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**GEOLOGICAL AND GEOCHEMICAL ASSESSMENT REPORT**

for the

**AU1-AU42; and LM1-LM6 Claims**

**YB44069 TO YB44110; and YB44111 TO YB44116**

**N.T.S.**

**105-0/11**

**131'30" (LONGITUDE), 63'45" (LATITUDE)**

**Mayo Mining Division**

**Yukon Territory**



**AUTHOR: B.A. Lueck**

**WORK PERFORMED: JULY 1 to SEPT 1, 1995**

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## **INTRODUCTION**

The AU1-AU42 claims (record numbers YB44069-YB44110) comprising the Arrowhead North property and the LM1-LM6 (record numbers YB44111-YB44116) claims comprising the Arrowhead South property, are located in the Mayo Mining Division, near the headwaters of the Rogue River, on map sheet 105-O/11. The nearest identifiable landmark is Arrowhead Lake located approximately 9 kilometres north of the claims. The claims are owned 100% by Yukon Gold Corp.

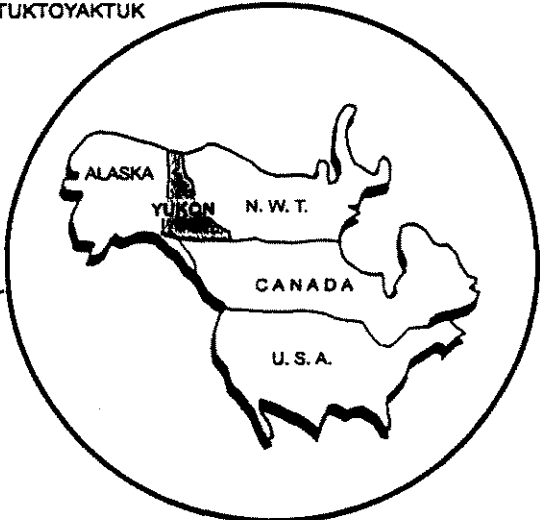
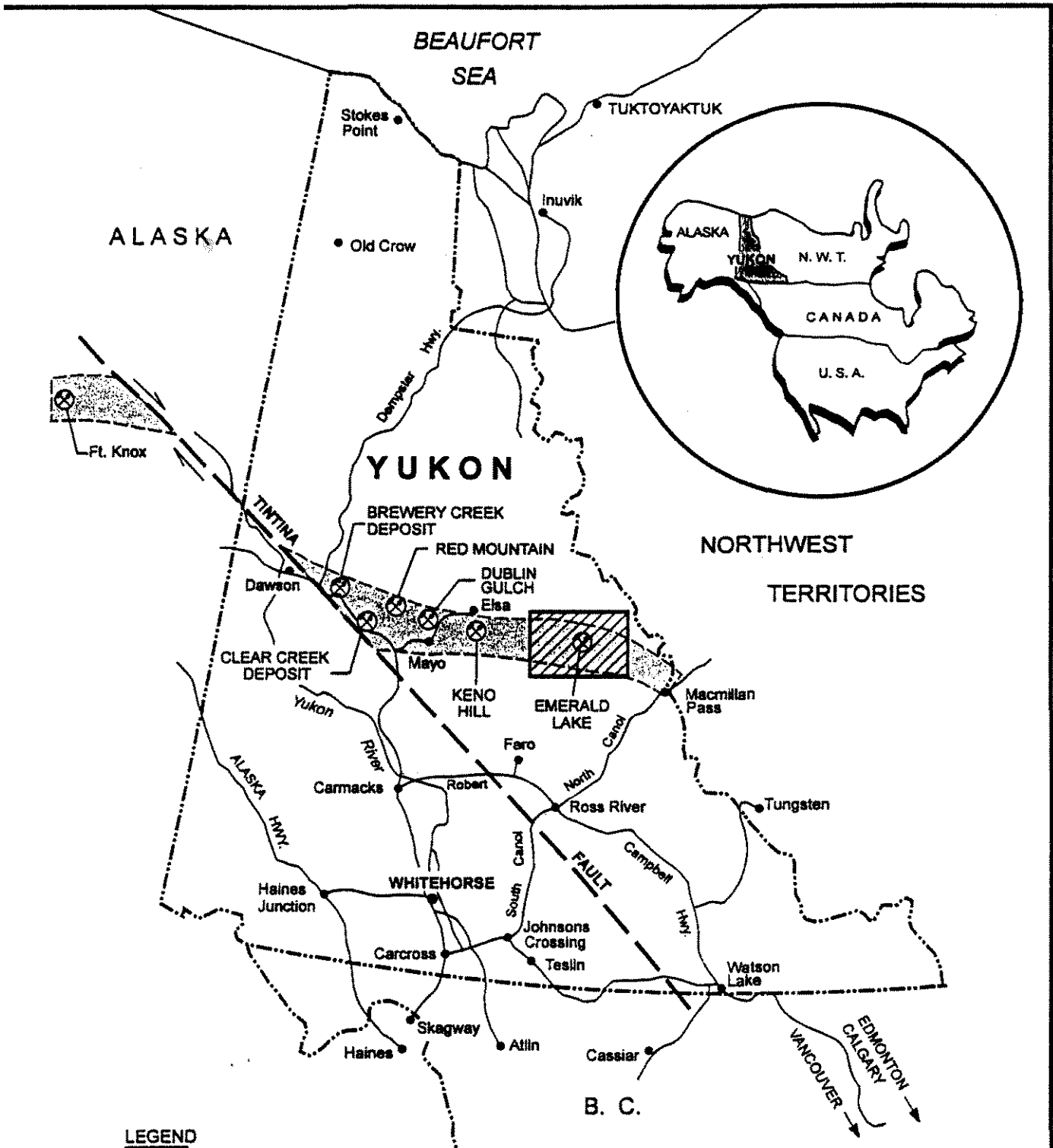
These claims were staked in an area known to be anomalous in gold and arsenic. The Arrowhead South and the Arrowhead North Properties occur within a large regional gold, arsenic and multi-element geochemical anomaly. Previous work in this area was done by Atlas Explorations and Agip Explorations.

## **SUMMARY**



Geological mapping on the AU and LM claims has established the presence of quartz diorite intrusive stocks which intrude sedimentary lithologic units. These geochemically anomalous regions host significant potential for a major gold deposit of the 'Fort Knox Type' associated with the Tombstone Suite Intrusives. This is because this area of the Selwyn Basin has recently been recognized to host intrusions dated between 87 Ma and 94 Ma.

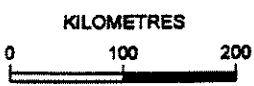
## **LOCATION, ACCESS AND PHYSIOGRAPHY**

The Arrowhead South property is located approximately 8 kilometres south of Arrowhead Lake and the Arrowhead North property is approximately 5 kilometres south-east of Arrowhead Lake. Both properties are located near the headwaters of the Rogue River, within the Selwyn Basin on map sheet 105-O/11. The claim blocks can be

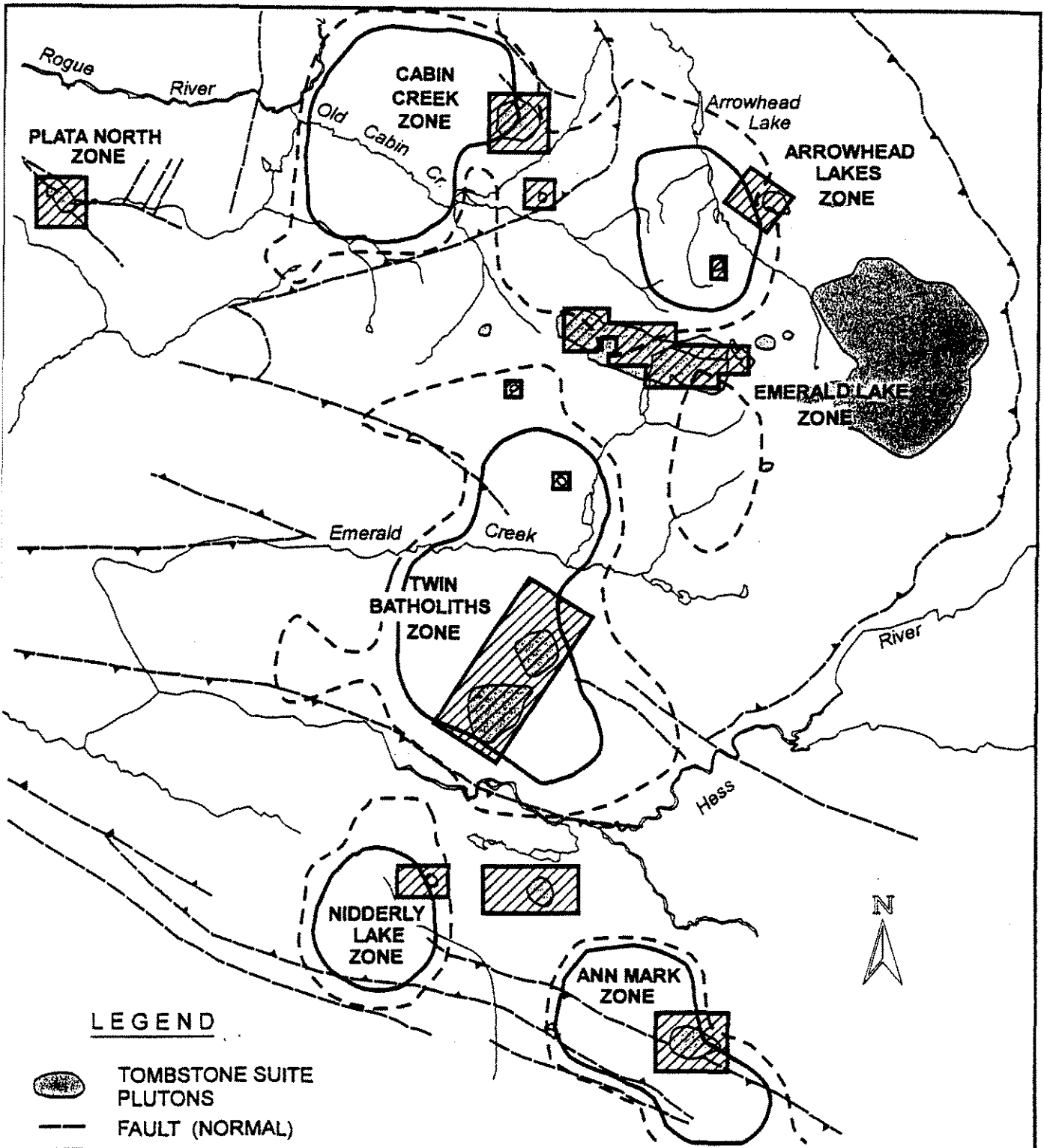


**LEGEND**






-  TOMBSTONE SUITE PLUTONIC BELT
-  HESS RIVER GOLD PROJECT



<b>APC VENTURES INC.</b>		
MAYO MINING DISTRICT, YUKON		
<b>LOCATION MAP</b>		
DATE: JULY, 1995	SCALE: AS SHOWN	FIGURE NO. 1



**LEGEND**

-  TOMBSTONE SUITE PLUTONS
-  FAULT (NORMAL)
-  FAULT (THRUST)
-  90-95 PERCENTILE AU IN SILT
-  +95 PERCENTILE AU IN SILT



<b>APC VENTURES INC.</b>		
MAYO MINING DISTRICT, YUKON		
<b>GOLD ANOMALIES</b>		
DATE: JULY, 1985	SCALE: AS SHOWN	FIGURE NO. <b>2</b>

accessed by helicopter. The topography is moderately steep and rugged making traversing difficult in certain localities.

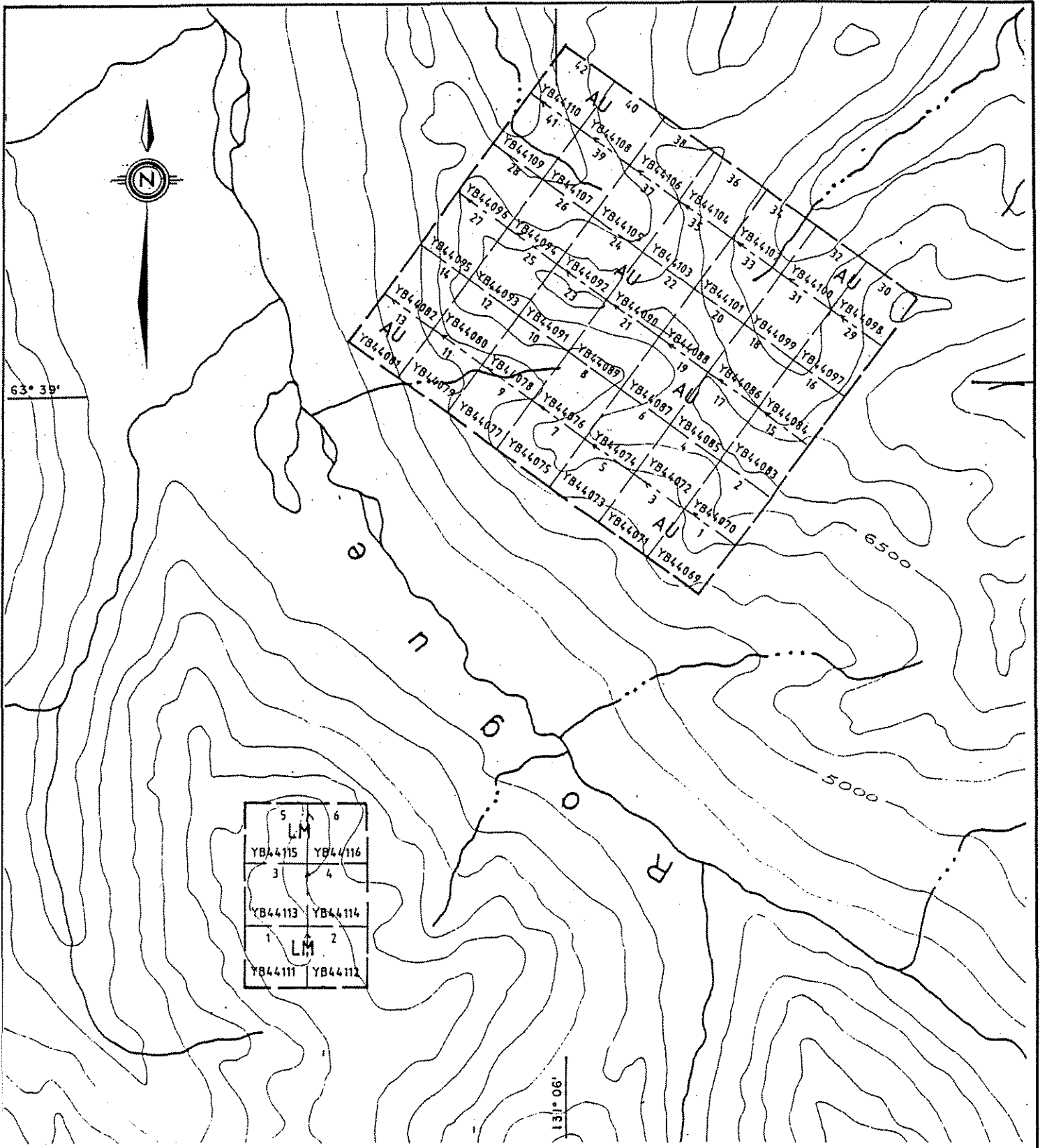
## REGIONAL GEOLOGY

The claim blocks are located in the Selwyn Basin. The AU claim block covers a Cretaceous stock which intrudes Cambrian to Devonian basinal sedimentary rocks consisting of black shales, argillites, cherts, and sandstones. The LM claim block covers a Cretaceous quartz monzonite and granite stock which intrudes into Silurian argillite. Regionally, this area of the Selwyn Basin was intruded by numerous stocks and dikes of the Tombstone Suite and later was intruded to the south by large batholiths of the Selwyn Suite. The Selwyn Basin hosts the Fort Knox deposit, an intrusive hosted gold deposit of large tonnage and low grade. This deposit occurs in Alaska within a region of the Selwyn Basin that has been offset to the north by the Tintina Trench.

Intrusive bodies occur throughout the Selwyn Basin in the Yukon, and stocks are often associated with gold mineralization. The Brewery Creek deposit, <sup>400 km to the east</sup> ~~25 miles to the northwest~~, is largely intrusive hosted and hosts in excess of 17 million tons of .056 opt Au. This deposit is currently being expanded and is slated for production in 1996. Another significant intrusive hosted deposit occurs at Dublin Gulch, some <sup>300 km</sup> ~~25 miles~~ to the ~~north~~east, where a geological reserve of 100,000,000 tonnes of >.32 OPT Au has been delineated (>3 million ounces of gold). The Macmillan Pass area lies on the eastern margin of the Selwyn Basin, a site of marine sedimentation from the Cambrian to Triassic. The basin is underlain by clastic sediments derived from the western edge of the North American craton.

During Devonian time, faulting and uplift of the central part of the basin formed a series of grabens and horsts. The grabens were infilled with clastic sediments derived from erosion of the uplifted portions.

A major period of regional folding and faulting during the Cretaceous caused east-west shortening of the sedimentary package. This regional crustal thickening was accompanied by partial melting and intrusion of acid to intermediate igneous rocks.



KILOMETRES



<b>APC VENTURES INC.</b>		
<b>ARROWHEAD LAKES ZONE</b>		
MAYO MINING DISTRICT, YUKON		
<b>CLAIM MAP</b>		
DATE: JULY, 1995	SCALE: 1 : 40,000	FIGURE: 2

## MINERALIZATION

The Arrowhead Zone consists of a variety of styles of mineralization, the most common of which is a series of subparallel quartz-arsenopyrite-gold veins which vary from a few centimeters to a meter in width and occur throughout the pluton. Other forms of mineralization include stockwork and sheeted zones of quartz-pyrite-arsenopyrite veinlets, quartz-calcite-sphalerite-stibnite veins, and dissemination and replacements of pyrite and arsenopyrite.

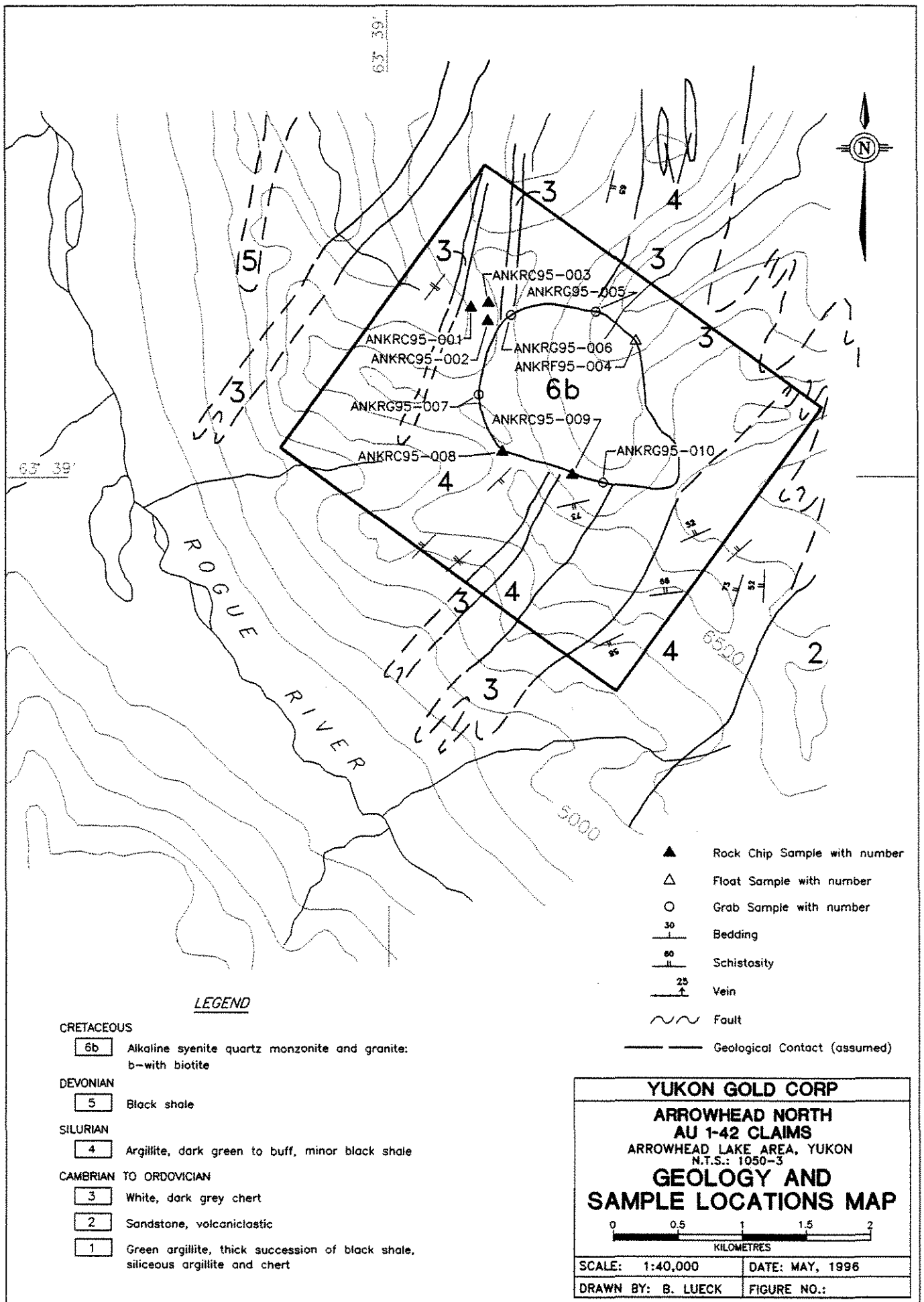
The zone of mineralization is found within a small granitic stock approximately 1 kilometer in diameter. Intense sulphide veining occurs throughout the pluton, although the central region is covered by a small cirque glacier.

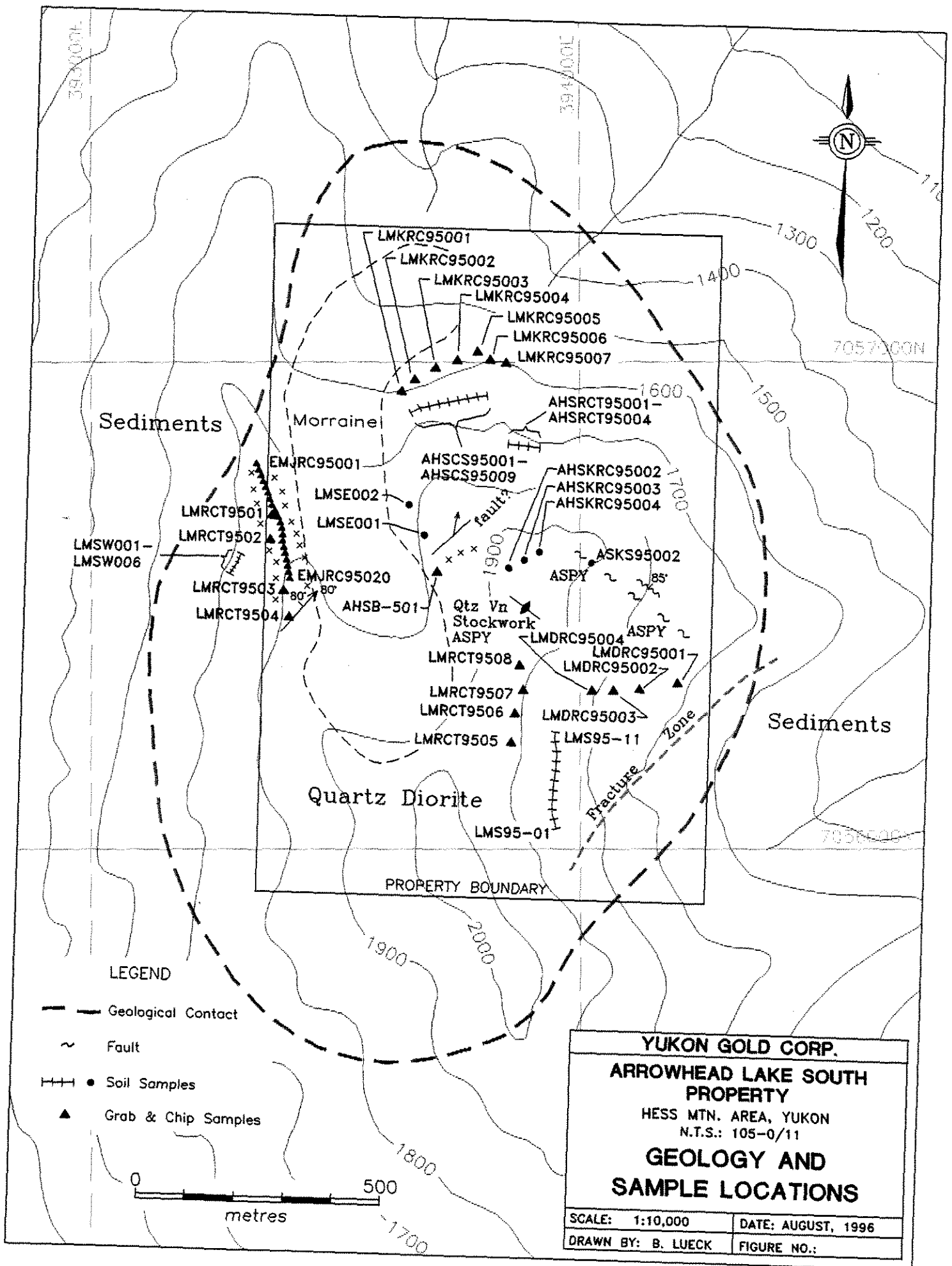
Assay results from rock chip samples and soil samples indicate that potentially economic gold grades are contained within the Arrowhead Zone. High gold values are associated throughout with bismuth.

Initial sampling of the Arrowhead Zone consisted of a series of 2 meter chip samples across the quartz-arsenopyrite veins. Assays ranged from 1.6 grams Au/tonne to 14.64 grams Au/tonne (.427 ounce Au/ton) and averaged 5.26 grams/tonne for 7 samples. A general pattern was demonstrated on these veins showing that grades got gradually higher at lower elevations. Stockwork and sheeted veins of quartz-pyrite-arsenopyrite are found near the small cirque glacier in the central region of the Arrowhead Zone. These veins were sampled at ten meter intervals. Individual samples assayed up to 1.1 grams Au/tonne and averaged .2 grams / tonne over 150 meters. These results are from a high elevation and indicate that potential exists for bulk tonnage mineralization, given that the gold grade appears to increase with depth in this system.

Soil samples were taken at lower elevations within the pluton and substantiate the theory that grades increase with depth. The area is recently glaciated and little soil enrichment is to be expected. Soil sample lines showed gold in soil values ranging from 93 to 1688 ppb and contained an overall average of .536 grams Au/tonne over a line







distance of 800 meters. This is a significant upgrade from the .2 gram Au/tonne average for the samples from rock at higher elevations.

Rock debris in the terminal moraine of the cirque glacier indicates that the most intense alteration and mineralization occurs beneath and at the foot of the cirque. Due to the large size of this hydrothermal system and the presence of high gold values in soil and in rock chip samples, drilling of the stockwork zone is warranted as a potential gold porphyry target.

### **LOCAL GEOLOGY**

The AU claim block covers a Cretaceous stock which intrudes early to mid Paleozoic basinal sedimentary rocks consisting of Cambrian to Ordovician green argillite, sandstone, and dark grey chert, Silurian dark green to buff argillite, and Devonian black shale. The LM claim block covers a Cretaceous quartz monzonite and granite stock which intrudes into Silurian sediments consisting of thinly bedded, rusty to dark green to buff argillite which contains minor black shale and chert partings. A bright orange dolostone occurs as a single medium to thick layer near the base of the argillite succession.

### **PREVIOUS WORK**

Regional soil and stream sediment studies were conducted by Atlas Explorations and Agip Explorations between 1968 and 1982. Various base metal anomalies were identified which were associated with the intrusive bodies found on the property. Minor precious metal anomalies were identified in stream sediments by Agip Explorations and by government regional silt sampling.

## **1995 WORK PROGRAM**

The 1995 work program consisted of 50 days of intensive helicopter supported rock-chip, silt and soil sampling program. Professional climbers were hired to access the nearly vertical exposures in some areas. A total of 10 rock chip and grab samples were taken at the Arrowhead North property (Appendix) and 59 rock chip and soil samples were taken at the Arrowhead South property (Appendix) to provide a database for further exploration and drilling of the defined areas of gold mineralization. Samples were analyzed for gold, silver, copper, arsenic, antimony, molybdenum, bismuth and tungsten. Sample locations are plotted on figures 2 and 3 and sample descriptions and assays are listed in table 1.

The intrusive stocks at the Arrowhead claims are strongly mineralized with several stages of hydrothermal activity evident, including spectacular miarolitic cavities containing gold, molybdenum and tungsten bearing minerals, east-west striking, north-dipping veins containing gold, molybdenum, scheelite, bismuthinite and telluride minerals and north-south striking, steeply-dipping fractures that sometimes contain disseminated sulfides.

## **DISCUSSION**

The Arrowhead Lake claims at Emerald Lake host previously identified gold mineralization partially delineated by rock chip sampling, channel sampling, and silt and soil geochemistry. Sampling in 1995 has confirmed the existence of intrusive hosted gold deposits similar in character to those at Dublin Gulch, Fort Knox and Brewery Creek. The target is a large, low grade, disseminated or stockwork gold deposit hosted by both the intrusive rocks and the altered and veined sedimentary rocks adjacent to the intrusions.

Growth fractures, fracture coatings and sheeted veins all contain significant gold values associated with bismuth. This style of mineralization indicates that there is a high probability for the discovery of bulk tonnage gold mineralization on the claims. The properties are judged to have excellent potential for the discovery of significant reserves of gold. Large porphyry gold targets have not been explored for in the past and much of the previous work focused on mineralization which was hosted by veins outside of the perimeter of the plutons. Since the discovery of the Fort Knox, Brewery Creek and Dublin Gulch deposits, this type of deposit has become an important exploration target.

### **CONCLUSIONS and RECOMMENDATIONS**

Previous exploration in the Hess River region has delineated several zones of potentially economic mineralization on the ground described in this report. Regional scale anomalous concentrations of gold and arsenic in silt and soil are associated with the various Tombstone Suite intrusions in this area. There is potential for delineation of a large low-grade gold deposit of the 'Fort Knox type' on the Arrowhead Lake claims.

It is recommended that further regional sampling be carried out on the property in the vicinity of sample ANKRC 95002 as this sample carried significant gold and bismuth values.

If further mineralization is identified, the program may include drilling of the identified mineralization, as there is a major drill program being carried out in this region by the operator.

## EXPENDITURES (STATEMENT OF COSTS)

<b>Geologist</b>	<b>- 20 days at \$300.00/day</b>	<b>\$6000.00</b>
<b>Crew Foreman</b>	<b>- 20 days at \$250.00/day</b>	<b>\$5000.00</b>
<b>Prospector</b>	<b>- 20 days at \$200.00/day</b>	<b>\$4000.00</b>
<b>Truck and Fuel</b>	<b>- 2 days at \$100.00/day</b>	<b>\$200.00</b>
<b>Helicopter</b>	<b>25 Hrs. @ \$1000/Hr.</b>	<b>\$25,000.00</b>
<b>Camp costs</b>	<b>- flagging- tents- food- etc. - 60 mandays at \$75.00/manday</b>	<b>\$4,500.00</b>
<b>Report and Drafting</b>		<b>\$5,000.00</b>
<b>Assays</b>	<b>69 samples @ \$20/sample</b>	<b>\$1,380.00</b>
<b>Total</b>		<b>\$51,080.00</b>

***Personnel:***

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Tom Morgan, General Delivery, Dawson City, Yukon

Marco Van Wermeskerken, 1210-675 W. Hastings, Van., B.C.

Kelly Lenglet, 1210-675 W. Hastings St., Van., B.C.

**PROPOSED EXPENDITURES (STATEMENT OF COSTS)**

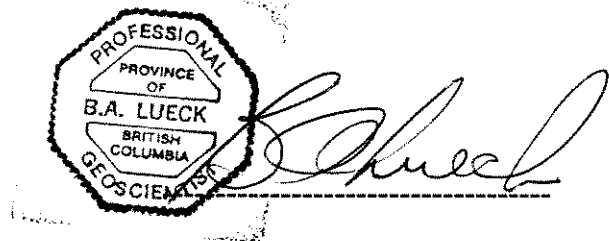
**Hess River Project, Yukon Territory: 1996 Budget**

<b>DESCRIPTION</b>	<b>EXPENSE</b>	<b>BALANCE</b>
<b><u>CAMP SETUP</u></b>		
tent frames, tents	\$10,000	
lumber	\$8000	
stoves, heaters	\$2800	
plumbing	\$2000	
propane, tanks, hose fittings	\$4000	
generator, set wire, lights	\$4000	
stove, fridge, freezer	\$2500	
<b>SUBTOTAL</b>		<b>\$33,300</b>
<b><u>MOBILIZATION</u></b>		
Single Otter aircraft	220 miles @ \$6.50/mile	\$1,430
	~\$1500/trip for 5 trips	\$7,500
<b>SUBTOTAL</b>		<b>\$8,930</b>
<b><u>EXPLORATION</u></b>		
personnel, 4 persons	20 days @ \$1000/day	\$20,000
helicopter	20 hrs @ \$1000/hr	\$20,000
camp costs, 4 persons	20 days @ \$400/day	\$8,000
expediting	20 days @ \$100/day	\$2,000
flights, supplies	5 flights @ \$1500/flight	\$7,500
<b>SUBTOTAL</b>		<b>\$57,500</b>
<b>PROJECT TOTAL</b>		<b>\$99,730.00</b>

***Statement of Qualifications:***

I, Brian A. Lueck, of the City of Coquitlam, British Columbia, do hereby certify that:

1. I am a graduate of the University of British Columbia and possess a B. Sc. (honours) in Geology.
2. I have been employed as a consulting geologist or a government geologist since June of 1985.
3. I am currently enrolled in a M. Sc. program in geology at U. B. C.
4. I am a member in good standing of *The Association of Professional Engineers and Geoscientists of the Province of British Columbia*, and am currently registered as a ***P. Geo.***
5. I have been present on the property and have reviewed the data and inspected the field work and I believe this report to be an accurate reflection of the work performed on the property during 1995.



Brian A. Lueck

*P. Geo.*  
Geologist



LM claims										
SAMPLE #	DESCRIPTION	WIDTH	Au-ppb	Ag-ppm	Cu-ppm	As-ppm	Bi-ppm	Sb-ppm	Mo-ppm	
AHSB-501RC	central alteration	10.0	1040							
AHSKRC95002	Py, ASP on fract; qtz eye porphyry	10.0	185							
AHSKRC95003	fresh qtz, biotite granite	10.0	30							
AHSKRC95004	minor ASPY on fract in above	10.0	1510							
AHSRCT95001	arsenopyrite + qtz veins with bleached wallrock	4.0	300							
AHSRCT95002	arsenopyrite + qtz veins with bleached wallrock	2.0	485							
AHSRCT95003	arsenopyrite + qtz veins with bleached wallrock	2.0	2010							
AHSRCT95004	arsenopyrite + qtz veins with bleached wallrock	3.0	3050							
LMRCT9501	mineralized vug in granite	1.0	179	6.6	>100	>100	>100	>100		
LMRCT9502	mineralized vuggy vein in dark granite	1.0	334	20	>100	>100	>100	>100		
LMRCT9503	massive arsenopyrite in quartz in granite	2.0	1653	20.7		>100	>100	>100		
LMRCT9504	Kaolinite alteration, calcite in granite	1.0	78	5.4		>100		>100		
LMRCT9505	massive Arseno vein granite	1.0	2888	26.7	>100	>100		>100		
LMRCT9506	massive Arseno vein granite	1.0	4673	48.4	>100	>100	>100	>100		
LMRCT9507	massive Arseno vein granite	1.0	6465	43.5	>100	>100				
LMRCT9508	massive Arseno vein granite	2.0	1624	3						
LMDR95001	massive Arsenopyrite veins; line on contact into	2.0	4782	8.6	>100	>100	>100	>100		
LMDR95002	intrusive; parallel line running ~100m down from	2.0	745	5.9	>100	>100	>100	>100		
LMDR95003	LMRCT9505-08, taken in same arseno veins lower	2.0	165	16.2		>100	>100	>100		
LMDR95004	in system	2.0	0.427	>50.0	>100	>100	>100	>100		
LM001SOIL EAST	West facing	Soil	627	6.2	>100	>10000	>100	>100		
LM002SOIL EAST	West facing	Soil	459	4.3	>100	>10000	>100	>100		
LMSOILWEST001	East facing in main zone of arsenopyrite veining	Soil	315	10	>100	>10000	>100	>100		
	50m spacings in intrusive (going North) (001-006)									
LMSOILW002		Soil	219	7.5	>100	>10000	>100	>100		
LMSOILW003		Soil	379	6.5	>100	>10000	>100	>100		
LMSOILW004		Soil	180	9.5	>100	>10000	>100	>100		
LMSOILW005		Soil	93	5.9	>100	>10000	>100	>100		
LMSOILW006		Soil	399	25.7	>100	>10000	>100	>100		
LMS95-01	in intrusive going south of main zone of arseno (01-11)	Soil	374	9.7	>100	>10000		>100		
LMS95-02		Soil	360	12.8	>100	>10000				
LMS95-03		Soil	1403	27.1	>100	>10000				
LMS95-04		Soil	393	12.2	>100	>10000				
LMS95-05		Soil	526	11.6	>100	>10000	>100			
LMS95-06		Soil	1688	16.4	>100	>10000	>100	>100	>100	
LMS95-07		Soil	389	6.2	>100	>10000	>100			
LMS95-08		Soil	382	6.4	>100	>10000	>100			
LMS95-09		Soil	392	5.2	>100	>10000	>100			
LMS95-10		Soil	709	4.4	>100	>10000	>100			
LMS95-11		Soil	904	4.6	>100	>10000	>100	>100		
LMKRC95001-007	trace Au, Ag with some As; in sedimentary host									
AHSC95001	taken on the north face (001-009)	Soil	90	3						
AHSC95002		Soil	190	3.2						
AHSC95003		Soil	60	2.6						
AHSC95004		Soil	135	1.2						
AHSC95005		Soil	310	2.4						
AHSC95006		Soil	65	0.4						
AHSC95007		Soil	405	3.8						
AHSC95008		Soil	1020	16						
AHSC95009		Soil	200	9						
sample	description	interval	Au ppb	Cu ppm	As ppm	Mo ppm	Ag ppm	Bi ppm		
	Arrowhead South claims									
	chip sample, mostly arsenopyrite plus quartz									
EMJRC9501	flagged at beginning of each sample	0-10 m	95	48	49	15	0.1	36		
EMJRC9502	all samples of quartz plus sulfide veins in	10-20 m	95	28	47	13	<0.1	23		
EMJRC9503	med. grained quartz monzonitic pluton	20-30 m	52	39	>10000	13	0.1	17		
EMJRC9504		30-40 m	114	44	255	14	0.5	67		
EMJRC9505		40-50 m	76	57	142	12	0.1	40		
EMJRC9506		50-60 m	90	52	1693	31	3.6	62		
EMJRC9507		60-70 m	73	34	295	121	0.5	46		
EMJRC9508		70-80 m	150	23	101	6	0.3	120		
EMJRC9509		80-90 m	1066	39	290	23	2.4	355		
EMJRC9510		90-100 m	109	20	785	4	0.3	30		
EMJRC9511		100-110 m	317	28	114	3	0.2	71		
EMJRC9512		110-120 m	31	20	97	3	<0.1	7		
EMJRC9513		120-130 m	30	41	243	2	<0.1	7		
EMJRC9514		130-140 m	39	27	53	2	<0.1	23		
EMJRC9515		140-150 m	<5	21	94	2	<0.1	2		
EMJRC9516		150-160 m	6	36	78	2	<0.1	<1		
EMJRC9517		160-170 m	17	20	36	3	<0.1	3		
EMJRC9518		170-180 m	26	37	26	2	<0.1	5		
EMJRC9519		180-190 m	30	36	70	3	<0.1	<0.1		
EMJRC9520		190-200 m	14	36	255	2	0.1	0.1		