87-139-15808
3/88

GEOLOGICAL AND GEOCHEMICAL

REPORT

on the

PIKE CLAIMS

Atlin Mining Division
British Columbia

NTS: 104M/15
Latitude 59°54'N Longitude 134°45'W

Owned and Operated by:
H. Copland, Whitehorse, YT.

H. Copland
January 30, 1987

SUMMARY

The Pike claim consisting of 12 units is located on the eastern shore of Tutshi Lake in northwestern British Columbia. Geological mapping, prospecting, and sampling were conducted over the property in 1986. The claim is underlain by andesite of the Triassic Lewes River Group, quartzite of the Pre-Permian Yukon Group, and granite of Cretaceous age. Gold anomalies(30-590 ppb) are associated with sheared, clay altered pyritiferous quartzite over a 200 metre length. Detail sampling of the anomalous area, a soil grid, and further mapping are recommended over the property.

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Atlin Mining Division, British Columbia

INTRODUCTION

The Pike claim consists of 12 units located on the eastern side of Tutshi Lake in northwestern British Columbia. The property is underlain by rocks of the Triassic Lewes River Group, the Cretaceous Coast Intrusive Complex, and Pre-Permian Yukon Group. Geological mapping, prospecting, and sampling were carried out during the 1986 field season.

LOCATION AND ACCESS

The property lies on the eastern side of Tutshi Lake, opposite Paddy Pass (see figs. 1&2). The claims are approximately 95 kilometres south of Whitehorse and 70 kilometres northwest of Atlin, B.C.. They are most easily accessed by boat from the Whitehorse-Skagway highway two kilometres west of the property. Floatplane and/or helicopter access is available from either Whitehorse or Atlin.

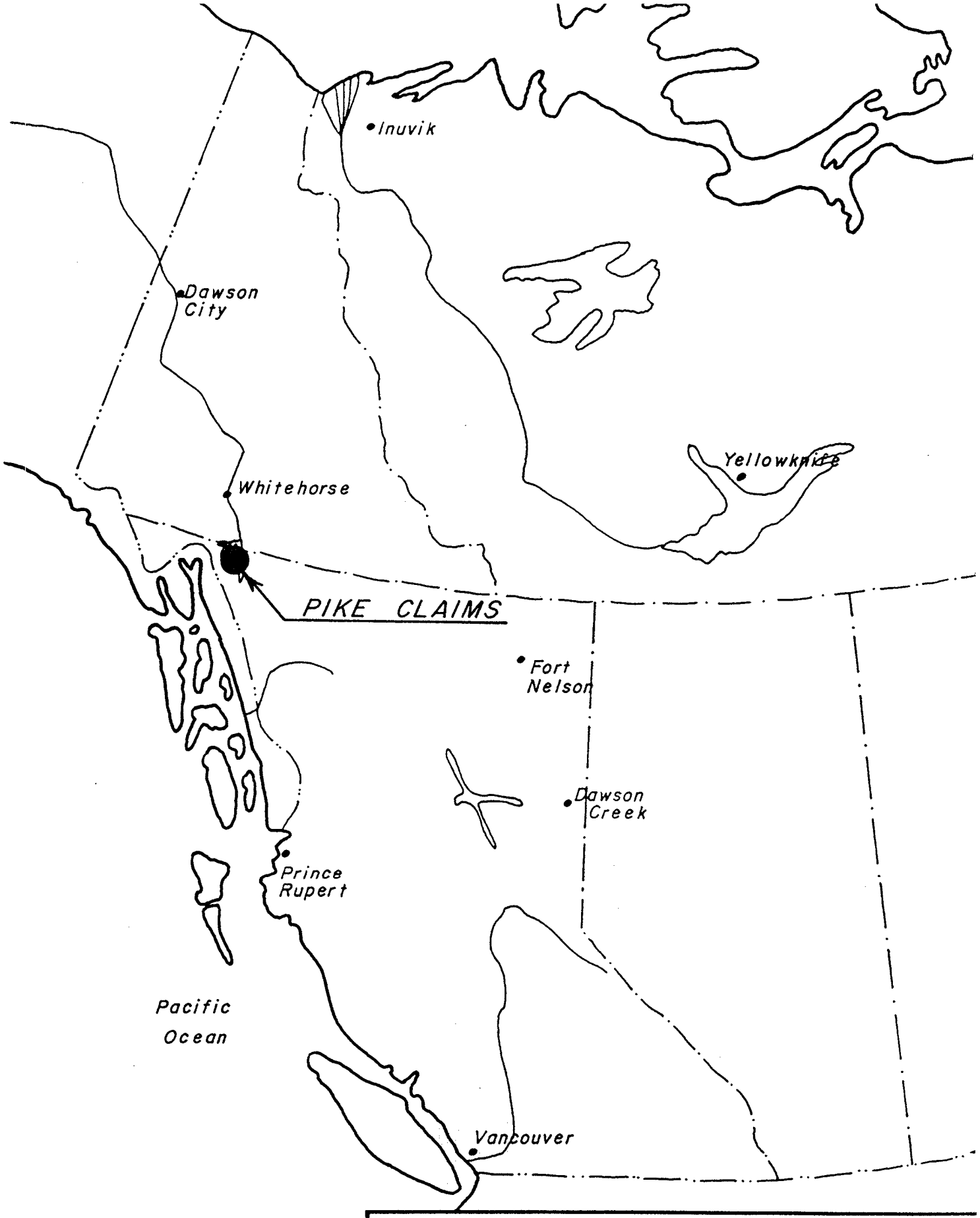
PROPERTY DEFINITION

The claim consists of 12 contigous units staked in July 1986. Details of the claim are listed below:

Claim	Units	Tag No.	Record No.	Anniversary
Pike	4Nx3E	91168	2653	July 16, 1988

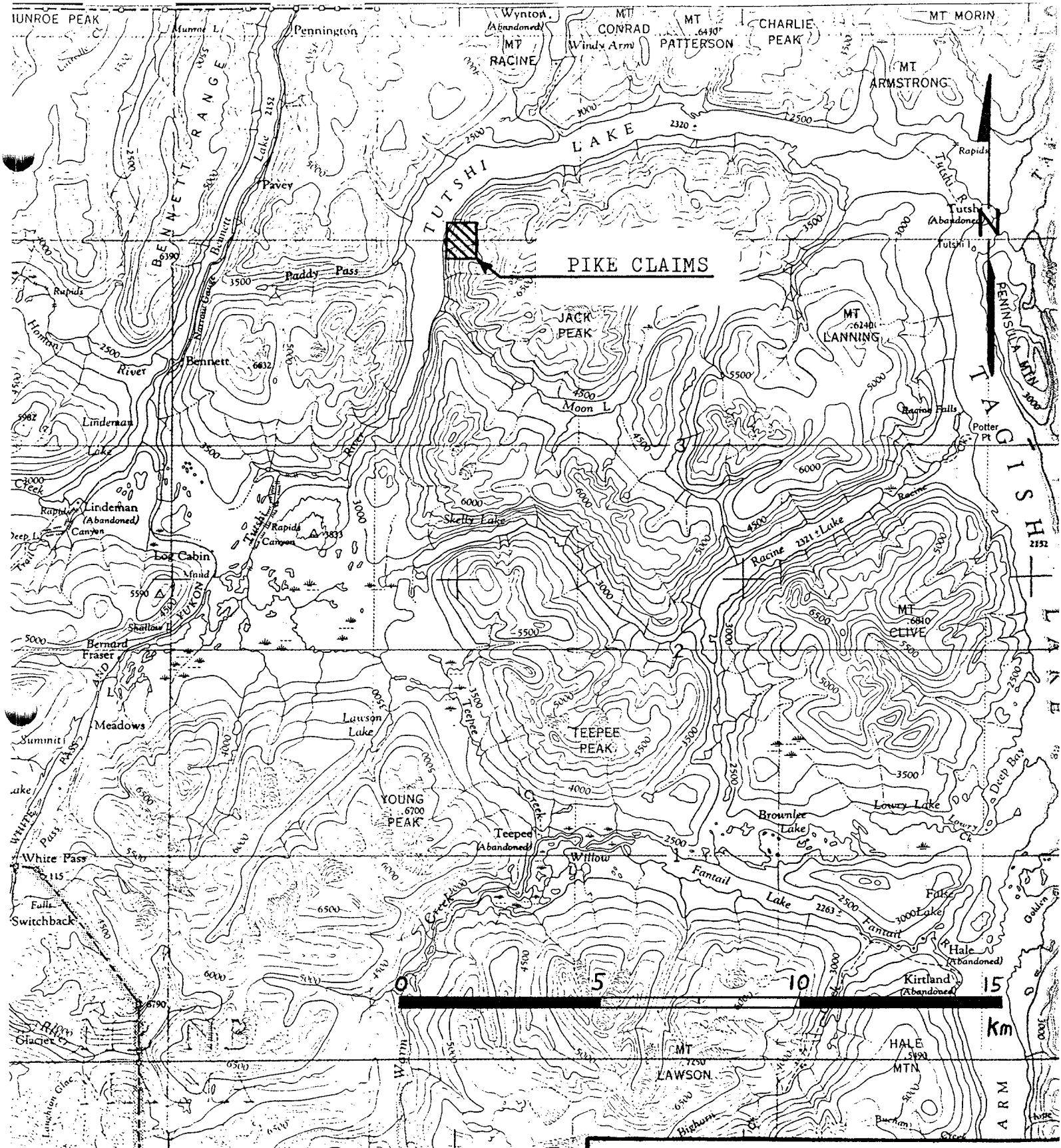
TOPOGRAPHY AND VEGETATION

The claims lie within the Tagish Highlands, just east of the Coast Mountain Range. Peaks in the area average 1800 metres in elevation. The Bennett-Tutshi-Tagish Lake systems cut long, narrow, northerly



LOCATION MAP Fig. 1

0 300 600 900 KM.

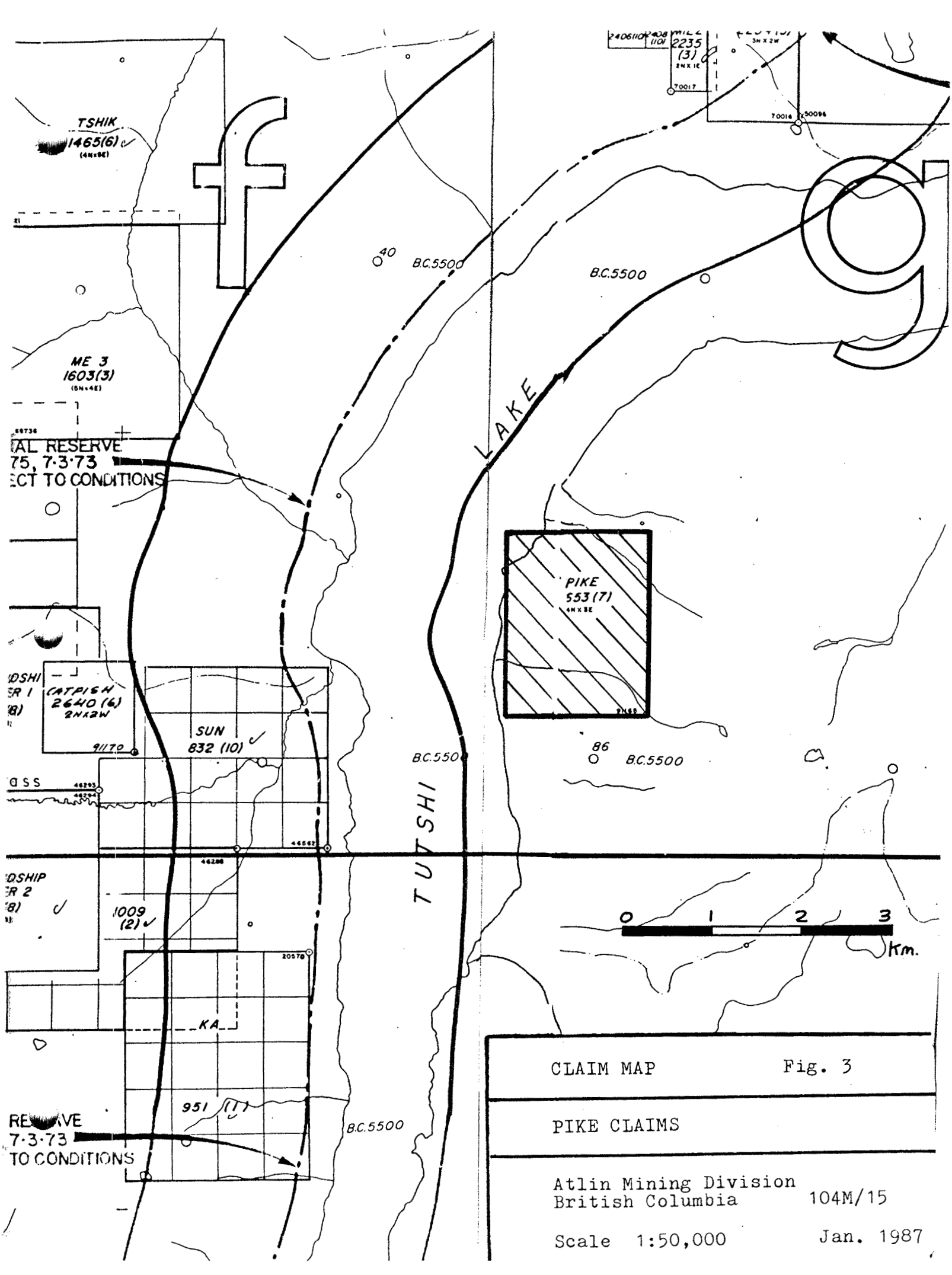


LOCATION MAP Fig. 2

PIKE CLAIMS

Atlin Mining Division 104M/15
British Columbia

Scale 1:250,000 Jan. 87



CLAIM MAP Fig. 3

PIKE CLAIMS

Atlin Mining Division
British Columbia 104M/15

Scale 1:50,000 Jan. 1987

trending valleys throughout the map area.

The Pike property lies on a western facing slope bordering the eastern shore of Tutshi Lake. Elevation varies from 710 metres at the lake to 1400 metres in the east. The slope is cut by numerous creeks which form steep ravines midway down the mountain. Treeline occurs at an elevation of 1200 metres. Below this spruce, pine, and poplar dominate. Thick alder grows in the creek bottoms. Typical subalpine shrubs and grasses give way to talus and outcrop in the higher elevations. Creeks provide water year-round, although during dry periods the creeks seep underground 200 metres from the lake.

HISTORY

The southern portion of the Pike claims were staked by Dupont Exploration in 1981 as the Take claims. Follow-up of a cupriferous stream sediment sample was conducted later that year. Geological mapping and stream sampling were undertaken and the claims were allowed to lapse.

GEOLOGY

Regional

The claims lie on the boundary between the Intermontane Belt (Whitehorse Trough) and the Coast Plutonic Complex. The oldest rocks in the trough are remanants of the basement Yukon Group schists and gneisses which crop out along the western boundary of the trough and as pendants within the Coast Mountains. The Nahlin fault separates the oceanic rocks of the Atlin terrane to the east from those of the Whitehorse trough. The Atlin terrane is comprised of Upper Paleozoic to Lower Triassic limestone, chert, andesite, and basalt of the Cache Creek Group in British Columbia and the Taku Group in the Yukon.

The Whitehorse trough is a northwest trending Mesozoic synclinorium. The basal unit is an Upper Triassic package of volcanic rocks and related sediments known as the Lewes River Group (Stuhini Group equivalent in part). Bultman (1979) has further subdivided this with geographical names for distinct units within the group. Discontinous bands and isolated pods of limestone overlying the volcanic rocks have been assigned to the Sinwa Formation.

Folded sedimentary rocks of the Lower and Middle Jurassic Laberge Group disconformably overlie the Lewes River Group. The Laberge Group consists of deep marine greywackes, shale, siltstones, and conglomerate of the Inklin Formation flanked by the shallow marine Takwahoni Formation sandstones and conglomerates. The Upper Jurassic or Lower Cretaceous Tantalus Formation conglomerate and sandstone crops out to the northwest and is more widespread in the Yukon.

The Coast Mountain Intrusive rocks range from diorite to granite in this area. They are separated from the Whitehorse trough by the northwest trending Llewellyn fault system. Morrison (1979) has defined four different plutonic suites in the Whitehorse area ranging from Upper Triassic to Eocene in age. The majority of the intrusives in the immediate area of the claims are probably mid to Upper Cretaceous.

The Upper Cretaceous Hutshi Group, thought to be an equivalent to

the Mount Nansen Group to the north, unconformably overlies older strata in the trough. This unit consists primarily of rhyolite and andesite flows and breccias. The Eocene Skukum Group and Sloko Formation crop out to the northwest and southeast of the claim group. These consist mainly of intermediate to acidic pyroclastic rocks and flows.

Property (see fig. 4)

The Pike claims lie near the contact of the Lewes River Group volcanic rocks, Yukon Group quartzites, and a satellite body of the Coast Mountain Intrusive Complex. Lewes River andesite predominates along the lakeshore. Two isolated bluffs of this unit rise up 40 metres above the lake on either side of the southernmost creek. Other than this it is best exposed in the upper sections of the creeks.

Quartzite is exposed in the creek bed over a length of approximately 200 metres. The quartzite is bounded on either side by andesite and the sharp sheared contacts suggest faulting. It is cut by numerous northwest trending dykes ranging in composition from rhyolite to quartz diorite, and width from 1 to 15 metres. It is assumed this quartzite belongs to the Pre-Permian Yukon Group rather than a metamorphosed sandstone that is reported to occur in the Lewes River Group in this area.

Granite crops out in the higher elevations of the property. The northwest trending contact with the volcanic rocks forms the western boundary of an irregular shaped outlier of the Coast Intrusions lying between Tutshi and Tagish Lakes. The main body of the intrusive complex crops out along the south end of Tutshi Lake. A detail description of the units observed follows:

Quartzite(Unit 1): this rock is medium grey, weathering to a deep orange-yellow gossan. The gossan is due to 2-10% pervassive pyrite throughout the quartzite. It is medium grained with a sugary texture. Original bedding or other textures are masked by the intense alteration. Where exposed in the creek, the rock is frequently fractured and sheared with a strong to intense clay and moderate sericite

alteration.

Andesite (Unit 2): this unit is dark green weathering light green to gossanous. It is mainly fine grained and massive, although some areas of feldspar porphyritic rock were observed. White anhedral feldspar phenocrysts 1-4 mm. in size make up between 1-2% of the rock. Fine grained pervassive pyrite is common throughout the andesite. Averaging 2% of the rock, pyrite was locally observed comprising up to 10%.

Hornblende Granite (Unit 3): The intrusive is commonly coarse grained and equigranular. Composition averages 25% pink feldspar, 40% grey feldspar, 25% quartz, and 10% mafics, mainly hornblende. Float found in the creek bed indicates feldspar porphyritic granite occurs nearby, although it was not observed in outcrop.

Feldspar Porphyritic Rhyolite (Unit 4): This unit occurs as northwest trending dykes ranging in width from 1 to 15 metres. Subrounded pink feldspar phenocrysts averaging 3 mm. in size but up to 10 mm. comprise 5-10% of the rock. The groundmass is fine grained and dark green. This unit appears to be gradational with the granitic intrusion.

Quartz Diorite (Unit 5): This unit also occurs as dykes ranging in width from 2 to 5 metres. The rock is green-brown, weathering a dull tone. It contains fine to medium grained feldspar 80%, quartz 10%, and hornblende 10%. It is also probably a phase of the main granitic pluton.

Economic

The most prominent gossan on the property occurs in the southernmost creek where the pyritiferous quartzite crops out. The entire gully wall has a bright orange-yellow weathered surface. Intense gossans occur along with numerous highly fractured zones. These zones range from 1 to several metres across and contain an intense clay alteration associated with slickensides on the margins. Very fine grained quartz stringers and small veins up to 2 cm. across are

frequently associated with the fractured zones. Several samples taken across the altered quartzite indicate it is auriferous (30-210 ppb Au). Highest gold values (590 ppb) are associated with the quartz stringers.

Several other shear zones cutting pyritiferous andesite were observed along the lakeshore. These usually contained veinlets of quartz and calcite with minor pyrite and copper stains. One of these zones was anomalous in gold (77 ppb) and silver (6.0 ppm). Several grey chalcedonic veins occur in the granite but were not anomalous.

GEOCHEMISTRY

Procedure

A total of 12 rock and 1 silt sample were collected from the property. All samples were shipped to Acme Labs of Vancouver, B.C. for preparation and analysis. Rocks were pulverised to -100 mesh, and silts seived to -80 mesh. Rock samples were analysed for Ag,Au or As,Ag, Au,Hg, silts were tested for Pb,Zn,Ag,Au.

Results

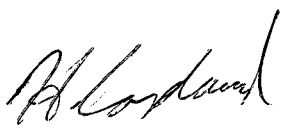
A complete tabulation of results is included in the appendix and on Fig. 5. A brief description of the samples collected and their values are tabled on the following page.

SAMPLE NUMBER	DESCRIPTION	GEOCHEMISTRY As ppm	Hg ppb	Ag ppm	Au ppb
TLR-4	grab outcrop; quartz-calcite veinlets in shear zone through andesite	7	5	0.4	1
TLR-5	chip across 2 m.; pyritiferous sheared andesite	9	5	0.6	1
TLR-6	grab outcrop; silicified shear zone, quartz veinlets with minor pyrite & chalcopyrite	--	--	6.0	77
TLR-7	grab outcrop; chalcedonic grey quartz vein, 30 cm. wide, minor pyrite	--	--	0.1	7
TLR-8	grab outcrop; quartz veinlets in sheared clay altered quartzite	--	--	0.5	590
TLR-9	chip across 2 m.; pyritiferous 2-5%, sheared clay altered quartzite	--	--	0.1	71
PKR-1	chip across 3 m.; bleached, clay altered, sheared, pyritiferous quartzite	5	10	0.2	30
PKR-2	chip across 1 m.; sheared clay altered, pyritiferous 5% quartzite	7	5	0.5	55
PKR-3	chip across 2 m.; sheared quartzite with vuggy, pyritiferous quartz veinlets	3	10	0.4	210
PKR-4	chip across 1.5 m.; intense clay altered sheared quartzite	2	5	0.1	105
PKR-5	float grab; pyritiferous(10%)quartzite	2	10	0.1	150
PKR-6	float grab; fine grained grey quartz with trace pyrite	9	5	0.2	1

DISCUSSION AND CONCLUSIONS

A sheared fault bounded slice of Yukon Group quartzite is anomalous in gold over most of its exposure in one creek. Intense clay alteration and a strong gossan over this area make detail mapping difficult. It is recommended that systematic chip sampling of the zone be conducted over its exposure on both sides of the creek. This should isolate any strong anomalies in the quartzite.

Detail soil sampling along strike with the quartzite, combined with further mapping and prospecting should be conducted to determine the extent of the anomalous unit. The northernmost creek should also be mapped and sampled in detail as numerous gossans occur in that area also.



Hugh Copland
Geologist

ASSESSMENT COST STATEMENT

1. Labour		
i) Field work		
Geologist(H. Copland) 5 days @ $100/day		500
July 22,27;August 1,2,3		
ii) Report Preparation	2½ days	250
		$750
2. Analytical Costs		
i) Rock sample Geochemistry		
Preparation $3.00 x 12 samples		36
Analysis (Au, Ag)	$6.00 x 4	24
(As,Ag,Au,Hg)	$9.00 x 8	72
ii) Silt sample geochemistry		
Preparation $0.75 x 1		0.75
Analysis (Pb,Zn,Ag,Au)	$3.50 x 1	3.50
		$136
3. Transportation		
i) vehicle gas and oil		60
ii) boat gas and oil		40
iii) sample shipment		55
		$155
4. Food and Accomodation		
i) food		$40
5. Supplies		
i) Field: flagging, bags, etc.		20
ii) Office: report preparation, photocopies		25
		$45
TOTAL:		$ 1126

SELECTED BIBLIOGRAPHY

Bultman, B.B.
1979: Geology and Tectonic History of the Whitehorse Trough west of Atlin, B.C.; unpublished PHD thesis, Yale University, 284 p.

Christie, R.L.
1957: Bennett Map Sheet Geology (104M); GSC Map 19-1957.

Morrison, G.W., et al.
1979: Interpretation of isotopic ages for Plutonic rocks in the Whitehorse map area, Yukon; Can. J. Earth Sci., V.16, p. 1988-1997.

Schroeter, T.G.
1985: Bennett Project (104M); BCMEMPR Geological Fieldwork, Paper 1986-1, p. 184-189.

Wheeler, J.O.
1961: Whitehorse Map Sheet (105D); GSC Mem. 312.

CERTIFICATE

I, Hugh Copland, do hereby certify that:

1. I am a geologist residing at Site 20, Box 109, RR1, Whitehorse, YT.

2. I am a graduate of the University of B.C. with a B.Sc. (Honours) in Geological Sciences (1982); and of McMaster University with a B.Eng. (1976).

3. I have practised my profession over the past seven years, mainly in the Western Cordillera.

4. This report is based on field work conducted by me during the summer of 1986.

5. I am a member of The Yukon Professional Geoscientists Society.

H. Copland

Hugh Copland

Whitehorse January 16, 1987

APPENDIX

ACME ANALYTICAL LABORATORIES LTD.
852 E.HASTINGS ST.VANCOUVER B.C. V6A 1R6
PHONE 253-3158 DATA LINE 251-1011

DATE RECEIVED: JULY 5 1986

DATE REPORT MAILED: July 9/86

GEOCHEMICAL ICP ANALYSIS

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN.FE.CA.P.CR.MG.BA.TI.B.AL.NA.K.W.SI.ZR.CE.SN.Y.NB AND TA. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: SILTS & ROCKS AU* ANALYSIS BY AA FROM 10 GRAM SAMPLE.

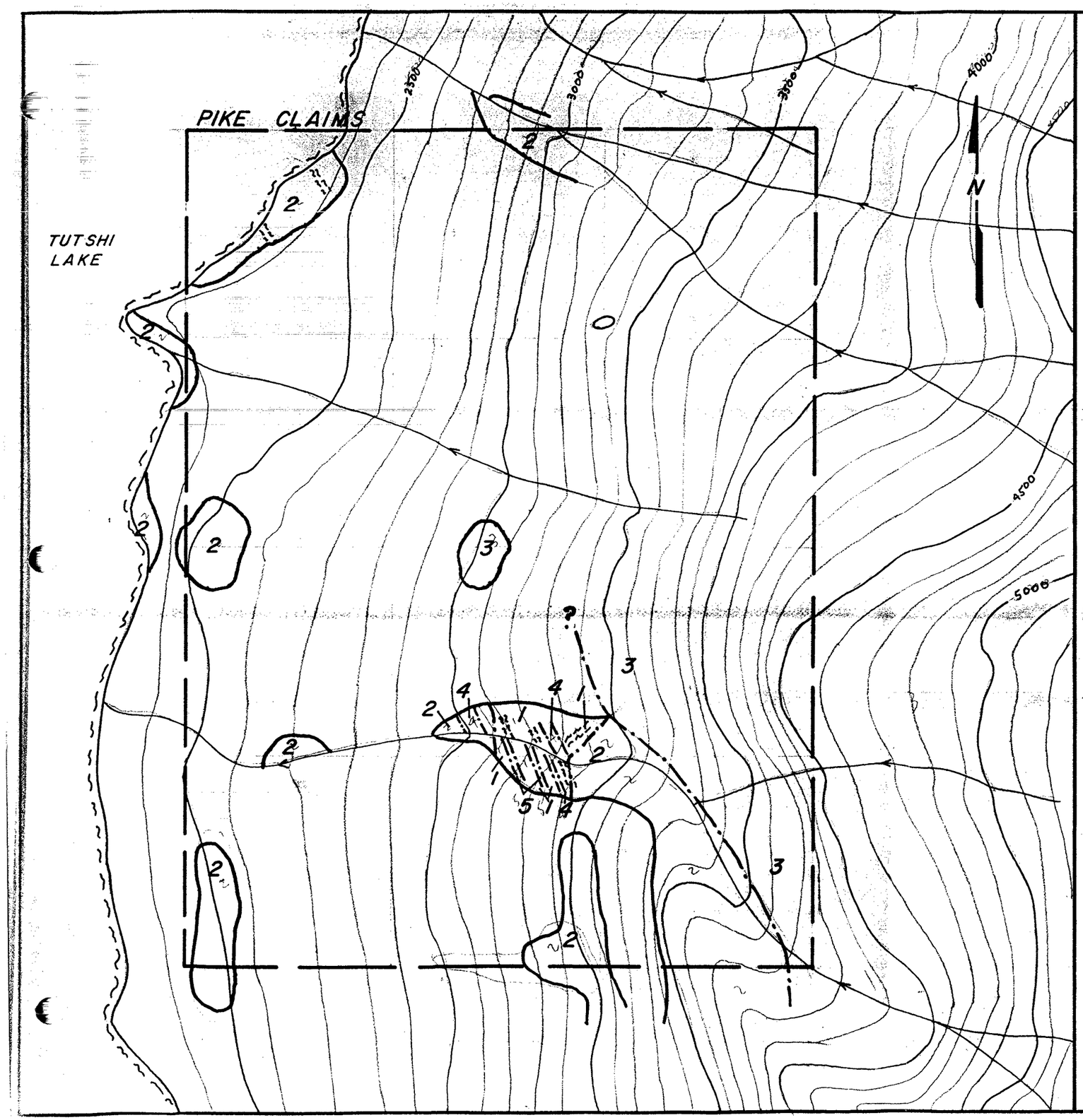
ASSAYER: D. Toye .DEAN TOYE. CERTIFIED B.C. ASSAYER.

HUGH COPLAND FILE # 86-1321

SAMPLE#	Pb PPM	Zn PPM	Ag PPM	Au* PPB
TLT-1	59	123	.5	58
~~TLT-2~~	~~16~~	~~149~~	~~.2~~	~~5~~
~~TLT-3~~	~~12~~	~~75~~	~~.1~~	~~5~~
~~TLT-4~~	~~13~~	~~134~~	~~.3~~	~~145~~
~~TLT-5~~	~~23~~	~~76~~	~~.5~~	~~7~~
~~FSR-2~~	~~-~~	~~-~~	~~23.1~~	~~790~~
~~FSR-3~~	~~-~~	~~-~~	~~65.3~~ ✓	~~480~~
~~FSR-4~~	~~-~~	~~-~~	~~146.9~~ ✓	~~84~~
~~TLR-2~~	~~-~~	~~-~~	~~.8~~	~~7~~
~~TLR-3~~	~~-~~	~~-~~	~~1.2~~	~~29~~
TLR-6	-	-	6.0	77
TLR-7	-	-	.1	7
TLR-8	-	-	.5	590
TLR-9	-	-	.1	71
STD C/AU-0.5	36	137	7.2	510

✓ Assay required for correct result

SAMPLE#	As PPM	Ag PPM	Au* PPB	Hg PPB
PKR-1	5	.2	30	10
PKR-2	7	.5	55	5
PKR-3	3	.4	210	10
PKR-4	2	.3	105	5
PKR-5	2	.1	150	10
PKR-6	9	.2	1	5
TLR-1	18	.1	1	5
TLR-4	7	.4	1	5
TLR-5	9	.6	1	5
TLP-1	74	.4	4	10
STD C/AU 0.5	39	6.8	495	1300



LEGEND

5	Quartz Diorite, dykes
4	Rhyolite, dykes
3	COAST MOUNTAIN INTRUSIONS (U. Cretaceous) Granite
2	LEWES RIVER GROUP (U. Triassic) Andesite
1	YUKON GROUP (Pre-Permian) Quartzite

SYMBOLS

- Contact, assumed
- Fault, assumed
- qv — Quartz vein
- 2 — Limit of outcrop
- Claim outline
- Lake
- Creek

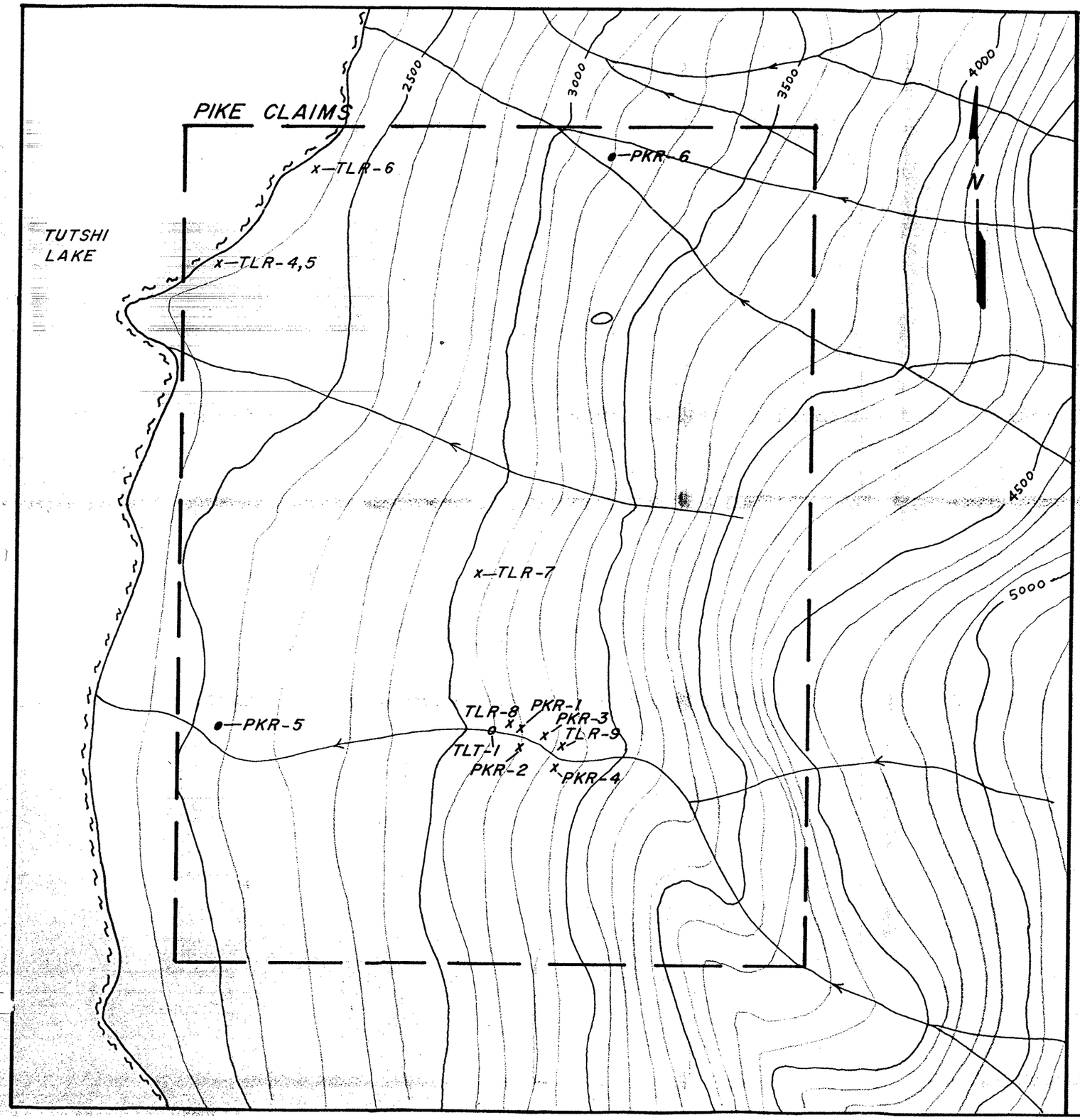
GEOLOGICAL BRANCH
ASSESSMENT REPORT

15,808

contours in feet

0 200 400 600 800 1000
metres

PIKE CLAIMS		
GEOLOGY		Fig. 4
1 10,000	NTS 104M/15	H. Copland January 1987



LEGEND

x, ● — TLR-6 Rock sample location; outcrop, float

—o— TLT-1 Silt sample location

RESULTS

GEOCHEMISTRY (ppm, Au, Hg in ppb)

SAMPLE	As	Hg	Ag	Au
TLR-4	7	5	0.4	1
TLR-5	9	5	0.6	1
TLR-6	--	--	6.0	77
TLR-7	--	--	0.1	7
TLR-8	--	--	0.5	590
TLR-9	--	--	0.1	71
PKR-1	5	10	0.2	30
PKR-2	7	5	0.5	55
PKR-3	3	10	0.4	210
PKR-4	2	5	0.1	105
PKR-5	2	10	0.1	150
PKR-6	9	5	0.2	1

contours in feet

0 200 400 600 800 1000

metres

PIKE CLAIMS

SAMPLE LOCATIONS Fig. 5

1:10,000	NTS: 104M/15	H. Copland January 1987