82-369-10425 6

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

10,425

No

DU PONT OF CANADA EXPLORATION LIMITED

GEOLOGICAL AND GEOCHEMICAL REPORT

ON THE ANGE CLAIMS

CASSIAR MINING DIVISION

(BRITISH COLUMBIA)

LAT. 59°56'N, LONG. 134°157'W

NTS: 104-M/15W

OWNER OF CLAIMS: DU PONT OF CANADA EXPLORATION LIMITED

OPERATOR: DU PONT OF CANADA EXPLORATION LIMITED

Submitted by: H.J. Copland,
J.T. Neelands
Date : 1982 May

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INTRODUCTION

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

As the result of an anomalous gold sample taken from the west side of Bennett Lake, the area was staked as the ANGE property.

LOCATION AND ACCESS

The ANGE claim is located within the Cassiar Mining Division, NTS 104-M-15W (Lat. 59°56'N, Long. 134°57'W). The property is located on the west side of Bennett Lake and extends from the lake up the east slope of the Bennett Range. The nearest population centre is Carcross, YT, 30 kilometres to the northeast. The claim is accessible by helicopter from Carcross, or by boat on Bennett Lake. The White Pass and Yukon Railway runs along the opposite side of Bennett Lake, approximately 1 kilometre from the property.

TOPOGRAPHY AND VEGETATION

The claim lies on the west side of Bennett Lake in the Bennett Range of the Cassiar Mountains. Elevation varies from a high of 1800 metres to a low of 655 metres at Bennett Lake. The property is characterized by a small flat plateau in the west sloping steeply down to the lake. A number of small creeks which are usually dry during the summer months flow southeastward into Bennett Lake. Outcrop is abundant even in the lower elevations. Scattered stands of spruce, alder and willow are present to an elevation of 1100 metres. Above this level, shrubs and grasses predominate.

PROPERTY DEFINITION

The ANGE property consists of two mineral claims, both of 6 units. See Dwg. KU.81-250 for claim locations. The claims are in good standing until 1982 June 23. The BE 1 claim (Du Pont of Canada Exploration Limited adjoins ANGE 1 to the east.

Claim	Record No.	Tag No.	Date Recorded
ANGE 1	1468	75824	1981 June 23
ANGE 2	1467	75823	1981 June 23

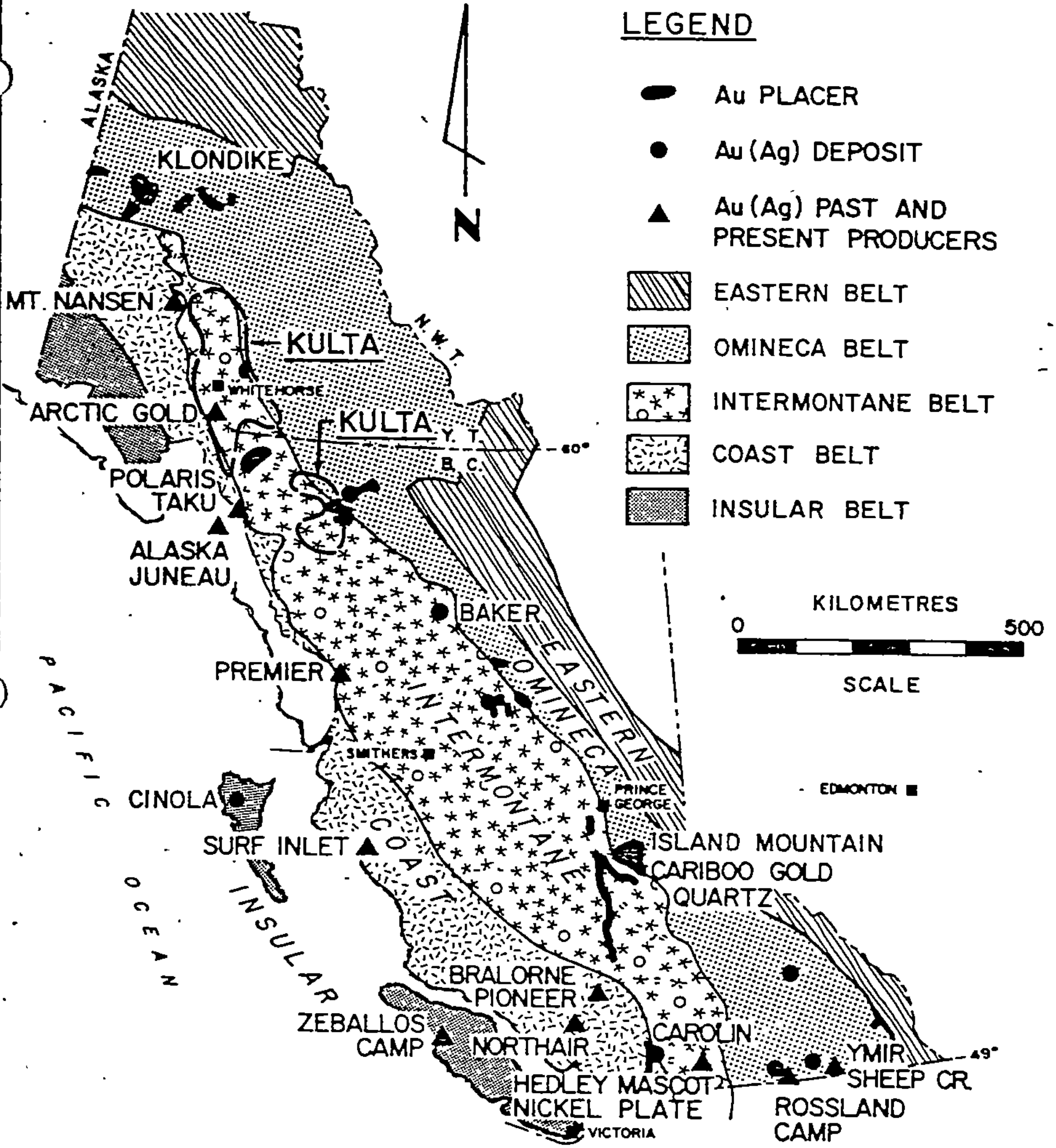


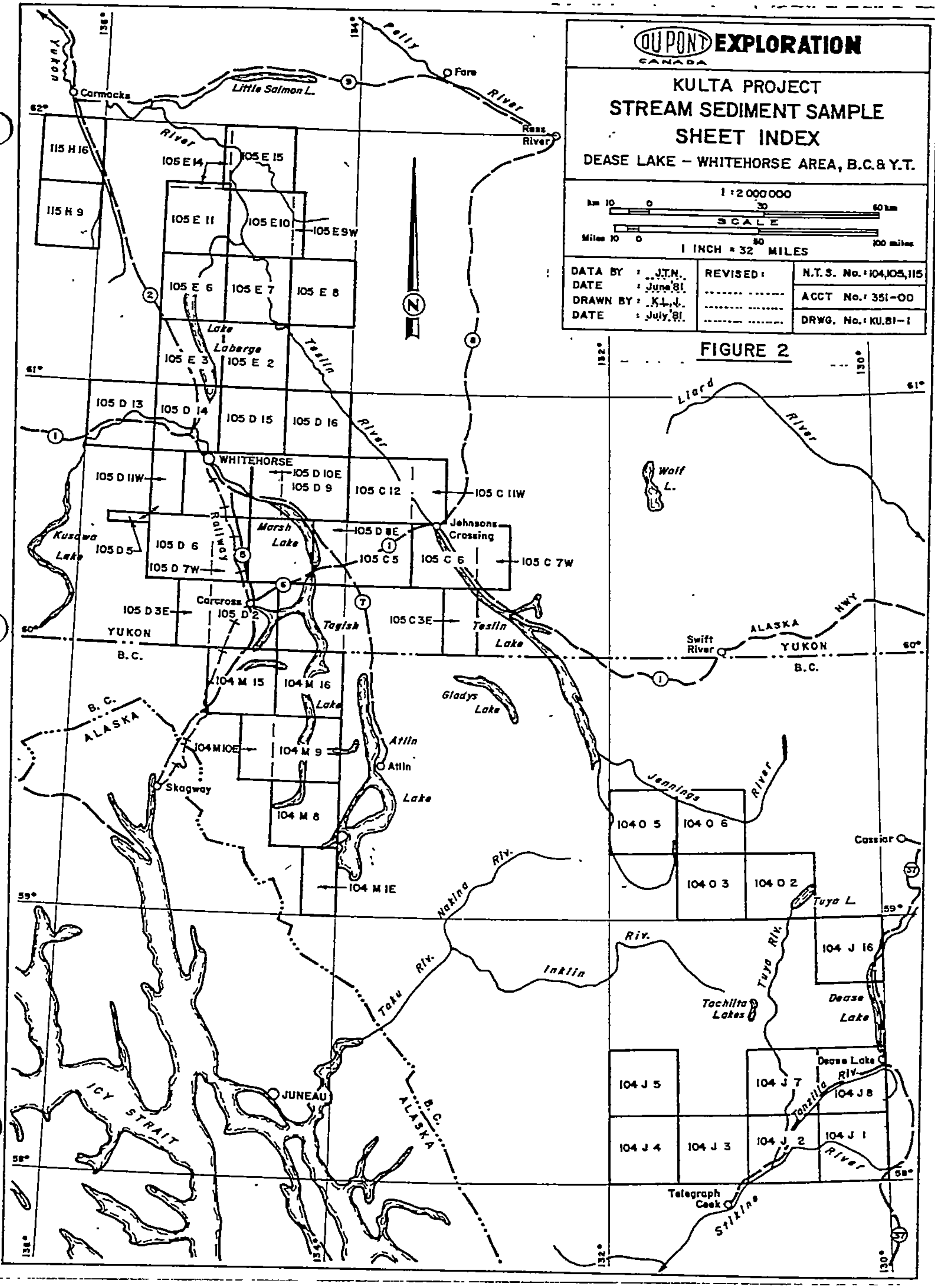
FIGURE I

KULTA PROJECT AREAS

PRINCIPAL LODE & PLACER GOLD DEPOSITS
CANADIAN CORDILLERA

K.L.J. 81 11 26

DRWG No. KU.81-1a


DUPONT CANADA EXPLORATION
KULTA PROJECT
STREAM SEDIMENT SAMPLE
SHEET INDEX
DEASE LAKE – WHITEHORSE AREA, B.C. & Y.T.
1 : 2 000 000
km 10 0 30 60 km
SCALE
Miles 10 0 50 100 miles
1 INCH = 32 MILES
DATA BY : J.T.N.
DATE : June '81
DRAWN BY : K.L.J.
DATE : July '81
REVISED :
N.T.S. No. : 104,105,115
ACCT No. : 351-00
DRWG. No. : KU.81-1
Yukon
Carmacks
Little Salmon L.
Pelly River
Faro
Ross River
River
115 H 16
115 H 9
105 E 14
105 E 15
105 E 11
105 E 10
105 E 9W
105 E 6
105 E 7
105 E 8
Lake Laberge
105 E 3
105 E 2
Teslin River
105 D 13
105 D 14
105 D 15
105 D 16
WHITEHORSE
105 D 11W
105 D 10E
105 D 9
105 C 12
105 C 11W
Johnsons Crossing
Kusawa Lake
Marsh Lake
Railway
105 D 6
105 D 5
105 D 8E
105 D 7W
105 C 5
105 C 6
105 C 7W
Carcross
105 D 3E
105 D 2
Tagish
105 C 3E
Teslin Lake
YUKON
B.C.
104 M 15
104 M 16
Lake
Gladys Lake
B.C.
ALASKA
104 M 10E
104 M 9
Atlin
Atlin Lake
Skagway
104 M 8
104 M 1E
Liard River
Wolf L.
ALASKA HWY
Swift River
YUKON
B.C.
Jennings River
104 O 5
104 O 6
104 O 3
104 O 2
Cassiar
Nakina Riv.
Tuya L.
Tuya Riv.
Inklin Riv.
104 J 16
Taku Riv.
Tachilta Lakes
Dease Lake
104 J 5
104 J 7
Dease Lake
Tanzilla Riv.
104 J 8
JUNEAU
ICY STRAIT
B.C.
ALASKA
104 J 4
104 J 3
104 J 2
104 J 1
River
Telegraph Ceek
Stikine
62°
61°
60°
59°
58°
136°
134°
132°
130°
FIGURE 2

DUPONT EXPLORATION
CANADA

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

1 : 2 000 000

km 10 0 30 80 km

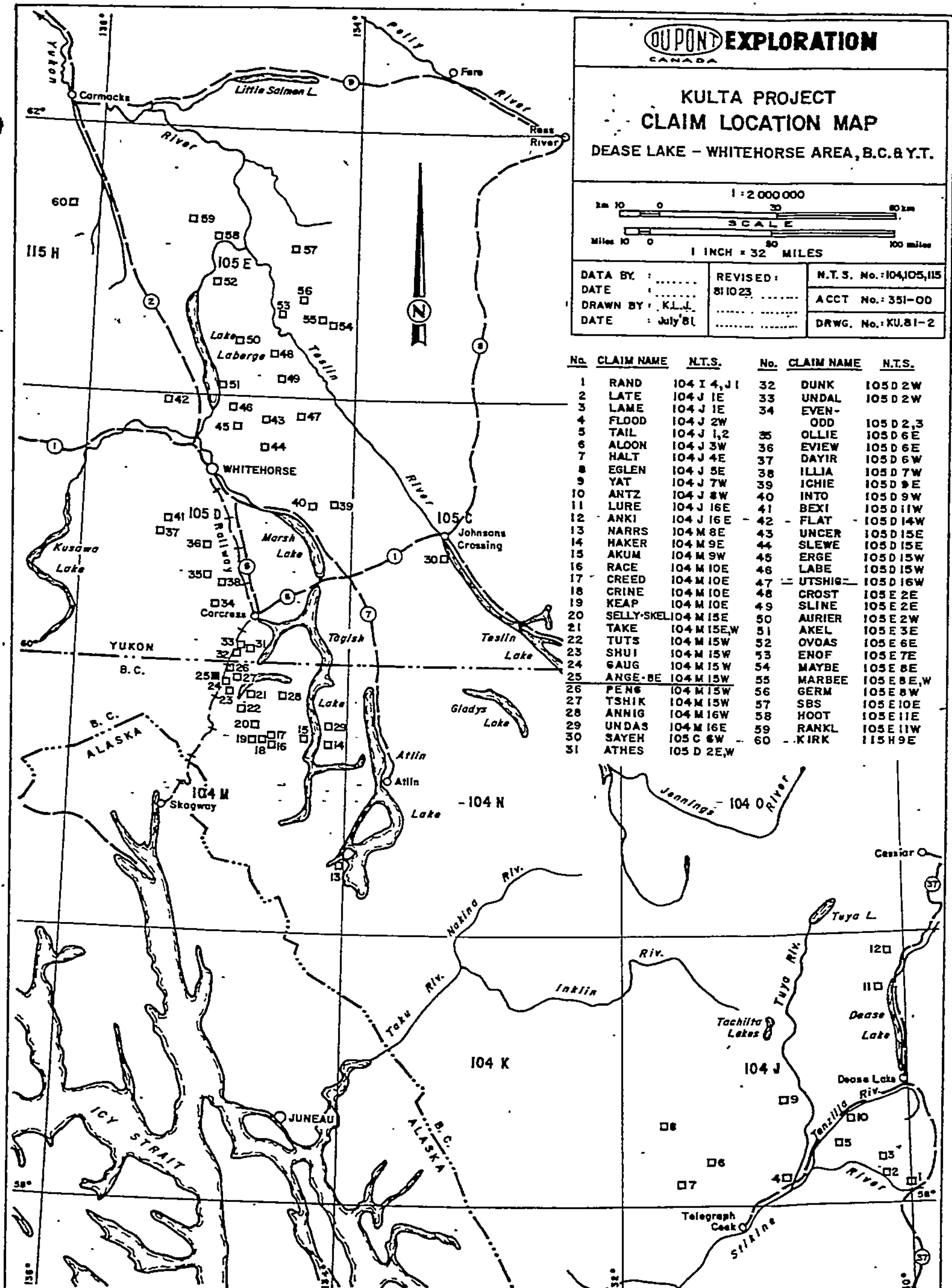
SCALE

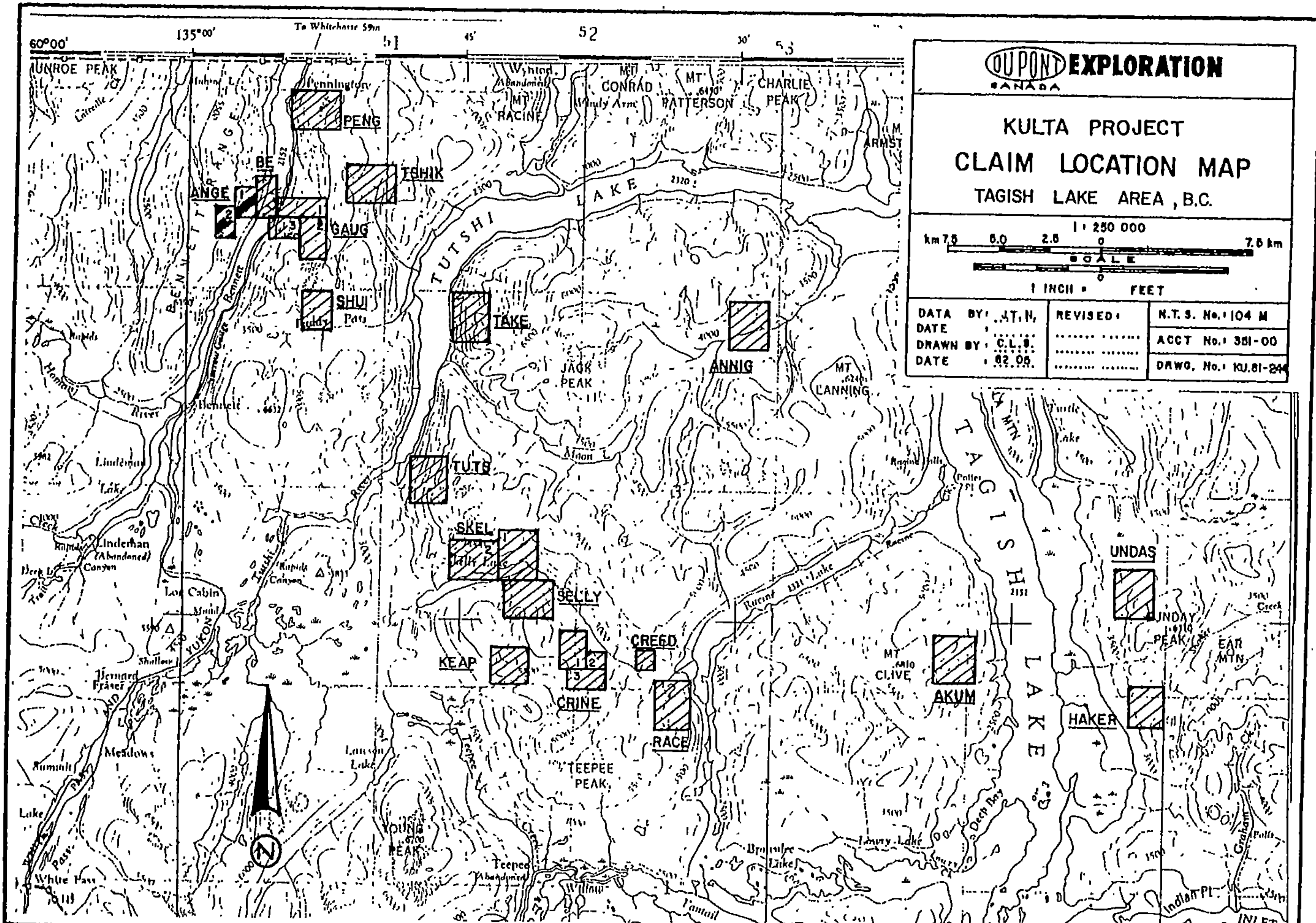
Miles 10 0 50 100 miles

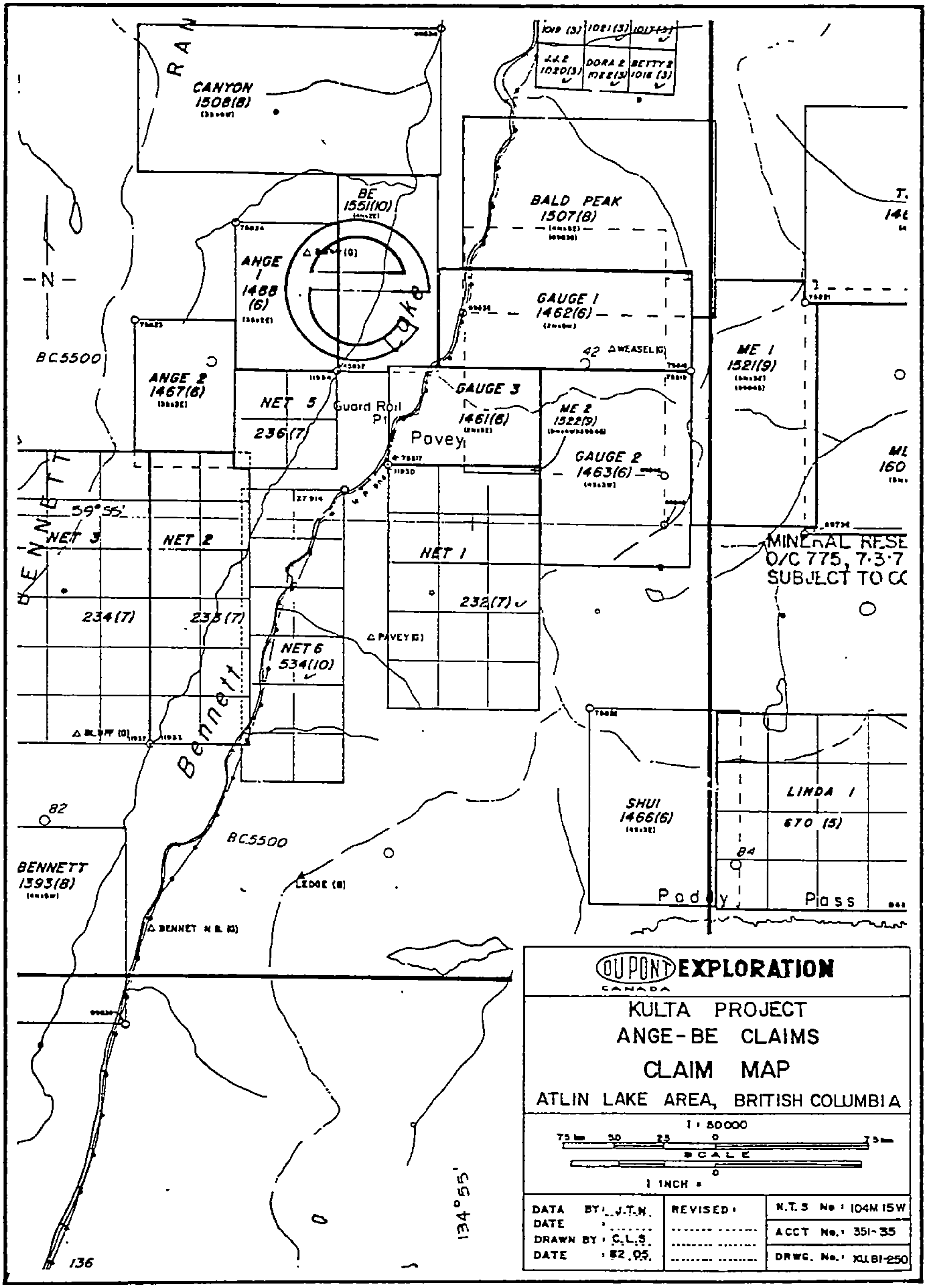
1 INCH = 32 MILES

DATA BY :	REVISED :	N.T.S. No. : 104,105,115
DATE :	811023	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-ODD	105 D 2,3
4	FLOOD	104 J 2W	35	OLLIE	105 D 6E
5	TAIL	104 J 1,2	36	EVIEW	105 D 6E
6	ALOON	104 J 3W	37	DAYIR	105 D 6W
7	HALT	104 J 4E	38	ILLIA	105 D 7W
8	EGLEN	104 J 5E	39	ICHIE	105 D 9E
9	YAT	104 J 7W	40	INTO	105 D 9W
10	ANTZ	104 J 8W	41	BEXI	105 D 11W
11	LURE	104 J 16E	42	FLAT	105 D 14W
12	ANKI	104 J 16E	43	UNCER	105 D 15E
13	NARRS	104 M 8E	44	SLEWE	105 D 15E
14	HAKER	104 M 9E	45	ERGE	105 D 15W
15	AKUM	104 M 9W	46	LABE	105 D 15W
16	RACE	104 M 10E	47	UTSHIG	105 D 16W
17	CREED	104 M 10E	48	CROST	105 E 2E
18	CRINE	104 M 10E	49	SLINE	105 E 2E
19	KEAP	104 M 10E	50	AURIER	105 E 2W
20	SELLY-SKEL	104 M 15E	51	AKEL	105 E 3E
21	TAKE	104 M 15E,W	52	OVDAS	105 E 6E
22	TUTS	104 M 15W	53	ENOF	105 E 7E
23	SHUI	104 M 15W	54	MAYBE	105 E 8E
24	GAUG	104 M 15W	55	MARBEE	105 E 8E,W
25	ANGE-BE	104 M 15W	56	GERM	105 E 8W
26	PENG	104 M 15W	57	SBS	105 E 10E
27	TSHIK	104 M 15W	58	HOOT	105 E 11E
28	ANNIG	104 M 16W	59	RANKL	105 E 11W
29	UNDAS	104 M 16E	60	KIRK	115 H 9E
30	SAYEH	105 C 6W			
31	ATHES	105 D 2E,W			




DUPONT EXPLORATION
CANADA
KULTA PROJECT
CLAIM LOCATION MAP
TAGISH LAKE AREA, B.C.
1 : 250 000
km 7.5
5.0
2.5
0
7.5 km
SCALE
1 INCH =
FEET
DATA BY: J.T.N.
DATE
DRAWN BY: C.L.S.
DATE: 82.06.
REVISED:
N.T.S. No.: 104 M
ACCT No.: 381-00
DRWG. No.: KU.81-24
60°00'
135°00'
To Whitehorse
52
45'
30'
53
PENG
TGHIK
BE
ANGE
GAUG
SHUI
TAKE
ANNIG
TUTS
SKEL
SELLY
KEAP
CRINE
CREED
RACE
AKUM
UNDAS
HAKER
MT CONRAD
MT PATTERSON
CHARLIE PEAK
MT RACINE
TUTSHI
LAKE
TAGISH
LAKE
JACK PEAK
MT LANNING
TEEPEE PEAK
YOUNG PEAK
MT CLIVE
SUNDAY PEAK
EAR MTN
Racine Lake
Bennett
Lake
Log Cabin
Lindeman
INLET
N



DUPONT EXPLORATION CANADA

KULTA PROJECT
ANGE-BE CLAIMS
CLAIM MAP
ATLIN LAKE AREA, BRITISH COLUMBIA

1 : 50000

SCALE

1 INCH =

DATA BY: J.T.H.	REVISED:	N.T.S. No: 104M 15W
DATE :		ACCT No.: 351-35
DRAWN BY: C.L.S.		
DATE : 82.05		DRWG. No.: XII 81-250

PREVIOUS WORK

No previous work is recorded concerning the property. Evidence of an old working lies along the lake east of ANGE 1, within the BE 1 claim. The property was staked in 1981 June on the basis of a gold-rich soil sample taken from the workings. Follow-up work in August an September consisted of both soil and rock sampling. The property was observed to be underlain by granitic and metavolcanic rocks.

PERSONNEL

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

1981 August 7 & 8: H. Copland (Senior Geological Assistant)
L. Cunningham (Junior Geological Ass't)

1981 Sept. 25: J.T. Neelands (Geologist)
J. Dupas (Junior Geological Assistant)
L. Harland (Junior Geological Assistant)

GEOLOGY

Regional 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 synclinorium (Wheeler 1961, p. 103). All Pre-Cretaceous rocks show this trend. Locally tight folding has been observed, possibly due to intrusive placement.

Economic mineralization has been exploited in the area from various sources. The Engineer Mine (Au,Ag) is hosted by quartz-calcite veins occuring 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 ANGE property is underlain by two major rock types. A wedge of Pre-Permian metamorphosed volcanic rocks is surrounded by granitic rocks of the Cretaceous Coast Mountain Intrusions. The granite ranges from a K-feldspar porphyry in the west to a non-porphyritic rock near the contact. The metamorphic rocks appear to have originally been mafic volcanic rocks. The hornfels occurs near the contact, and the metamorphic rocks occur in a 300-400 metre wide band between the intrusion. The lateral extent of this unit has yet to be established.

The following is a brief description of the units observed thus far on the property:

a. Granite - Map Unit 7a

This unit is coarse grained, equigranular and non-porphyritic near the contact with the metamorphic rocks. The rock is medium grey in colour, weathering to grey; it commonly has a slight orangey iron stain. Away from the contact, the rock assumes a porphyritic character. Phenocrysts of K-feldspar and quartz up to 2 cm across make-up 15-30% of the rock. Minor aplite veins up to 6 centimetres in width occur within this unit.

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.

b. Metavolcanic Rocks - Map Units la,c

This unit is commonly dark green to black, weathering dark green with a prominent iron staining. The rock is very fine-grained with minor dark and light banding (4 mm width) apparent in some pieces. Contact with the granitic rocks is sharp with hornfelsic development within several metres of the contact. Minor disseminated pyrite is common throughout this unit.

Structure

No bedding was evident in the metamorphic rocks. They show a high degree of irregular fracturing and a lack of a regular measurable foliation.

Mineralization

The entire unit of metavolcanic rocks is covered by a strong gossan. Minor disseminated pyrite throughout these rocks is responsible for this colour. Several talus pieces of granite with quartz veining were found in the upper slopes of ANGE 1 near the Triangulation Station. The quartz is heavily iron stained and contains up to 10% of pyrrhotite, galena pyrite and chalcopyrite. In the same area, a talus piece of metavolcanics contained up to 5% galena. Source of these rocks was not located. A small discontinuous quartz vein containing galena, arsenopyrite, and pyrite occurs at the old workings site, just east of ANGE 1 in the BE 1 claims.

GEOCHEMISTRY

Procedure

A total of 27 soil, 6 rock and 1 stream sediment sample were collected during 1981. Soil sampling was carried out on a 25 metre spacing along the higher slopes of ANGE 1. Rock samples were collected at random sites throughout the property. A lack of stream sediments due to the steep gradients of the creeks prevented further sampling of this nature.

The soil samples were collected from below the organic layer with a mattock and placed in a kraft paper envelope. A sample number was marked on the bag and on flagging tape which was secured to the sample site.

All samples were shipped to Min-En Laboratories Limited, North Vancouver for preparation and analysis. All samples were analyzed for Mo, Cu, Pb, Zn, Ag, Hg, As, Au and Sb. In addition, the soils and sediments were also analyzed for Mn and the rocks for Ni. All samples were sieved to -80 mesh. The stream sediment sample was initially sieved to -20 mesh and a heavy mineral separation and analysis was performed for Cu, Ag and Au. Refer to Appendix I for details on the analytical procedures.

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 medium 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 ANGE 1 & 2 are tabled on Dwg. No. KU.81-169. These results have also been tabulated as to frequency distribution of elements occuring in soils (Table IV).

The original stream sediment sample (9702B) was anomalous in Au (20,000 ppb in fine heavy mineral sample) Ag (220 ppm in fine heavy mineral sample) and Pb (2220 in fines). Comparison of Tables III and IV indicate an overall anomalous nature of the soils in most elements. Only Hg and Au showed a trend to normal background levels. The greatest concentration of anomalous values occurred in the area where the mineralized talus samples were found.

Rock geochemistry revealed numerous anomalies in most elements tested. Values of Cu, Pb, Zn, Ag and Au were especially notable in a few samples. This reflects the galena, chalcopyrite and arsenopyrite seen in the talus pieces. A sample (8447D) from the quartz vein east of ANGE 1 provided the highest Au value (3200 ppb in fines). Summarized on Table V are the rock types tested and the most anomalous values.

Values for all elements tested in the rock samples are tabulated on Drawing No. KU.81-168.

CONCLUSIONS AND RECOMMENDATIONS

Follow-up work has located a number of anomalies in soils and in the rocks, northeast of the original anomalous creek sample. Talus pieces containing mineralized quartz veins have been

TABLE II

Kulta Regional Stream Sediment Sampling Programme

Background and Anomalous Values

Element	No. of Samples	Mean ppm	Median Background ppm	Standard Deviation	95% Threshold ppm
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

Kulta 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
HM%						

Table IV
Soil ANGE
Frequency Distribution of Elements

Class Interval ppm/ppb	Mo	Cu			Pb	Zn	Ag			Hg	As	Mn	Au			Sb	H.
	F	F	FHM	CHM	F	F	F	FHM	CHM	F	F	F	F	FHM	CHM	F	
0.1																	
0.2																	
0.3																	
0.4																	
0.5																	
0.6							1										
0.7							1										
0.8							1										
0.9																	
1.0																	
1.1																	
1.2																	
1.3							1										
1.4																	
1.5																	
1.6-1.7																	
1.8-1.9							3										
1.9-2.0							3										
2.1-2.3							3										
2.4-2.6							5										
2.7-2.9							6										
3.0-3.9							2										
4.0-4.9	1						1									1	
5.0-5.9	1						1										
6.0-10	7						1			2			18			1	
11 - 15	7	1								3	1		4			2	
16 - 20	4				1					5			1				
21 - 25	3									5			3			1	
26 - 30	3									4	1						
31 - 35					4	1				3						4	
36 - 40	1				2					1	2					2	
41 - 45										1							
46 - 50					1					1						4	
51 - 60					1	1				1							
61 - 70					7						1					5	
71 - 80		2			2	1					2		1				
81 - 90					4						2					3	
91 -100					1						1					2	
101-120					1	1					2						
121-140						2					2						
141-160		1			1	2											
161-180						1					2						
181-200		1				3					5						
201-250		1				5											
251-300		1			2	1											
301-350		1				1					4	2					
351-400		3				2						1					
401-450		5															
451-500																	
501-600		8				1											
601-700												3					
701-800		3										1					
801-900																	
901-1000												1					
1001-2000												3					
2001-3000												12					
3001-4000												1					
4001-5000																	
>5000																	

TABLE V

Description of Rock Samples

Sample No.	Rock Type	Anomalous Values
850C	Granite	Cu (369 ppm)
850C	Metavolcanic	None
8437D	Quartz talus with galena chalcopyrite	Pb(22,700 ppm) Zn(8400),Ag(270)
8438D	Metavolcanic with galena, pyrite	Ag (3250 ppm), Au(570 ppb)
8439D	Metavolcanic	Pb (550 ppm
8447D	Quartz vein with galena, arsenopyrite	As (13,400 ppm),

found in the upper slopes. These veins appear similar in nature to the vein east of ANGE 1 near the old workings. Detailed investigation should be carried out to find the source of the quartz in the upper zone and possible relations to the lower vein. Sampling on the areas above the original anomalous creek should also be initiated.

HJC/krl

COST STATEMENT

Wages

	Cost
1 Sr. Geol. Assistants, 2 manday(s) (1981 Aug. 7 & 8)	$ 118.58
1 Geologist, 1 manday (1981 Sept. 25)	150.00
3 Jr. Geol. Assistants, 4 manday(s) (1981 Aug. 7&8, Sept. 25)	215.15
	$ 483.73

Room & Board

Location	Daily Rate	Date	No. of Days	
Carcross	$25.00	1981 Aug.3,5,6	4	$ 100.00
Whitehorse	50.00	1981 Sept. 26	3	150.00
				$ 250.00

Transportation

a. Truck Rental (Avis-Whitehorse, YT):
2 day(s) @ $35.85/day — $ 71.70

b. Helicopter in support of field work @ $432.50/hr including fuel (Flying by Viking Helicopter Ltd. of Prince George)

Dates (1981): Aug. 7&8, Sept. 25 — No. of hrs: 3.25 — 1,405.63

$1,477.33

Analytical Services

Type of Sample	No. of	Fraction Analyzed: F	FHM	CHM	Elements Analyzed: Mo	Cu	Pb	Zn	Ni	Ag	Hg	As	Mn	Au	Sb	Unit Price	
Soil	26	X			X	X	X	X		X	X	X	X	X	X	22.75	591.50
Rock	1					X	X			X				X		31.00	31.00
	1				X	X	X			X	X				X	15.05	15.05
	4				X	X	X	X		X	X	X		X	X	22.75	91.00

Preparation - Rock 5 @ $2.25 sample — $ 13.75
- Soil/Silt 26 @ $0.85/sample — 22.10

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)

$ 764.40

Report Preparation	Cost
Drafting: 1 day @ $100/day	$ 100.00
Typing: 1 day @ $95.00	95.00
Map preparation 8 maps at 16¢/square foot	11.52
	$ 206.52
GRAND TOTAL:	$3,181.98

REFERENCES

Christie, R. L.; "Geology: Bennett (104M)", G.S.C. Preliminary Series Map No. 19-1957, 1957.

Neelands, J. T.; "Geochemical Report - Kulta Regional Stream Sediment Sampling Programme in the Dease Lake and Tagish Lake Areas", Assessment Report, 1982.

Neelands, J. T.; "Kulta Follow-Up (104-J, 104-M)" Geological and Geochemical Report, 1982.

Wheeler, J. O.; "Whitehorse Map-Area, Yukon Territory (105-O)", G.S.C. Memoir 312, 1961.

QUALIFICATIONS

I, Hugh J. Copland Jr., do hereby certify that:

1. I am a geologist residing at 5250 Ash Street, Vancouver, British Columbia and employed by Du Pont of Canada Exploration Limited.

2. I am a recent graduate of the University of British Columbia with a B.Sc. (Honours) degree in Geology and McMaster University with a B.Eng. (Mechanical).

3. I have practised my profession in geology for the past two summers in British Columbia and the Yukon.

4. In August and September 1981, I participated in the field programme described in this report on behalf of Du Pont of Canada Exploration Limited.

H. Copland

H. J. Copland
1982 May 14

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

APPENDIX I

Laboratory Procedures

PHONE 980-5814

APPENDIX I

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 WORK

PROCEDURE 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 pretreated 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.

PHONE 980-5814

APPENDIX I

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 WORK

PROCEDURES 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.

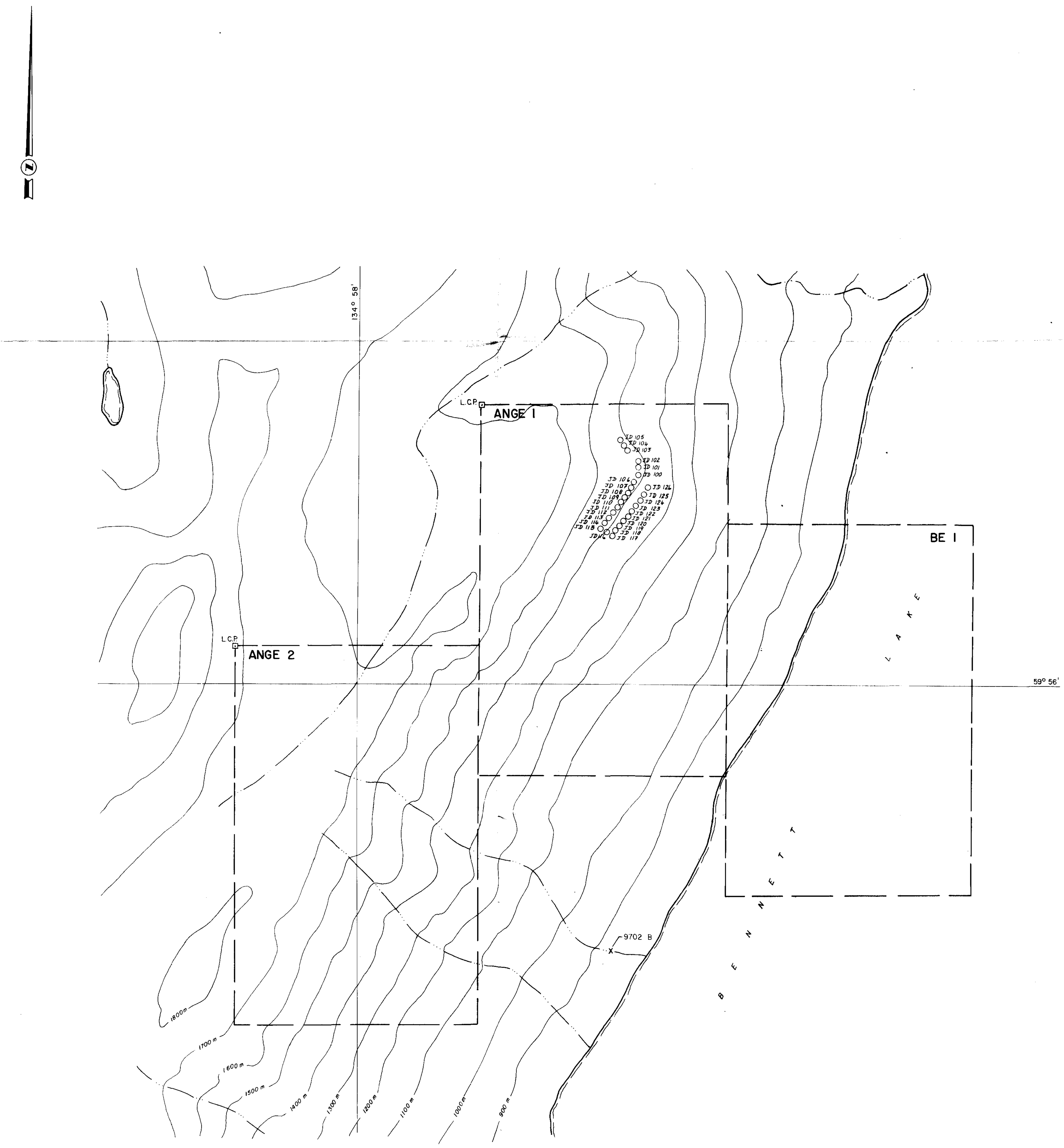
1.0 gram of the samples are digested for 6 hours with HNO_3 and $HClO_4$ mixture.

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.

<u>For Arsenic analysis</u> a suitable aliquote is taken from the above 1 gram sample solution and the test is carried out by Gutzit method using $Ag\ CS_2N\ (C_2H_5)_2$ as a reagent. The detection limit obtained is 1. ppm.

<u>Fluorine analysis</u> 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.



1981 SAMPLE RESULTS

Sample	Mo ppm +80 F	Cu ppm -80 F	Pb ppm -80 F	Zn ppm -80 F	Ag ppm -80 F	Hg ppb -80 F	As ppm -80 F	Mn ppm -80 F	Au ppb -80 F	Sb ppm -80 F
Soil										
JD 100	4	78	33	72	0.6	30	34	540	5	8
JD 101	5	15	16	32	0.5	15	8	300	5	3
JD 102	10	77	40	55	0.7	10	30	340	5	5
JD 103	9	160	260	232	2.3	35	90	950	5	16
JD 104	10	408	80	133	2.4	20	69	840	10	30
JD 105	14	400	68	216	1.7	50	63	840	5	45
JD 106	21	800	280	362	4.0	25	176	1030	15	52
JD 107	12	510	83	105	2.5	20	75	540	5	34
JD 108	14	443	71	98	1.9	5	78	540	5	45
JD 109	12	383	36	100	1.2	15	94	960	5	30
JD 110	30	520	142	400	5.0	10	290	1200	65	65
JD 111	36	710	87	156	2.8	25	300	1190	5	60
JD 112	24	394	92	229	1.9	15	270	960	5	62
JD 113	29	740	87	229	2.4	15	290	1670	20	80
JD 114	26	590	65	153	2.5	20	168	1400	5	90
JD 115	17	550	62	185	2.3	10	106	1290	5	65
JD 116	20	530	100	259	2.8	15	162	1330	10	75
JD 117	19	550	87	322	2.5	10	177	1190	5	60
JD 118	22	560	46	550	3.6	5	156	1210	5	72
JD 119	12	450	33	163	2.4	30	55	1170	10	45
JD 120	10	430	68	182	2.1	40	95	1000	5	30
JD 121	11	300	33	205	2.1	25	172	1140	5	52
JD 122	9	260	55	188	2.0	20	124	1060	10	35
JD 123	17	510	69	172	2.3	30	148	920	20	55
JD 124	11	365	65	128	1.9	20	93	650	20	30
JD 125	10	240	68	290	1.6	45	108	2920	5	42
JD 126	10	188	33	133	1.6	25	22	290	5	10

Sample	Mo ppm -80 F	Cu ppm -80 F	Cu ppm -20 +80 CHM	Pb ppm -80 F	Zn ppm -80 F	Ag ppm -80 F	Ag ppm -20 +80 CHM	Mn ppm -80 F	Au ppb -80 F	Au ppb -80 FHM	Au ppb -20 +80 CHM	H.M. wt. F/C gm	H.M. % F/C	Orig. wt. F/C gm
-10 Sieve														
9702 B	3	41	170	2220	35	17.3	220.0	215	850	20000	5800	0.73/	1.52/1.43	48.0/1790

LEGEND

O JD 126 SOIL SAMPLE LOCATION and NUMBER

X – 9702 B ORIGINAL SIEVED HEAVY MINERAL SAMPLE LOCATION (1981) and NUMBER

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
No. 10,425

DUPONT CANADA EXPLORATION

KULTA PROJECT
ANGE - BE CLAIMS
GEOCHEMISTRY
Au, Ag, As, Cu, Hg, Mn, Mo, Pb, Sb, Zn

ATLIN LAKE AREA, BRITISH COLUMBIA

1 : 10 000

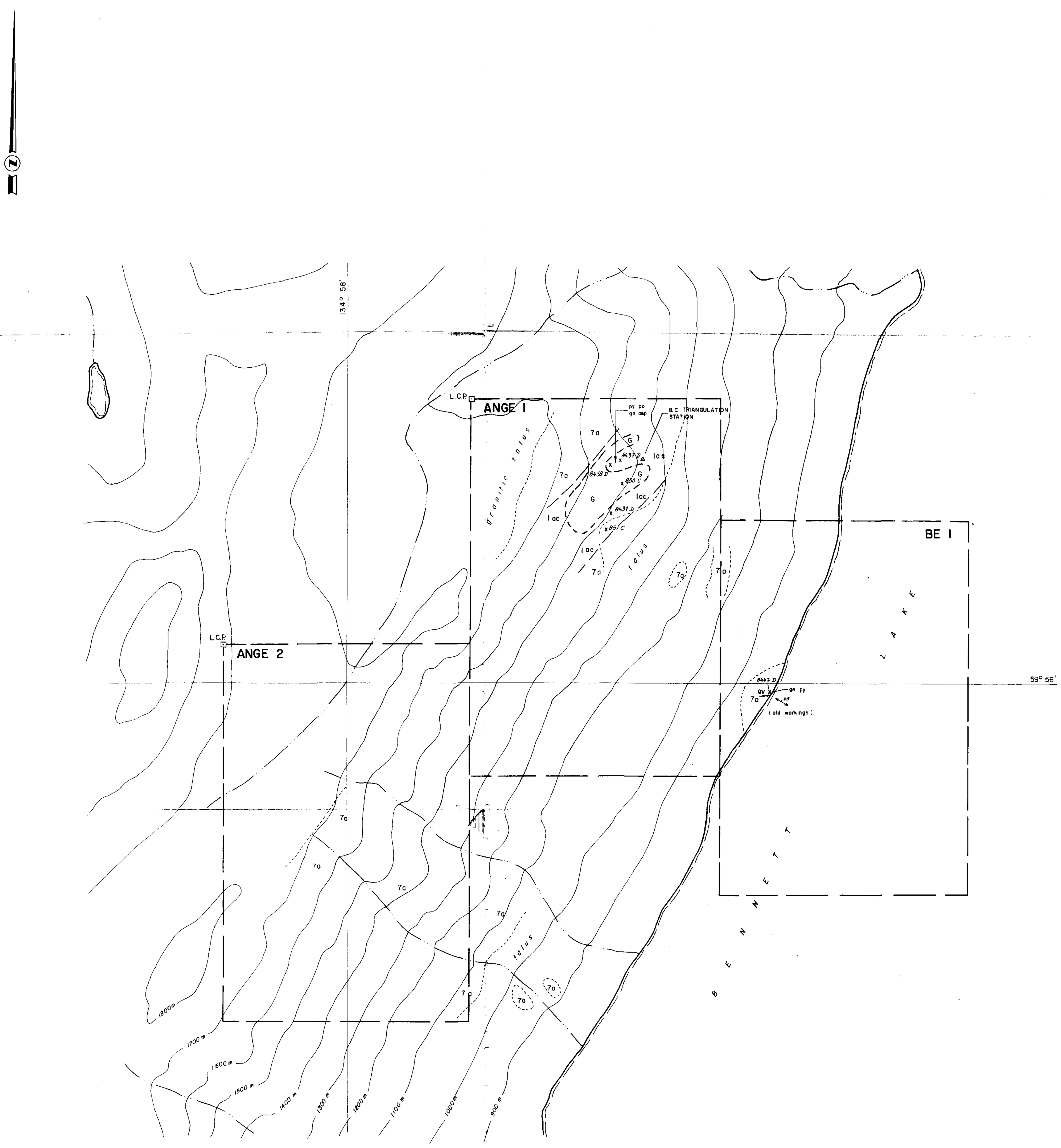
m 300 200 100 0 500 800 m

SCALE

1 INCH = 833 FEET

MAPPED BY : J.T.N., H.J.C.	REVISED :	N.T.S. No. : 104 M/8W	
DATE : 81 08 08		ACCT No. : 351 - 35	
DRAWN BY : C.H.K.			
DATE : 82 02 12		DRWG. No. : KU 81 - 169	

KC1-229



LEGEND

JURASSIC OR LATER

POST LOWER JURASSIC

COAST INTRUSIONS

7	7a) Granite 7b) Granodiorite 7c) Quartz diorite 7d) Diorite 7e) Felsic dyke 7f) Mafic dyke

JURASSIC

LOWER JURASSIC AND LATER

LABERGE GROUP

6	6a) Conglomerate 6b) Greywacke 6c) Argillite 6d) Siltstone 6e) Hornfels

PENNSYLVANIAN TO TRIASSIC

5	5a) Felsic dyke 5b) Mafic dyke
4	4a) Rhyolite 4b) Rhyodacite 4c) Dacite 4d) Andesite 4e) Basalt
3	3a) Volcanic breccia 3b) Volcanic conglomerate 3c) Tuff
2	2a) Siltstone 2b) Limestone

PRE-PERMIAN

1	1a) Schist 1b) Gneiss 1c) Phyllite 1d) Limestone 1e) Quartzite 1f) Arenite 1g) Slate

SYMBOLS

- OUTCROP
- CONTACT (APPROX.)
- x 8437 D ROCK SAMPLE LOCATION AND NUMBER
- L.C.P. CLAIM LINE AND LEGAL CORNER POST
- G GOSSAN
- QV QUARTZ VEIN WITH STRIKE AND DIP
- py PYRITE
- po PYRRHOTITE
- gn GALENA
- asp ARSENOPYRITE

ROCK GEOCHEMICAL RESULTS

Sample	Mo ppm -80 F	Cu ppm -80 F	Pb ppm -80 F	Zn ppm -80 F	Ni ppm -80 F	Ag ppm -80 F	Hg ppb -80 F	As ppm -80 F	Au ppb -80 F	Sb ppm -80 F
850 C	6	369	31				10	133		22
851 C	7	49	53				15	128		8
8437 D	2	710	22700	8400	12	270.0	20	13	40	42
8438 D	1	1550	25000	10000	12	3250.0	470	<1	570	150
8439 D	1	192	550	276	99	10.4	10	1	10	30
8447 D	1	105	20500	26	30	315.0	105	13400	3200	415

ROCK ASSAY

Sample	Pb %	Zn %	Ag oz/T	Au oz/T
850 C	.01	.02	.10	.006
851 C	.01	.01	.08	.008

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
No 10425

DU PONT CANADA EXPLORATION

KULTA PROJECT
ANGE-BE CLAIMS
GEOLOGY

ATLIN LAKE AREA, BRITISH COLUMBIA

1 : 10 000

m 300 200 100 0 300 600 m

SCALE

0

1 INCH = 833 FEET

MAPPED BY : J.T.N., H.J.C.	REVISED :	N.T.S. No. :	104 M 15W
DATE : 81 08 08		ACCT No. :	351 - 35
DRAWN BY : C.H.K.		DRWG. No. :	KU. 81 - 168
DATE : 82 02 11			