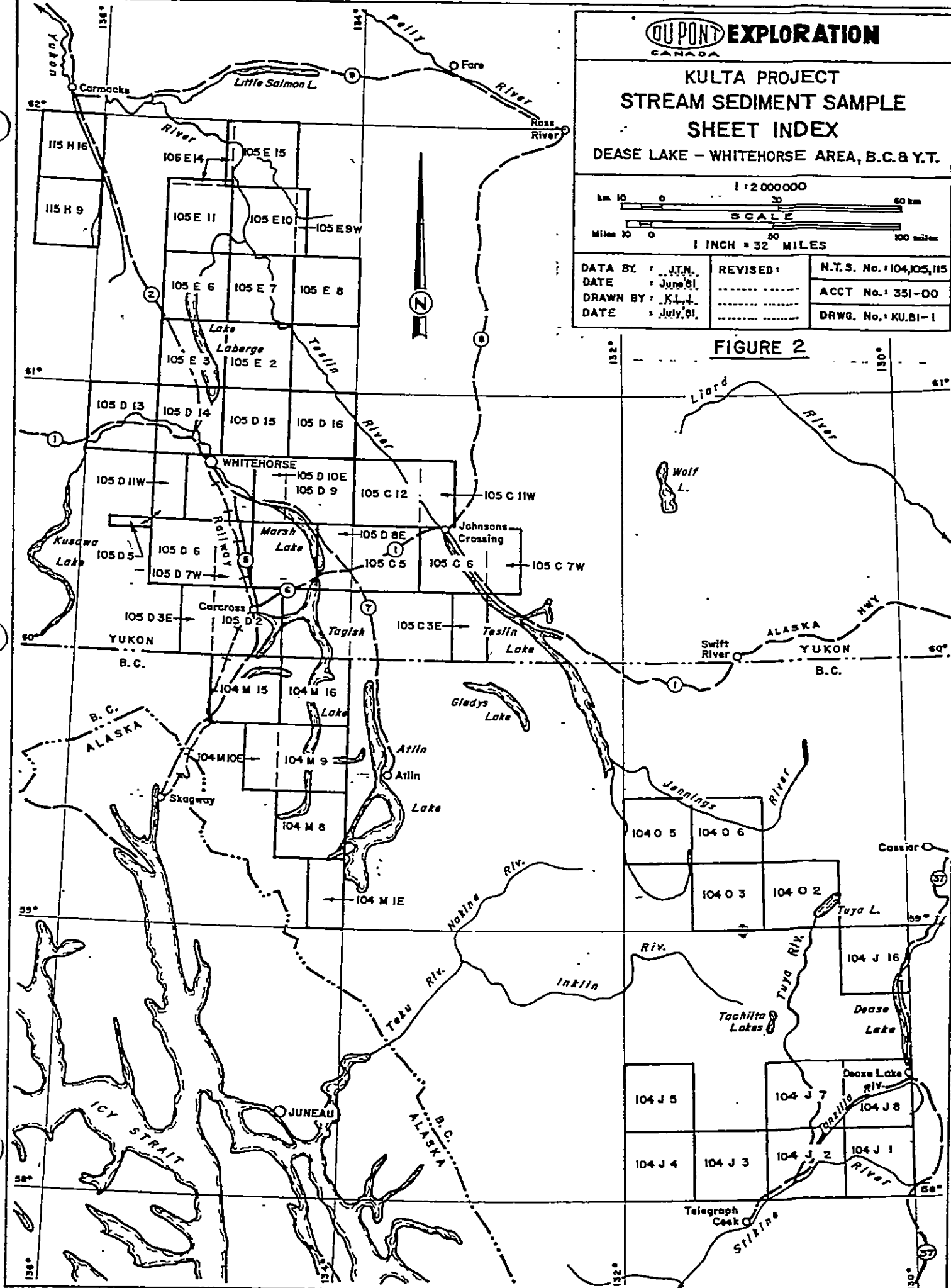


**KULTA PROJECT
STREAM SEDIMENT SAMPLE
SHEET INDEX**
DEASE LAKE - WHITEHORSE AREA, B.C. & Y.T.

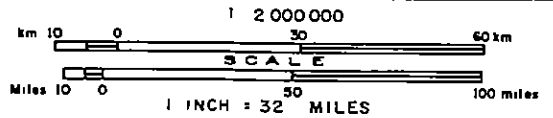


DATA BY: J.T.N.	REVISED:	N.T.S. No.: 104, 105, 115
DATE: June 81		ACCT No.: 351-00
DRAWN BY: K.L.J.		DRWG. No.: KU.81-1
DATE: July 81		

FIGURE 2



**KULTA PROJECT
REGIONAL GEOLOGY
DEASE LAKE - WHITEHORSE AREA, B.C. & Y.T.**



DATA BY	J.T.N.	REVISED	NTS No 104,105,115
DATE			ACCT No 351-00
DRAWN BY	K.L.J.		DRWG No KU.81-2b
DATE	MAY '82		



No.	CLAIM NAME	N.T.S.	No.	CLAIM NAME	N.T.S.
1	RAND	104 I 4, J I	32	DUNK	105 D 2W
2	LATE	104 J 1E	33	UNDAL	105 D 2W
3	LAME	104 J 1E	34	EVEN-	
4	FLOOD	104 J 2W	35	ODD	105 D 2,3
5	TAIL	104 J 1,2	36	OLLIE	105 D 6E
6	ALOON	104 J 3W	37	EVIEW	105 D 6E
7	HALT	104 J 4E	38	DAYIR	105 D 6W
8	EGLN	104 J 5E	39	ILLIA	105 D 7W
9	YAT	104 J 7W	40	ICHIE	105 D 9E
10	ANTZ	104 J 8W	41	INTO	105 D 9W
11	LURE	104 J 16E	42	BEXI	105 D 11W
12	ANKI	104 J 16E	43	FLAT	105 D 14W
13	NARRS	104 M 8E	44	UNCER	105 D 15E
14	HAKER	104 M 9E	45	SLEWE	105 D 15E
15	AKUM	104 M 9W	46	ERGE	105 D 15W
16	RACE	104 M 10E	47	LABE	105 D 15W
17	CREED	104 M 10E	48	UTSHIG	105 D 16W
18	CRINE	104 M 10E	49	CROST	105 E 2E
19	KEAP	104 M 10E	50	SLINE	105 E 2E
20	SELLY-SKEL	104 M 15E	51	AURIER	105 E 2W
21	TAKE	104 M 15E,W	52	AKEL	105 E 3E
22	TUTS	104 M 15W	53	OVOAS	105 E 6E
23	SHUI	104 M 15W	54	ENOF	105 E 7E
24	GAUG	104 M 15W	55	MAYBE	105 E 8E
25	ANGE-BE	104 M 15W	56	MARBEE	105 E 8E,W
26	PENG	104 M 15W	57	GERM	105 E 8W
27	TSHIK	104 M 15W	58	SBS	105 E 10E
28	ANNIG	104 M 16W	59	HOOT	105 E 11E
29	UNDAS	104 M 16E	60	RANKL	105 E 11W
30	SAYEH	105 C 6W		KIRK	115 H 9E
31	ATHES	105 D 2E,W			

LEGEND

- UPPER CRETACEOUS - OLIGOCENE
 - KTo Carmacks, Mt Nansen, Endako Intermediate to acidic volcanic flows, tuff non marine
- LOWER AND MIDDLE JURASSIC
 - Tjt Nicola and Lewes Volcanic and sedimentary rocks.
- LATE CRETACEOUS AND EARLY TERTIARY
 - KTq, KTg Granitic rocks
- LATE PALEOZOIC - TRIASSIC
 - Alpine-type ultramafics



PERSONNEL

Property work was performed by the following people on the dates indicated:

- 1981 August 3: L. Holmgren (Senior Geological Assistant)
 J. Peter (Senior Geological Assistant)
 P. Webb & C. Naas (Jr. Geological Assistants)
- 1981 August 5: L. Holmgren & J. Peter
 A. Deak & A. MacArthur (Jr. Geological Ass'ts)
- 1981 Sept. 27: J.T. Neelands (Geologist
 J. Dupas & L. Harland (Jr. Geological Ass'ts)
- 1981 Sept. 28: J.T. Neelands

GEOLOGYRegional Geology

The property lies within the Intermontane Belt of the western Cordillera. The belt consisting mainly of sedimentary and volcanic rocks stretches from the Yukon to southern British Columbia. The belt averages 150 kilometres in width and trends northwest-southeast. Bordering the belt to the west are the granitic rocks of the Coast Mountain Intrusions, which stretch along the entire B.C. coast into Alaska.

Physiographically, the region is part of the Yukon Plateau. This area is characterized by glaciated mountain peaks generally under 2000 metres in elevation and long narrow lake-filled valleys. To the west, the rugged extensively glaciated peaks of the Coast Mountains dominate.

The Tagish-Bennett Lake areas are dominated by rocks of the Intermontane Belt with small plutons (2-8 km in size) of Late Cretaceous Coast Intrusions scattered throughout. The main front of the Coast Mountains occurs seven kilometres west of the area. The rocks of the Intermontane Belt comprise Palaeozoic metamorphic rocks (schists and gneiss), Pennsylvanian (?) and Permian volcanic and meta-volcanic rocks (Taku Group), Lower and Middle Jurassic sediments (Laberge Group), and Upper Cretaceous volcanic rocks (Hutshi Group). See Table of Formations (Table 1) and Dwg. No. KU.81-2b (Kulta Project Regional Geology).

The rocks generally occur in northwest trending belts as part of a large regional synclorium (Wheeler 1961, p. 103). All Pre-Cretaceous rocks show this trend. Locally tight folding has been observed, possibly due to intrusive placement.

TABLE I

Table of Formations

Miocene to Pleistocene (TQW)

Wrangell-Garibaldi: Basic to intermediate volcanics.

Upper Cretaceous-Oligocene (KTo)

Ootsa Lake - Kamloops (Hutshi Group): Intermediate to acidic volcanic flows, tuff; non-marine.

Late Cretaceous and Early Tertiary

Nisling Range Alaskite, Nanika (KTq): Granite, quartz monzonite lesser granodiorite.

Babine (KTg): Granodiorite, quartz diorite, quartz monzonite, lesser quartz monzonite, diorite, monzonite.

Lower and Middle Jurassic (JL)

Laberge-Quesnel (Stuhini Fmn): Greywacke, argillite, conglomerate; marine.

Late Triassic - Early Jurassic

Hogem Granodiorite (EJg): Quartz diorite, granodiorite, lesser diorite, quartz monzonite.

Iron Mask (Ejd): Diorite, monzonite, syenite, quartz, diorite, minor pyroxenite, granodiorite.

Upper Triassic - Lower Jurassic (TJT)

Takla-Nicola: Augite porphyry, basaltic volcanics; siltstone, shale, limestone, conglomerate.

Mississippian - Triassic (MTC)

Cache Creek - Anvil Range: Chert, argillite, carbonate, basalt, associated diabase, gabbro, alpine ultramafic; marine.

Proterozoic - Palaeozoic

Central Gneiss - Skagit: Granitoid Gneiss, migmatite schist, amphibolite, plutonic rocks.

Economic mineralization has been exploited in the area from various sources. The Engineer Mine (Au,Ag) is hosted by quartz-calcite veins occurring in shales and greywackes of the Laberge Group. Venus Mine (Au,Ag) is hosted by a quartz vein cutting through Hutshi Group andesites. Numerous other showings similar to the Venus Mine occur in the Tagish Lake region.

Local Geology

The TUTS claim is largely underlain by Pre-Permian metamorphic rocks consisting of mainly schist and gneiss with minor slates and quartzite. Mixed in with the metamorphic rocks are pods of Upper Triassic Lewes River Group Volcanic rocks - mainly rhyolites, andesites and basalts. Intruding all the above are small elongate bodies of Cretaceous Coast Intrusions consisting of granodiorite and feldspar porphyry dykes.

The metamorphic units dominate in the southwest while the volcanic units increase in abundance towards the northeast of the property. The following is a brief description of the units observed thus far on the property:

a. Schist and Gneiss - Map Units 1a,b

The metamorphic unit is variable between schist and gneiss. The schists are typically dark green in colour, foliated, with alteration to chlorite common. The gneiss is made up of light and dark laminations. The lighter layers are coarse-grained quartz and feldspar while the dark layers are fine-grained micaceous and foliated mafic minerals. A granitic gneiss which is typically coarse-grained, with chlorite alteration can also be differentiated in this unit. The metamorphic rocks have fine-grained disseminated pyrite visible in the gossanous weathering of the unit.

b. Quartzite - Map Unit 1e

This unit occurs in one zone between granodiorite and the gneissic units mentioned previously. The rock is white in colour with a slight gossanous colour in certain areas. Disseminated pyrite is visible in this unit.

c. Slate - Map Unit 1g

This unit predominates in the northern half of the claim group. It has a well defined northwesterly trending and northeasterly dipping foliation.

d. Rhyolite - Map Unit 41

The rhyolite crops out in two adjacent zones in the metamorphic rocks in the southern region of the property. The unit is light grey, fine grained and siliceous. Phenocrysts of feldspar, biotite and minor hornblende occur in the rock.

e. Mafic Volcanics - Map Units 4d,e

This unit comprises basalts and andesites which occur as small bodies in the metamorphic rocks. The andesite is porphyritic with a dark green fine-grained groundmass with small tabular phenocrysts of feldspar.

f. Granodiorite - Map Unit 7b

The granodiorite crops out in an oblong zone in the metamorphic rocks. The unit is grey, coarse-grained, and equigranular. There is a large percentage of mafic minerals (hornblende) and feldspar. Quartz is minor in the rock.

g. Feldspar Porphyry Dykes - Map Unit 7e

These dykes intrude metamorphic rocks in the south and the volcanic rocks in the north of the property. The dykes are a few metres across and trend northwesterly.

Structure

Foliation in the metamorphic rocks trends northwest-southeast and dips towards the northeast at angles between 50-60°. Bedding measurements in the schist unit indicates an easterly to southeasterly strike with a steep dip towards the northeast. GSC map 19-1957 (Bennett) indicates a fault running through the metamorphic rocks along the western edge of the property.

Mineralization

Numerous rusty, siliceous and pod-shaped zones occur throughout the metamorphic rocks. Sulphide mineralization in these zones includes disseminations and blebs of pyrite and minor pyrrhotite. Malachite staining is minor. Pyrite also occurs as laminations in some zones of the metamorphic rocks. Quartz veining up to 1 metre wide cuts the metamorphic rocks. The quartz mainly appears barren but minor pyrite is present in certain areas.

GEOCHEMISTRY

Procedure

A total of 51 soil, 15 rock and 13 stream sediment samples were collected during 1981 marked by topofil. Soil sampling was carried out at 100 metre intervals. The samples were collected from below the organic layer with a mattock and placed in a Kraft paper envelope. Each envelope was marked with a number and a length of flagging tape was secured to the sample site.

Stream sediment samples were collected at 200 metre intervals with the use of an aluminum scoop. They were sieved to -1000 -14 and -10 mesh in the field and approximately 500 gms of sample was placed in a plastic bag with a sample tag. The sample site was marked with flagging tape bearing the sample number.

Rock samples were collected at random throughout the claim group and placed in plastic bags along with a sample tag. Each sample site was marked with a length of flagging tape.

All samples were shipped to Min-En Laboratories Ltd., North Vancouver for preparation and analysis. All samples were analyzed for Mo, Cu, Pb, Zn, Ag, Hg, As, Mn, Au and Sb. A Pb, Zn, Ag, Au assay was performed on six of the rock samples. In addition, a heavy mineral separation and analysis for Cu, Ag and Au was carried out on the stream sediment samples. Details of the analytical procedures are outlined in Appendix I.

Results

A statistical analysis of the results obtained from regional stream sediment samples was performed to determine background and anomalous values for the various elements. Details of this analysis appears in a report by Neelands (1982) titled "Geochemical Report - Kulta Regional Stream Sediment Sampling Programme in the Dease Lake and Tagish Lake Areas". Table II reproduced from that report reveals median background values obtained for the elements studied. Table III shows the results of a report titled "Kulta Follow-Up" (Neelands 1982). The two studies show a good correlation between the stream sediment (heavy mineral) samples. The anomalous values given in Table III will be applied to the results of this property.

The results of geochemical sampling on TUTS are tabled on Dwg. No. KU.81-163. These results have also been tabulated according to frequency distribution of elements in soils (Table IV) and in stream sediments and heavy minerals (Table V).

TABLE IIKulta Regional Stream Sediment Sampling ProgrammeBackground and Anomalous Values

<u>Element</u>	<u>No. of Samples</u>	<u>Mean ppm</u>	<u>Median Background ppm</u>	<u>Standard Deviation</u>	<u>95% Threshold ppm</u>
Mo	625	1.8	1.0	1.39	4.0
Cu(C1)CHm	598	44.5	38.0	27.39	150.0
Cu(C2)F	621	35.9	32.0	21.15	80.0
Pb	622	16.3	15.0	7.08	30.0
Zn	598	67.0	65.0	23.77	150.0
Ag(S1)CHm	623	1.04	1.0	0.50	2.5
Ag(S2)F	628	0.71	1.0	0.32	1.6
Mn	602	589.6	570.0	232.6	1200.0
Au(G1)CHm	588	8.21	5.0	5.22	25.0
Au(G2)F	579	6.2	5.0	4.66	15.0
%HM			6.0%		

TABLE III

Kulfa Follow-Up

Background and Anomalous Values

Element	Medium					
	Heavy Mineral (227 samples)		SiH (43 Samples)		Soil (461 samples)	
	Median	Anomalous	Median	Anomalous	Median	Anomalous
MoF	1.0	3.0	1.0	2.0	4.0	15.0
CuF	30.0	90.0	70.0	160.0	40.0	250.0
CuFHM						
CuHM	50.0	180.0				
PbF	20.0	60.0	20.0	30.0	20.0	50.0
ZnF	60.0	160.0	80.0	100.0	90.0	200.0
AgF	0.8	1.5	0.9	1.2	0.8	1.7
AgFHM						
AgCHM	0.8	2.6				
HgF	25.0	50.0	40.0	80.0	35.0	160.0
AsF	10.0	50.0	15.0	45.0	15.0	120.0
MnF	500.0	1000.0	800.0	2000.0	700.0	2000.0
AuF	5.0	30.0	5.0	15.0	5.0	20.0
AuFHM						
AuCHM	5.0	50.0				
SbF	15.0	40.0	25.0	40.0	20.0	40.0
HMS						

The original stream sediment samples (5067D and 5084D) ran 495 ppm Zn and 336 ppm Zn respectively. Both showed a gold value of only 5 ppb in fine fraction. Follow-up samples confirmed this zinc anomaly as well as showing consistently high Mo and Cu values. One stream sediment sample (7600C) ran 1860 ppb Au in fine heavy mineral fraction. A sample 200 metres downstream of this produced only 30 ppb Au in fine heavy mineral fraction but showed 85 ppb Au in the coarse heavy mineral fraction.

Comparison of Table IV with the normal background and anomalous values of Table III reveals marked anomalies of Zn, Mo, As and Sb in the soils. The highest values occur in the northern half of the property. A few scattered gold anomalies turned up in the central area of the property, the highest being sample number P029 with ran 85 ppb Au.

Rock geochemistry results indicated a few high Mo, Cu and As values. Molybdenum ran as high as 47 ppm in sample 861C and copper hit a high of 650 ppm in sample 8621C. Gold results were all near background values in the rock samples. Summarized below are the rock types, sample number and any anomalous values obtained. Full geochemistry results of the rocks are shown on Dwg. No. KU.81-162.

<u>Sample #</u>	<u>Rock Type</u>	<u>Anomalous Values</u>
857C	Metabasalt with minor pyrite	As (1750 ppm)
858C	Schist	As (1970 ppm)
859C	Schist with minor quartz	Cu (580 ppm)
860C	Metabasalt	None
861C	Unknown	Mo (47 ppm)
862C	Unknown	None
8616D	Gossanous siliceous pod rock	None
8617D	Schist/gneiss minor pyrrhotite	None
8618D	Quartz vein, minor pyrite	None
8619D	Quartz vein, minor pyrrhotite	As (1700 ppm)
8620D	Gossanous gneiss, pyrite	None
8621D	Gossanous gneiss, pyrite	Cu (650 ppm), Ag (3.7 ppm)
8622D	Gossanous quartz	None
8623D	Gossanous quartz, pyrite	None
8625D	Quartz float with mariposite	None

CONCLUSIONS AND RECOMMENDATIONS

Follow-up work on the original anomalous stream sediment samples confirmed the high Zn and Cu values obtained. Several soil anomalies, especially in the north part of the property turned up. It is recommended that soil grids be set over these anomalies in an attempt to determine their extent and possibly isolate the source rock of the anomalies.

HJC/krl

COST STATEMENTWages

2 Sr. Geol. Assistant, 4 manday(s) (1981 Aug. 3,5)	\$ 249.84
4 Jr. Geol. Assistants, 4 manday(s) (1981 Aug.1,3)	<u>211.74</u>

	\$ 461.58
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Room & Board

<u>Location</u>	<u>Daily Rate</u>	<u>Date</u>	<u>No. of Days</u>	
Carcross	\$25.00	1981 Aug. 1,3,5	8	\$200.00

Transportation

a. Truck Rental (Avis-Whitehorse, YT): 2 day(s) @ \$35.85/day	\$ 71.70
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b. Helicopter in support of field work @ \$432.50/hr including fuel (Flying by Viking Helicopter Ltd. of Prince George)	
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Dates (1981): Aug. 1,3,5	No. of hrs: 2.5	<u>1,081.25</u>
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	\$1,152.95
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Analytical Services

<u>Type of Sample</u>	<u>No. of</u>	<u>Fraction Analyzed</u>	<u>Elements Analyzed</u>											<u>Unit Price</u>		
			F	FHM	CHM	Mo	Cu	Pb	Zn	Ni	Ag	Hg	As			Mn
Heavy Mineral	2	X		X	X	X	X		X		X	X	X	X	\$17.35	\$ 34.70
	9	X		X	X	X	X	X		X	X	X		X	17.75	159.75
	9	X			X				X				X	7.90	71.10	
Soil	9		X			X			X				X	7.90	71.10	
	31	X		X	X	X	X		X	X	X	X	X	22.75	705.25	
Rock	21			X	X	X	X	X	X	X	X	X	X	23.65	496.65	
	6	X		X	X	X			X	X			X	15.05	90.30	
	6	X				X	X		X				X	31.00	186.00	
	9	X		X	X	X	X	X	X	X	X		X	22.75	204.75	

Preparation - Rock	15 @ \$2.25/sample	33.75
- Heavy Mineral	11 @ \$20.00/sample	220.00
- Soil/Silt	52 @ \$0.85/sample	44.20

Mo(\$0.90), Cu(\$0.90), Pb(\$0.90), Zn(\$0.90), Ni(\$0.90), Ag(\$0.90/
\$2.00), Hg(\$4.50), As(\$3.00), Mn(\$0.90), Au(\$5.00), Sb(\$3.75)

	<u>\$2,317.55</u>
--	-------------------

Report Preparation

	<u>Cost</u>
Drafting: 1 day @ \$100/day	\$ 100.00
Typing: 1 day @ \$95.00	95.00
Map preparation 8 maps (9 sq ft) at 16¢/square foot	<u>11.52</u>
	\$ 206.52
<u>GRAND TOTAL:</u>	<u>\$4,338.60</u>

REFERENCES

- Christie, R. L.; "Geology: Bennett (104M)", G.S.C. Preliminary Series Map No. 19-1957, 1957.
- Neelands, J. T.; "Geochemical Report - Kultha Regional Stream Sediment Sampling Programme in the Dease Lake and Tagish Lake Areas", B.C. Assessment Report, 1982.
- Neelands, J. T.; "Kultha Follow-Up (104-J, 104-M)" Geological and Geochemical Report, B.C. Assessment Report, 1982.
- Wheeler, J. O.; "Whitehorse Map-Area, Yukon Territory (105-0)", G.S.C. Memoir 312, 1961.

QUALIFICATIONS

I, John Thomas Neelands, do hereby certify that:

1. I am a geologist residing at 118-B W. 14th Ave, Vancouver, British Columbia and employed by Du Pont of Canada Exploration Limited.
2. I am a graduate of Carleton University (1971) in Ottawa, Canada, and hold a B.Sc., degree in Geology.
3. I am a member of the Geological Association of Canada and of the Association of Exploration Geochemists.
4. I have been practising my profession for the past ten years and have been active in the mining industry for the past sixteen years.
5. Between 1981 May and 1981 October, I supervised and participated in the field programme described in this report on behalf of Du Pont of Canada Exploration Limited.



J.T. Neelands
1982 May

QUALIFICATIONS

I, Lisa Dawne Holmgren, do hereby certify that:

1. I am a geologist residing at 68 Wood Cres., SW, Calgary, Alberta and am employed by Du Pont of Canada Exploration Limited.
2. I am a graduate of The University of British Columbia with a B.Sc. (Honors) degree in geology.
3. I am an Associate of the Geological Association of Canada.
4. I have been practicing my profession in geology continuously for the past two years in British Columbia and Yukon Territory, Canada.
5. Between 1981 May and 1981 August, I participated in the field programme described in this report on behalf of Du Pont of Canada Exploration Limited.



L. D. Holmgren
1982 May

APPENDIX I

Laboratory Procedure

*MIN-EN Laboratories Ltd.**Specialists in Mineral Environments*

Corner 15th Street and Bewicke

705 WEST 15th STREET

NORTH VANCOUVER, B.C.

CANADA

ANALYTICAL PROCEDURE REPORTS FOR ASSESSMENT WORKPROCEDURES FOR Mo, Cu, Cd, Pb, Mn, Ni, Ag, Zn, As, F

Samples are processed by Min-En Laboratories Ltd., at 705 W. 15th St., North Vancouver Laboratory employing the following procedures.

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by a jaw crusher and pulverized by ceramic plated pulverizer.

1.0 gram of the samples are digested for 6 hours with HNO_3 and HClO_4 mixture.

After cooling samples are diluted to standard volume. The solutions are analyzed by Atomic Absorption Spectrophotometers.

Copper, Lead, Zinc, Silver, Cadmium, Cobalt, Nickel and Manganese are analysed using the CH_2H_2 -Air flame combination but the Molybdenum determination is carried out by C_2H_2 - N_2O gas mixture directly or indirectly (depending on the sensitivity and detection limit required) on these sample solutions.

For Arsenic analysis a suitable aliquote is taken from the above 1 gram sample solution and the test is carried out by Gutzeit method using $\text{Ag CS}_2\text{N} (\text{C}_2\text{H}_5)_2$ as a reagent. The detection limit obtained is 1.2 ppm.

Fluorine analysis is carried out on a 200 milligram sample. After fusion and suitable dilutions the fluoride ion concentration in rocks or soil samples are measured quantitatively by using fluorine specific ion electrode. Detection limit of this test is 10 ppm F.

*MIN-EN Laboratories Ltd.**Specialists in Mineral Environments*

Corner 15th Street and Bewicke

705 WEST 15th STREET

NORTH VANCOUVER, B.C.

CANADA

ANALYTICAL PROCEDURE REPORTS FOR ASSESSMENT WORKPROCEDURE FOR GOLD GEOCHEMICAL ANALYSIS.

Geochemical samples for Gold processed by Min-En Laboratories Ltd., at 705 W. 15th St., North Vancouver Laboratory employing the following procedures.

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed and pulverized by ceramic plated pulverizer.

A suitable sample weight 5.0 or 10.0 grams are pre-treated with HNO_3 and HClO_4 mixture.

After pretreatments the samples are digested with Aqua Regia solution, and after digestion the samples are taken up with 25% HCl to suitable volume.

At this stage of the procedure copper, silver and zinc can be analysed from suitable aliquote by Atomic Absorption Spectrophotometric procedure.

Further oxidation and treatment of at least 75% of the original sample solutions are made suitable for extraction of gold with Methyl Iso-Butyl Ketone.

With a set of suitable standard solution gold is analysed by Atomic Absorption instruments. The obtained detection limit is 5. ppb.

1981 SAMPLE RESULTS

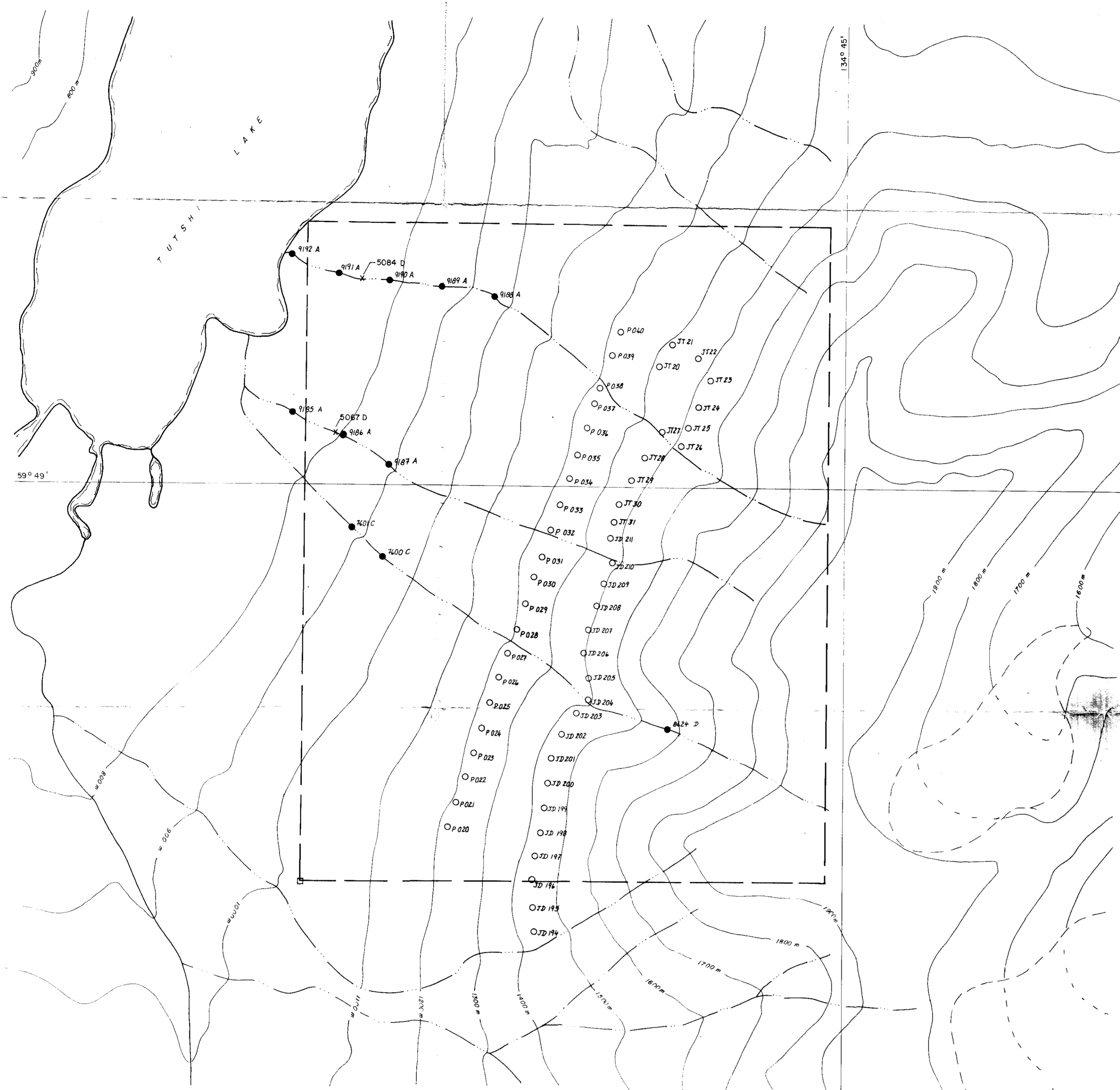
Sample	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Hg ppb	As ppm	Mn ppm	Au ppb	Sb ppm
JD 194	3	65	30	73	1.0	55	104	470	5	30
JD 195	4	87	82	209	1.4	90	53	990	10	48
JD 196	2	87	171	289	2.0	30	193	1170	20	58
JD 197	3	142	69	231	2.0	30	193	1170	15	85
JD 198	4	145	64	177	1.5	75	111	900	10	72
JD 199	2	138	73	208	2.5	80	780	860	5	80
JD 200	6	116	61	146	2.2	90	480	900	10	45
JD 201	6	167	40	165	1.8	40	390	870	5	52
JD 202	8	80	53	164	1.7	40	77	950	5	48
JD 203	13	96	52	158	1.9	80	63	1040	5	52
JD 204	8	97	48	196	1.9	50	173	820	10	78
JD 205	4	83	29	107	1.7	45	38	990	5	75
JD 206	4	55	47	72	2.0	25	340	700	55	160
JD 207	9	50	44	66	2.0	45	183	690	20	180
JD 208	17	92	54	279	2.0	50	420	990	10	103
JD 209	7	120	210	232	2.8	55	1900	920	15	85
JD 210	51*	138*	53*	680*	2.0*	50*	960*	1080*	10*	100*
JD 211	12	210	58	296	2.3	75	1190	320	20	20
JT 20	4	76	37	154	1.5	20	280	870	5	44
JT 21	11	135	50	279	2.2	45	175	1410	5	76
JT 22	43	250	60	1300	2.4	25	89	2700	5	95
JT 23	37	108	40	370	1.6	10	82	1260	5	68
JT 24	73	216	52	830	2.0	45	75	2280	5	75
JT 25	69	220	58	1030	2.1	15	127	2100	5	105
JT 26	24	110	42	398	1.8	5	88	1620	5	18
JT 27	34	129	49	570	1.7	5	122	1590	5	82
JT 28	109	150	53	710	2.2	10	157	1320	10	112
JT 29	29	95	36	254	1.3	10	430	1100	5	54
JT 30	49	158	50	650	2.0	20	410	1390	5	85
JT 31	20	134	66	348	2.2	15	700	1700	5	90

* -40 Mesh

Sample	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Ag ppm	Hg ppb	As ppm	Mn ppm	Au ppb	Sb ppm
Soil P 020	2	80	71	185	35	1.8	75	26	960	10	40
P 021	4	43	30	131	24	1.3	40	12	600	5	35
P 022	2	51	17	72	19	1.4	85	5	790	10	14
P 023	3	68	26	138	42	1.2	40	100	700	5	74
P 024	2	96	50	452	76	1.9	105	121	1140	5	70
P 025	4	78	48	197	42	1.5	20	153	920	10	80
P 026	2	40	31	146	27	1.2	35	102	860	5	26
P 027	2	72	35	124	50	1.5	10	174	700	5	38
P 028	1	41	28	178	40	1.6	40	140	950	15	40
P 029	2	38	39	141	48	1.8	45	224	890	85	75
P 030	6	76	30	189	73	1.8	35	219	680	10	15
P 031	6	81	40	221	75	2.1	80	530	1080	5	35
P 032	16	77	34	254	78	1.7	55	215	870	5	90
P 033	6	70	32	148	74	1.8	40	362	760	10	90
P 034	2	87	8	231	76	1.8	25	1050	1210	10	95
P 035	4	66	32	101	32	2.0	85	320	640	65	5
P 036	1	20	18	49	20	1.0	10	60	440	5	4
P 037	6	36	26	116	31	1.3	15	234	425	10	32
P 038	17	96	34	230	70	1.3	80	181	860	5	76
P 039	8	40	25	127	49	1.2	40	213	520	5	58
P 040	6	86	18	133	66	1.0	55	53	335	10	26

LEGEND

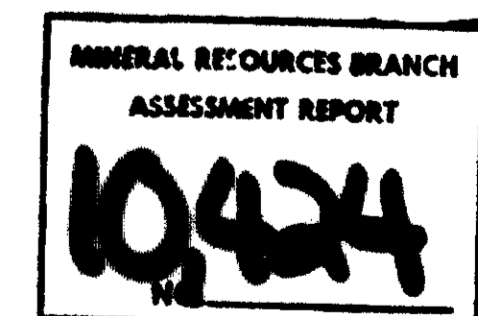
- P 040 SILT SAMPLE LOCATION and NUMBER
- 918 A SIEVED HEAVY MINERAL SAMPLE LOCATION and NUMBER
- X - 5067 D ORIGINAL SIEVED HEAVY MINERAL SAMPLE LOCATION (1981) and NUMBER



Sample	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Ag ppm	Hg ppb	As ppm	Mn ppm	Au ppb	Sb ppm	H.M. wt. F/C	H.M. % F/C	Orig. wt. F/C
-10 Sieve														
5067 D	28	102	43	495	1.5	3.9	20	122	868	745	1860	10*	85	128
5084 D	14	84	36	336	1.2	2.8	10	145	800	740	30	85*	76	118
-14 Sieve														
7600 C	20	17	81	269	46	165	274	434	1.5	3.9	20	122	868	745
7601 C	16	18	83	230	46	150	250	395	1.6	2.8	10	145	800	740
Silt														
8624 D	12	80	152	176	48	288	90	2.3	2.3	10	109	960	5	5

* -40 Mesh

Sample	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Ag ppm	Hg ppb	As ppm	Mn ppm	Au ppb	Sb ppm	H.M. wt. F/C	H.M. % F/C	Orig. wt. F/C
-14 Sieve														
9185 A	1	26	21	36	14	77	27	2.4	2.4	10	42	500	15	30
9186 A	1	32	32	54	15	91	23	5.0	1.2	25	46	480	5	5
9187 A	2	36	25	83	37	84	30	2.0	2.0	25	122	740	10	10
9188 A	20	84	390	223	28	336	86	1.6	2.9	15	145	940	10	10
9189 A	14	72	410	181	34	285	74	6.0	2.3	10	98	820	15	20
9190 A	14	74	302	167	20	283	72	3.1	2.8	45	104	870	15	20
9191 A	12	78	100	143	24	321	84	1.0	1.0	30	98	900	5	20
9192 A	13	76	231	161	36	287	74	1.9	2.4	25	101	880	25	25



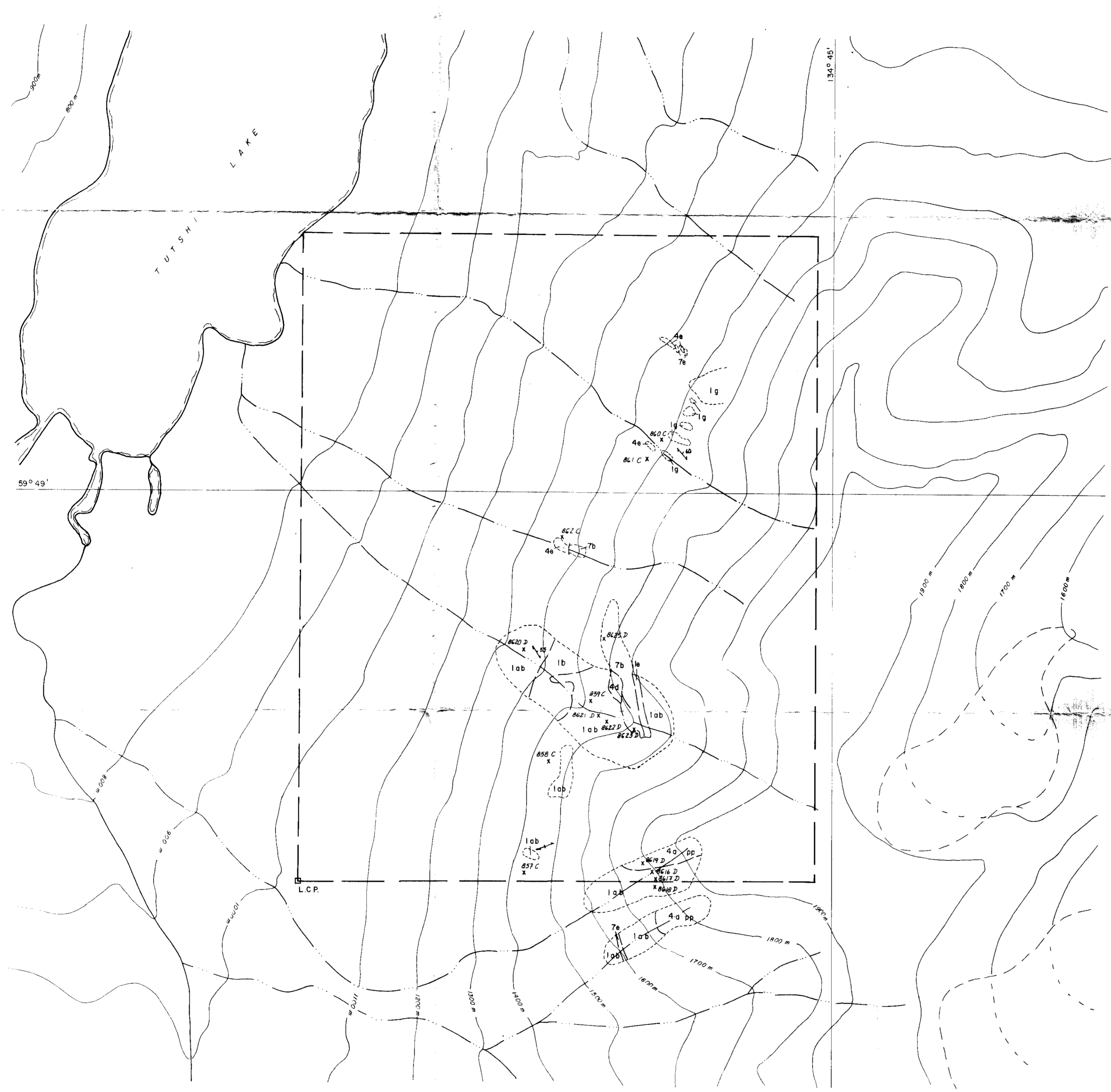
EXPLORATION
CANADA

**KULTA PROJECT
TUTS CLAIM
GEOCHEMISTRY**
Au, Ag, As, Cu, Hg, Mn, Mo, Ni, Pb, Sb, Zn & %HM
ATLIN LAKE AREA, BRITISH COLUMBIA

SCALE: 1" = 10000'

MAPPED BY: J.T.N., L.O.H. DATE: 81 08 05
DRAWN BY: C.H.K. DATE: 82 01 27

N.T.S. No. 104 M 15 W
ACCT No. 351-40
DRWG No. KU. 81-163



- LEGEND**
- JURASSIC OR LATER**
- POST LOWER JURASSIC
- 7 COAST INTRUSIONS
 7a) Granite 7b) Granodiorite 7c) Quartz diorite
 7d) Diorite 7e) Felsic dyke 7f) Mafic dyke
- JURASSIC**
- LOWER JURASSIC AND LATER
- LABERGE GROUP
 6a) Conglomerate 6b) Greywacke 6c) Argillite
 6d) Siltstone 6e) Hornfels
- PENNSYLVANIAN TO TRIASSIC
- 5a) Felsic dyke 5b) Mafic dyke
- 4a) Rhyolite 4b) Rhyodacite 4c) Dacite
 4d) Andesite 4e) Basalt
- 3a) Volcanic breccia 3b) Volcanic conglomerate
 3c) Tuff
- 2a) Siltstone 2b) Limestone
- PRE-PERMIAN
- 1a) Schist 1b) Gneiss 1c) Phyllite 1d) Limestone
 1e) Quartzite 1f) Arsenite 1g) Slate

- SYMBOLS**
- OUTCROP
- CONTACT
- x 8618 D ROCK SAMPLE LOCATION AND NUMBER
- △ MINERAL OCCURRENCE
- L.C.P. CLAIM LINE AND LEGAL CORNER POST
- ∠ SCHISTOSITY - STRIKE and DIP

ROCK GEOCHEMISTRY RESULTS

Sample	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Ag ppm	Hg ppb	As ppm	Au ppb	Sb ppm
857 C	2	192	40				10	1750		38
858 C	25	122	32				10	1970		25
859 C	4	580	28				15	4		74
860 C	2	21	30				5	54		10
861 C	47	44	69				10	28		54
862 C	6	30	29				10	15		12
8616 D	2	177	7	35	14	1.2	5	37	5	16
8617 D	1	40	25	100	53	1.6	5	194	5	25
8618 D	5	94	18	42	36	2.1	20	69	5	72
8619 D	1	23	4	5	3	0.6	80	1700	15	10
8620 D	4	40	13	96	15	1.4	10	7	10	42
8621 D	4	650	19	30	16	3.7	25	34	20	108
8622 D	1	295	7	6	21	1.1	35	26	15	36
8623 D	1	161	6	20	4	1.2	45	32	5	25
8625 D	1	8	4	7	16	0.2	10	17	5	2

ROCK ASSAYS

	Pb %	Zn %	Ag oz/T	Au oz/T
857 C	0.01	0.01	0.10	0.007
858 C	0.01	0.01	0.10	0.003
859 C	0.01	0.01	0.11	0.006
860 C	0.01	0.01	0.03	0.006
861 C	0.01	0.01	0.10	0.005
862 C	0.01	0.01	0.08	0.002

MINERAL RESOURCES BRANCH
 ASSESSMENT REPORT
 19424

DU PONT EXPLORATION CANADA

**KULTA PROJECT
 TUTS CLAIM
 GEOLOGY**

ATLIN LAKE AREA, BRITISH COLUMBIA

SCALE: 1 INCH = 633 FEET

MAPPED BY: J.T.N., L.D.M. DATE: 81 08 05 DRAWN BY: C.H.K. DATE: 82 01 27

REVISED: N.T.S. No. 104 M IS W ACCT No. 351-40 DRWG. No. KU, B1-162