

MAP NO.: ASSESSMENT REPORT  
1150 11 PROSPECTUS  
CONFIDENTIAL X  
OPEN FILE

DOCUMENT NO: 093167  
MINING DISTRICT: DAWSON  
TYPE OF WORK: GEOCHEM, TRENCHING

REPORT FILED UNDER: GRAHAM DAVIDSON

DATE PERFORMED: OCT - NOV 1993

DATE FILED: FEB 7, 1994

LOCATION: LAT.: 63°42'N

AREA: MCKINNON CREEK

LONG.: 139°06'W

VALUE \$: 9,200

CLAIM NAME & NO.: KEY 3-6(YA87794-797), KEY 11 (YA87802), KEY 21-23 (YA87810-812), KEY 26 (YA87815), KEY 28 (YA87817), KEY 30 (YA87821), KEY 32 (YA87823), MCK 1-34 (YB45771-804)

WORK DONE BY: G.S. DAVIDSON

WORK DONE FOR: RICHLIDE INVESTMENTS CORP

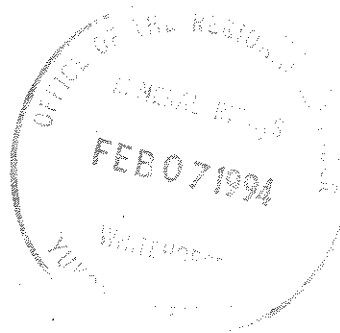
DATE TO GOOD STANDING:


REMARKS: BULK SAMPLING IN OLD TRENCHES  
PRODUCED POOR RESULTS. (500KG SAMPLES)



RMMR

04 February 1994



Your file      Votre référence

Our file      Notre référence

Graham Davidson  
 #1 Boswell Crescent  
 WHITEHORSE, Yukon  
 Y1A 4T2

Dear Mr. Davidson:

**RE: Application for Certificate of Work - KEY & MCK Quartz Claims**

We acknowledge receipt of your application and report received in this office on the 31st day of January 1994.

In calculating the fees for this application, we note that you have not included KEY 30, Grant YA87821. Upon investigating, we note that when the new claim block MCK was plotted by our drafting division, the claim had been removed. We assume that this is the reason why you missed adding it to your grouping and certificate of work. We would appreciate your authorization to add the claim to the appropriate paperwork. As a result, the fees are \$15.00 short, which we would ask that you remit to this office at your early convenience.

Further, there are two areas in the report which require clarification:

1. Statement of Costs - We require more details about your expenditures than provided in this statement. Are you applying for the actual costs of your program of physical work on the KEY claims? While we realize that you have done more work than you require for the purpose of this renewal, the schedule of quartz representation work, Section [5(c)], requires a statement of proper accounting, receipts and/or vouchers, etc. to be submitted for approval. In addition, it is essential that we know how much work was done on, or apportioned to, each of the claims quoted in your certificates, and used to group and renew other claims, in order to verify that there is sufficient value for your purpose. You have quoted Key 3,4,5,6,11,26,28 and 32 as the claims worked. Please provide the value of work performed on each of these claims, noting how many bulk samples were taken, trenches dug, assays performed, analyses made, etc.

2. Sample, Drill and Trench Locations - It is somewhat difficult from the maps provided to tell what was 1993 work and where existing shafts, rotary drill sites, trenches and adits are. It would appear that some of the bulk sampling sites (93 series) are not shown on any maps. Some of the claims cited on the certificate of work as having had work done (eg. KEY 32), do not appear on any maps. Would you please review your report to the certificate copies attached and ensure that reference is made to these specific claims on the maps. There may be additional technical details required once Geology has reviewed the report.

For your reference, please see attached copy of Section 54(4) of the Yukon Quartz Mining Act with respect to the three year limitation on geological investigations. As a result of this section, geologist's wages at \$350.00 per day are disallowed, but physical labour to collect samples, etc. can be charged out at \$150.00 per day.

Also attached is a copy of the Schedule of Representation work (part 1 and 5), which allows us to accept the "actual" cost of sampling, blasting trenching, etc. rather than "Excavation through rock or frozen material requiring the use of explosives - by hand at \$30.00 per cubic yard or by mechanical means \$14.00 per cubic yard".

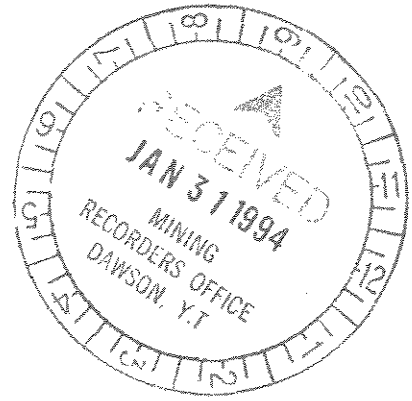
Please note that if a government grant was received for any portion of the exploration program, the amount of the grant should also be shown.

We have contacted Mr. Richards of Richlode Investments and he is faxing copies of the invoices from Process Research Association Ltd. to you, for incorporation into your statement of costs.

We would appreciate your prompt attention to this matter. Should you have any questions regarding the information required, please do not hesitate to contact this office.

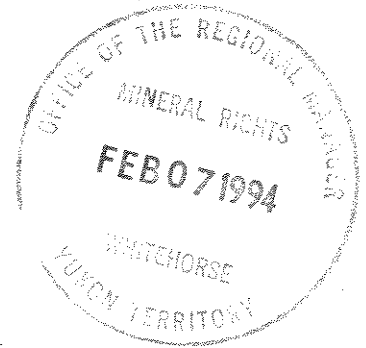
Yours truly,

Marion E. Dejean  
Mining Recorder - Dawson Mining District  
Post Office Box 249  
Dawson City, Yukon Territory  
YOB 1G0 (403) 993-5343  
FAX 993-5701



EXPLORATION REPORT  
on the  
McKINNON CREEK PROJECT

Indian River Area,  
Dawson Mining District  
NTS 115 O-11  
Lat. 63° 42'N Long. 139° 06'W



093167

For: RICHLODE INVESTMENTS CORP.  
Suite 601-2695 Granville St.  
Vancouver, B.C.  
V6H 3H4

By: G. S. Davidson, P.Geol.  
January 1994

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## SUMMARY

McKinnon Creek is a tributary of the Indian River drainage, presently the most productive placer district in the Yukon. Bedrock over much of the area consists of quartz pebble conglomerate which may be a source of the prolific pay gravel. Investigations of the quartz pebble conglomerate started with the McKinnon Brothers in 1899. They spent 20 years excavating many pits and shafts but failed to produce significant amounts of lode gold.

The McKinnon Creek Key Property consists of 12 KEY claims and 36 MCK claims; held by Richlode Investments Corp. under terms of an option agreement with Mr. D. Waugh of Toronto, Ontario.

Modern exploration (1974-1987) in the McKinnon Creek area includes diamond and rotary drilling; the most recent operator Volcano Resources Ltd. completed 464 meters of diamond drilling with assays ranging from 0.001 to 0.012 oz/ton (0.05 to 0.4g/t) gold. Mr. D. Waugh resplit the Volcano Resources drill core in 1990 and analyzed oversize and 100 mesh material. Drill hole 87-1 assayed 0.047 oz/ton from 43.5-48.5 ft. and 0.129 oz/ton from 73-76 ft.. Coarse gold was also noted in drill hole 87-2 from 52-55 ft.

A trenching and sampling program was performed by Richlode Investments in October and November of 1993. The purpose of the program was to overcome the reported "nugget effect" by collecting bulk samples of conglomerate and processing the entire sample through a recovery circuit. Seven 500 kg samples were taken from bedrock near old workings and shipped to Vancouver for processing. An additional 24 grab samples were collected from pits and trenches. Fine visible gold was noted in the pan concentrate from sample 93-1A however analysis of the bulk and grab samples produced very low to background gold values.

It is recommended that the Britannia Shaft be thawed and carefully sampled. A series of short diamond drill holes should be drilled in the Britannia Shaft area to try and intersect the gold bearing horizon detected by Mr. D. Waugh in drill holes 87-1 & 87-2. The core samples must be processed in a total gold recovery circuit including oversize and 100 mesh material.

## INTRODUCTION

This report describes a trenching and sampling program undertaken by Harris & Assoc. Exploration on behalf of Richlode Investments from October 9 to November 20, 1993. The program was directed by Mr. B. Harris. The writer made two trips to the property to mark out, sample and map the new trenches.

## LOCATION AND ACCESS

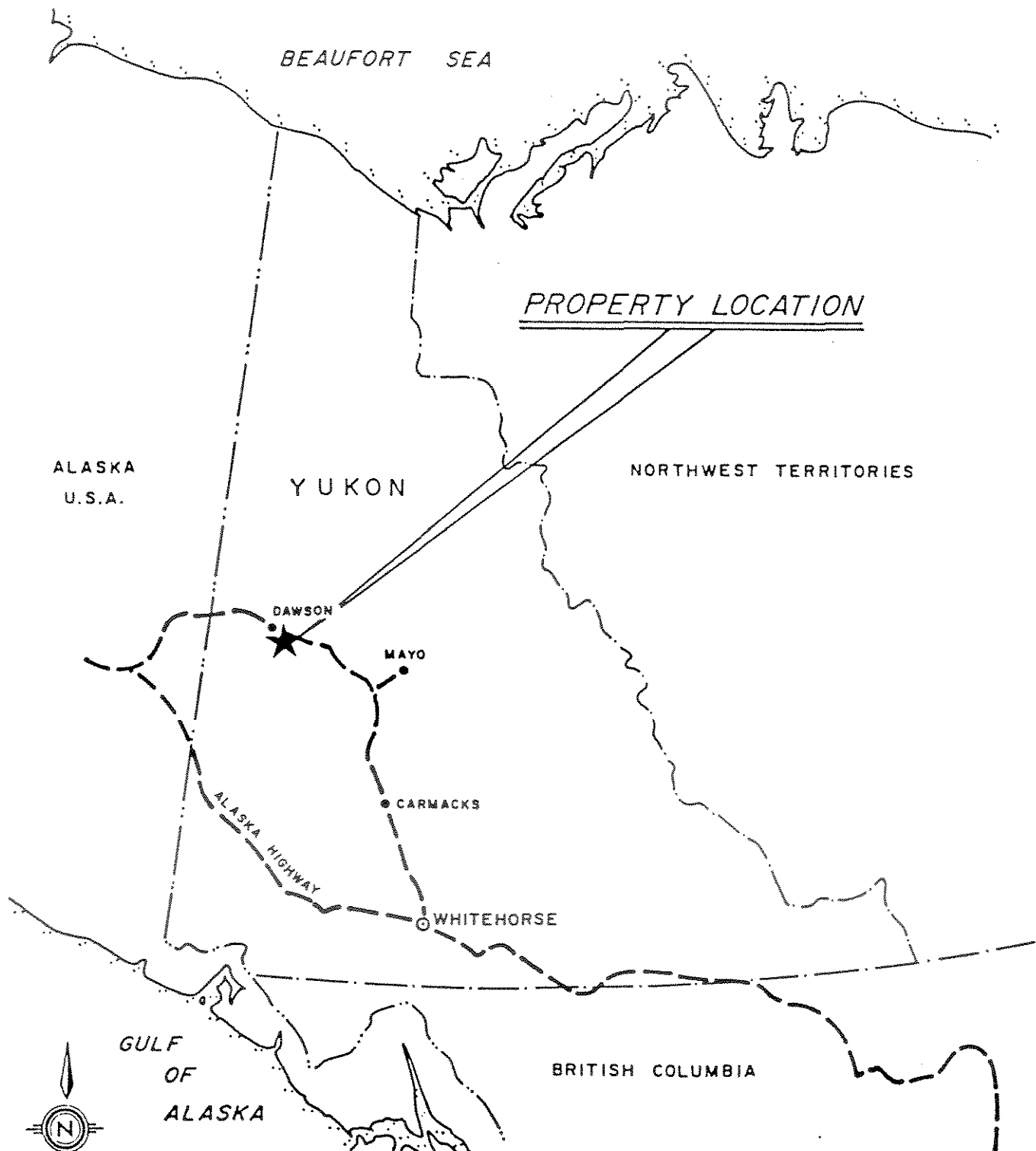
The claims are located 40 km southeast of Dawson City in the Yukon Territory of Canada. Access is via the Hunker and Quartz Creek roads which leave the Klondike Highway just south of Dawson City. Presently the claims are accessible by four wheel drive vehicle from the Quartz Creek road along a fairly soft trail that crosses the Indian River and runs up the west side of the McKinnon Creek valley. Forging the Indian River should only be attempted at low water levels. Figures 1 & 2 show the property location.

## PHYSIOGRAPHY

The Indian River is in a wide swampy valley surrounded by high rounded ridges and hills. Its major tributaries lie in long and deep side valleys. Elevations range from 1,500 feet in the main valley to 4,500 feet at the summit of the Midnight Sun Dome.

McKinnon Creek flows north from Haystack Mountain to the Indian River in a gently sloping area. On the property elevations range from 1500-2200 feet. The slopes cover an old burn and feature open groves of alder, birch and poplar interspaced with scrubby stands of spruce. Buck brush is thick in the valley bottoms which are covered with hummocks and swamp. Outcrop is minimal however overburden is shallow and the numerous old trenches and pits expose the bedrock.

The Indian River district has a northern interior climate which is reported to be dry with warm summers and long cold winters. The previous two summers have produced record rainfalls with local flooding. Temperatures average 15 deg. C in summer and -20 deg. C in winter. Snowpack averages 1-2 m.



PROPERTY LOCATION

ALASKA  
U.S.A.

YUKON

NORTHWEST TERRITORIES

DAWSON

MAYO

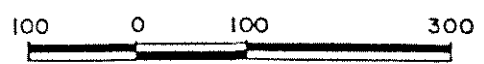
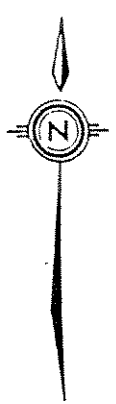
CARMACKS

WHITEHORSE

ALASKA HIGHWAY

GULF  
OF  
ALASKA

BRITISH COLUMBIA

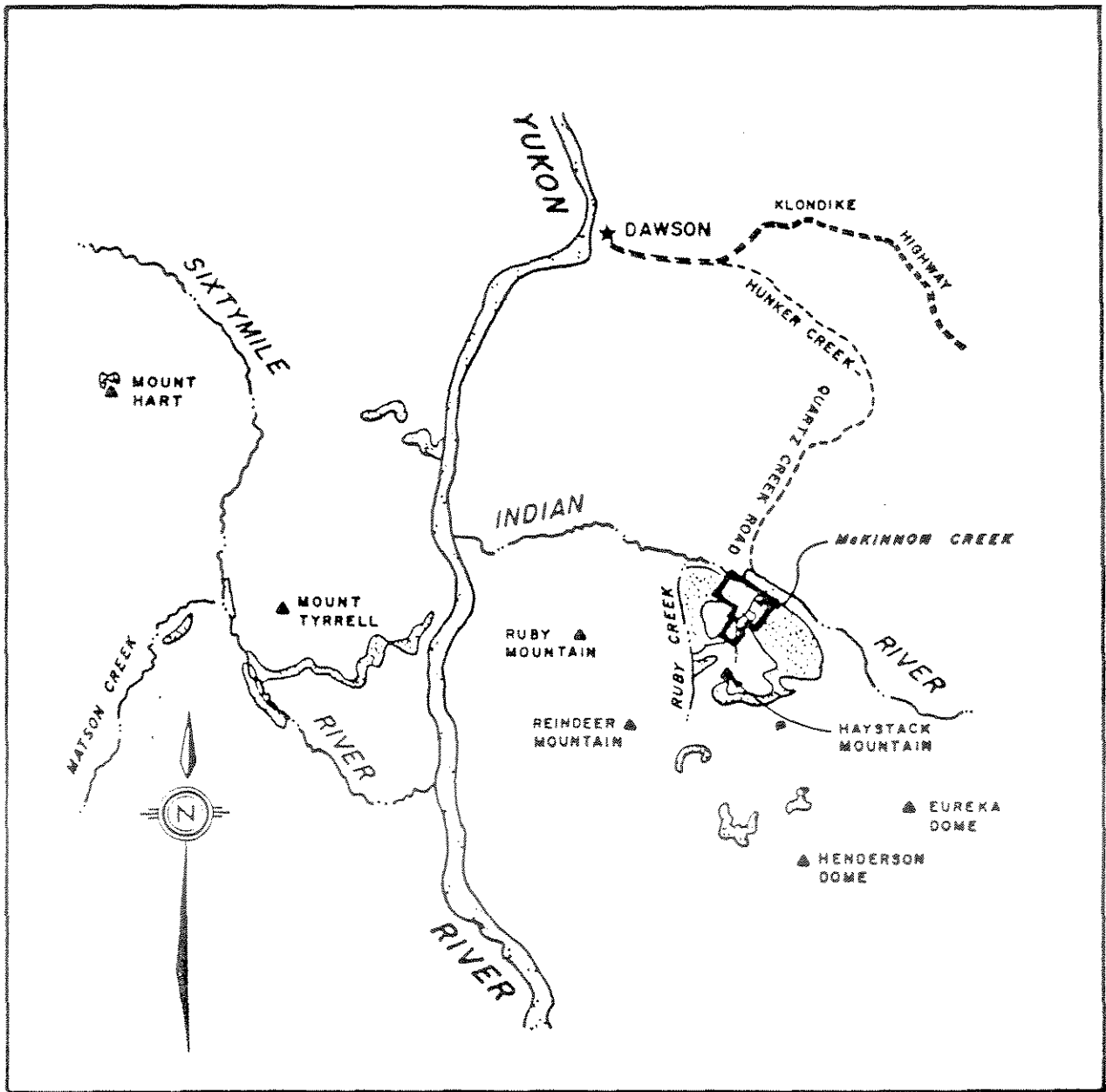


KILOMETRES

<b>RICHL ODE INVESTMENTS CORP.</b>			
McKINNON CREEK KEY PROPERTY McKINNON CREEK, INDIAN RIVER AREA DAWSON MINING DISTRICT, YUKON			
SCALE: 1: 7,603,200		FIGURE: 1	DRAFTED BY: B.D.S.

140°00'

139°00'



64°00'

63°30'

 DISTRIBUTION OF CLASTIC SEDIMENTARY ROCKS

FROM: G.W. LOWEY, 1984



### RICHLODE INVESTMENTS CORP.

### McKINNON CREEK KEY PROPERTY

McKINNON CREEK, INDIAN RIVER AREA

DAWSON MINING DISTRICT, YUKON

SCALE: 1:250,000	DATE:	MAP SHEET: 115-0-11	FIGURE: 2	DRAFTED BY: B.D.S.
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## PROPERTY

The property consists of 46 claims registered with the district Mining Recorder in Dawson City. The KEY claims appear to be tagged with all posts and lines well marked. Current expiry dates are February 3, 1994 for the KEY claims and October 25, 1994 for the MCK claims. Two years of assessment has been applied to all the claims. Figure 3 shows the claim plan.

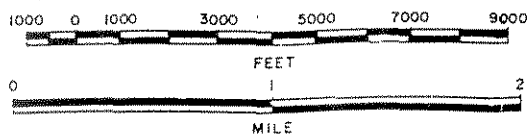
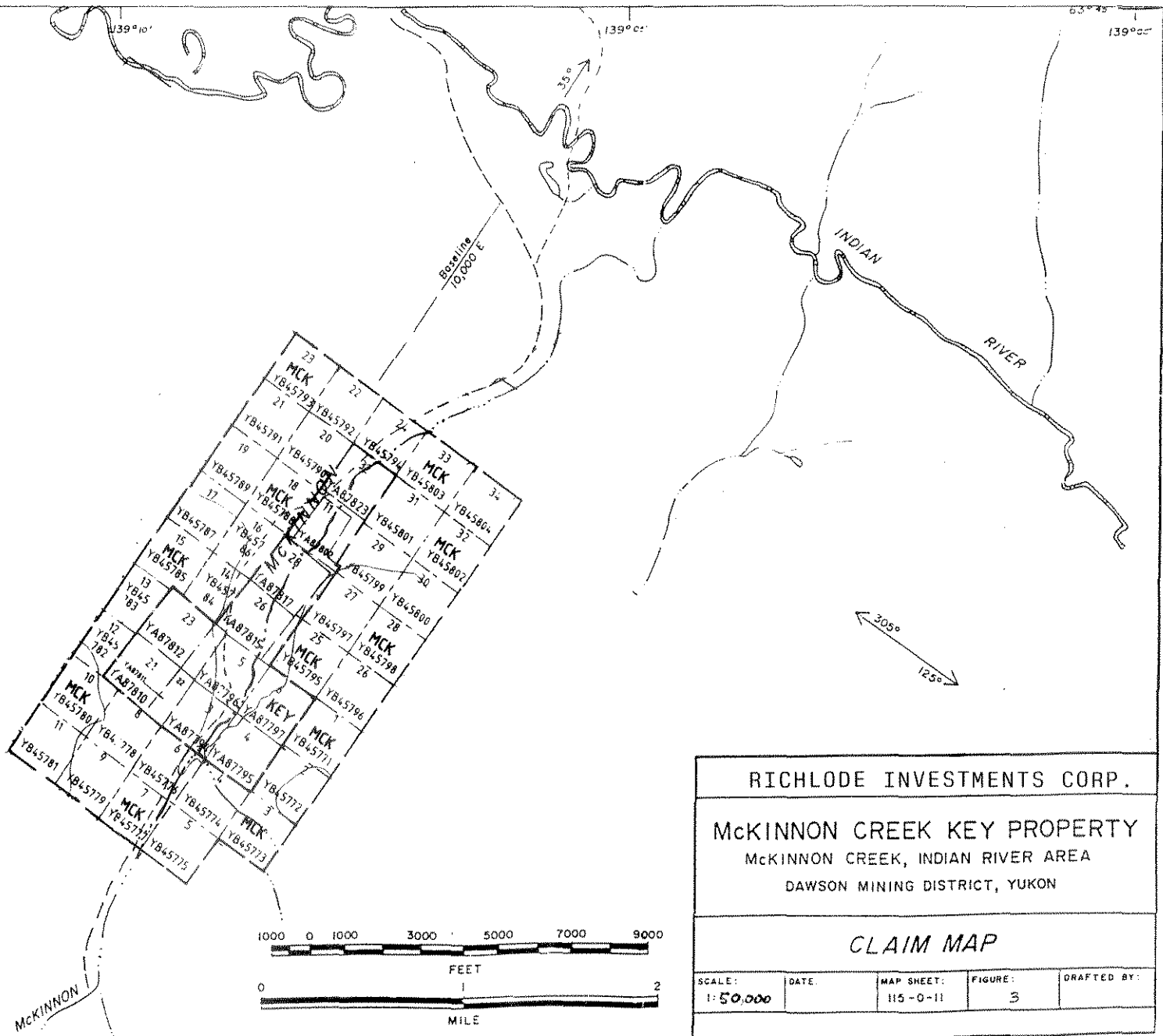
TABLE 1-CLAIM DATA

Claim Name	Record Number	Expiry Date (applied for)
KEY 3-6	YA87794-96	Feb. 3 1996
KEY 11	YA87802	Feb. 3 1996
KEY 21-23	YA87810-12	Feb. 3 1996
KEY 26	YA87815	Feb. 3 1996
KEY 28	YA87817	Feb. 3 1996
KEY 30	YA87821	Feb. 3 1996
KEY 32	YA87823	Feb. 3 1996
MCK 1-34	YB45771-804	Oct. 25 1996

Richlode Investments Corp. holds the claims under option from Mr. David Waugh of Toronto.

## HISTORY

McKinnon Creek and the Indian River are along the original Klondike trail connecting Whitehorse to Dawson. Established in 1899, this trail was used primarily in the winter by prospectors en route to the Klondike. The McKinnon Brothers arrived in the Klondike as seasoned prospectors and located the Britannia claim in 1899 on gold bearing quartz pebble conglomerate. Initial success and rumors attracted many other prospectors who staked claims and excavated numerous pits, adits and shafts. The McKinnon brothers persisted in lode gold exploration at McKinnon Creek until their deaths.



RICHLODE INVESTMENTS CORP.				
McKINNON CREEK KEY PROPERTY				
McKINNON CREEK, INDIAN RIVER AREA				
DAWSON MINING DISTRICT, YUKON				
CLAIM MAP				
SCALE:	DATE:	MAP SHEET:	FIGURE:	DRAFTED BY:
1:50,000		115-0-11	3	

A history of the early workings is reported by D.D. Cairnes(1908) in G.S.C. Memoir 284, page 237-238 and in Canadian Dept.of Mines Bulletin 222.

Modern exploration started in 1968 with sampling and mapping by Cominco Ltd. Conglomerate samples assayed from trace to 0.1oz/ton (3.4 g/t) gold.

Yukon Revenue Mines Ltd. (YRML) drilled four rotary holes in 1975 reporting trace gold values. On adjoining claims, Mr. R. Granger, director of YRML also reports that "significant amounts of gold were recovered from a number of patches of decomposed conglomerate by means of a small placer testing machine".

Coal Exploration in 1980 by Cyprus Anvil Mining Corp. located poor quality coal in one of three diamond drill holes.

In 1987 Volcano Resources Ltd. used a winter work program of grid development and geophysical surveys on the KEY claims for listing on the Vancouver Stock Exchange. Follow up work included nine NQ diamond drill holes located around the Britannia shaft and the Andromeda adit. Assays ranged from trace to 0.012 oz/ton (0.05 to 0.4 g/t) gold. Mr. Waugh reassayed sections of core in 1990; first, the core was crushed then, riffled twice and pulverized to 100 mesh. Oversize material contained gold in four samples and DDH 87-1 assayed 0.047 oz/ton from 43.5-48.5 ft. and 0.129 oz/ton from 73-76 ft..

## GEOLOGY

The Indian River district overlies the Yukon Cataclastic Terrane of the Canadian Cordillera. A thick sequence of metamorphic rocks composed primarily of quartz-biotite schist and gneiss of Precambrian age.

The Indian River area subsided in the Lower Cretaceous allowing the accumulation of clastic sedimentary rocks in fluvial and fan delta environments over the Klondike schists and gneisses. Approximately 500 meters thick, the Indian River Formation covers McKinnon Creek, east to Montana Creek and west to Ruby Creek. To the north the sediments are bounded by the Indian River Fault. Strata consists of light gray to dark gray-green to black interbedded pebble conglomerate, sandstone, shale and minor coal seams.

Carmacks Group andesites intrude and overlie the Indian River Formation.

Silicification and shearing of conglomerates in the McKinnon Creek valley indicate a fault zone along the valley. Hydrothermal activity in the fault zone may have introduced gold into the sediments or may have remobilized any existing gold.

Mr. G.W. Lowey describes the geology at McKinnon Creek in Yukon Exploration and Geology 1983, p.69-78. Figure 4 shows the geology.

### 1993 EXPLORATION

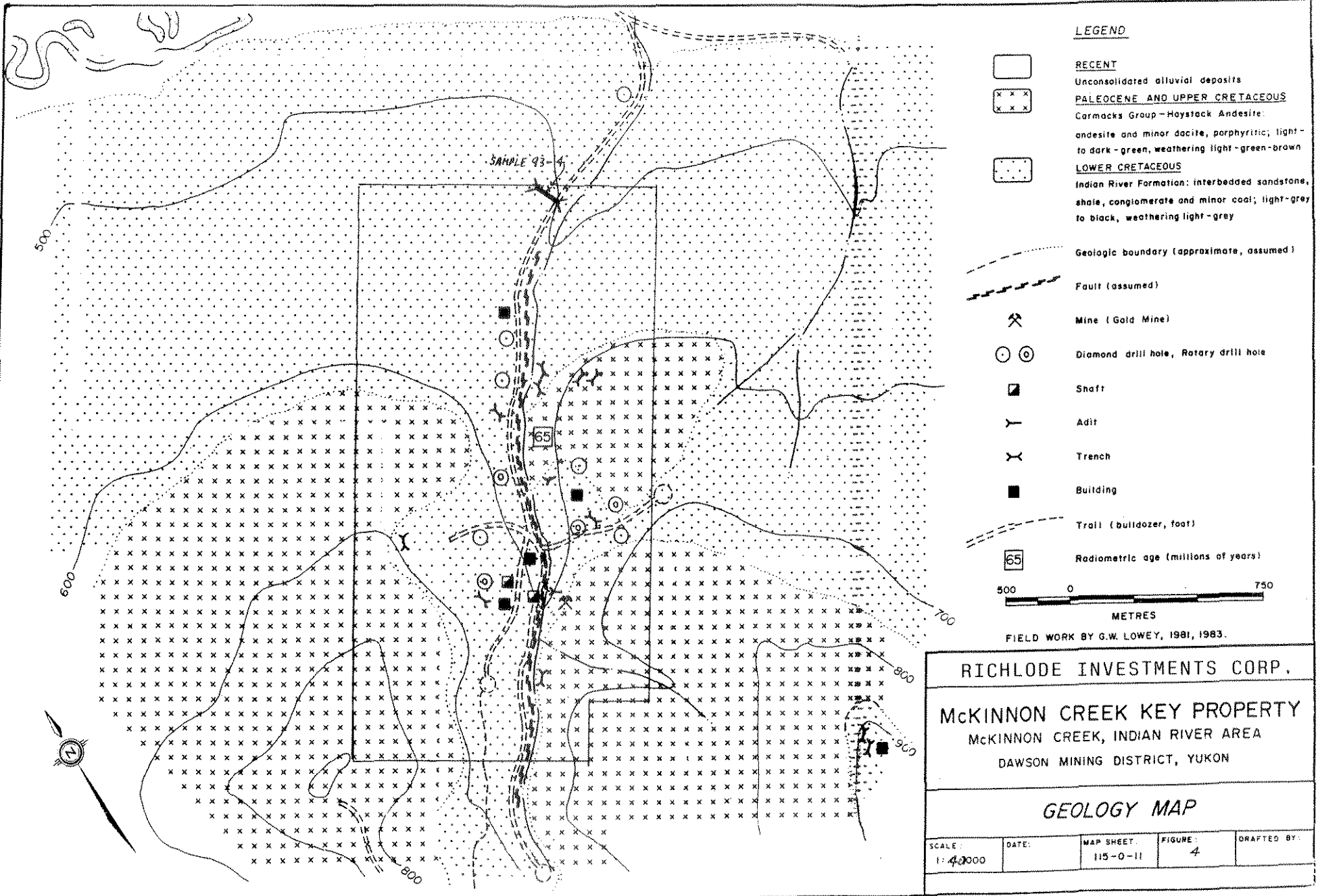
The writer visited the property in late September and marked out areas for trenching and sampling around the old Britannia shaft and the Andromeda adit. The purpose of the work program was to collect bulk samples of approximately 500 kg from the upper horizons of quartz pebble conglomerate.

A three man crew mobilized onto the property October 9 and established camp in an old trailer located across McKinnon Creek from the Britannia shaft. The crew consisted of B. Harris, T.Morgan and V. Malkovich.

A 955 Caterpillar track loader and a Case 680 front-end loader & back hoe were hired from Go-Old Mining and SidCo respectively. The Case 680 was poorly suited for the wet ground; most of the trenches were excavated using the trackloader. A compressor and jackleg were used with explosives to loosen the conglomerate.

In the Britannia shaft area a trench was blasted and excavated along the edge of the hillside across a section of white to dark gray quartz pebble conglomerate and interbedded layers of sandstone. Bedding indicates a shallow northwesterly dip and the hillside forms a dip slope. The trench wall exposes conglomerate containing pebbles of white vein quartz or less commonly dark quartz, quartzite, or schist in a matrix of sand and clay minerals. The pebbles are often flattened and range in size from 2-10 cm but average 5 cm in diameter. Pebbles compose 60% of the average conglomerate horizon.

Four 500 kg samples were taken from trench walls around the Britannia shaft. Samples 93-1A, 93-1B and 93-1D are of white to light gray crumbly conglomerate. Some silicification along fracture surfaces and minor sericite was noted. Sample 93-1C of darker gray conglomerate cut by stained silicified fractures was collected from the next layer above 93-1D. An additional 10 grab samples were taken in this area. Figures 5 and 6 show the sample and trench plans.



**LEGEND**

- RECENT**  
Unconsolidated alluvial deposits
- PALEOCENE AND UPPER CRETACEOUS**  
Carmacks Group - Hoystack Andesite:  
andesite and minor dacite, porphyritic; light- to dark-green, weathering light-green-brown
- LOWER CRETACEOUS**  
Indian River Formation: interbedded sandstone, shale, conglomerate and minor coal; light-grey to black, weathering light-grey
- Geologic boundary (approximate, assumed)
- Fault (assumed)
- Mine (Gold Mine)
- Diamond drill hole, Rotary drill hole
- Shaft
- Adit
- Trench
- Building
- Trail (bulldozer, foot)
- 65 Radiometric age (millions of years)

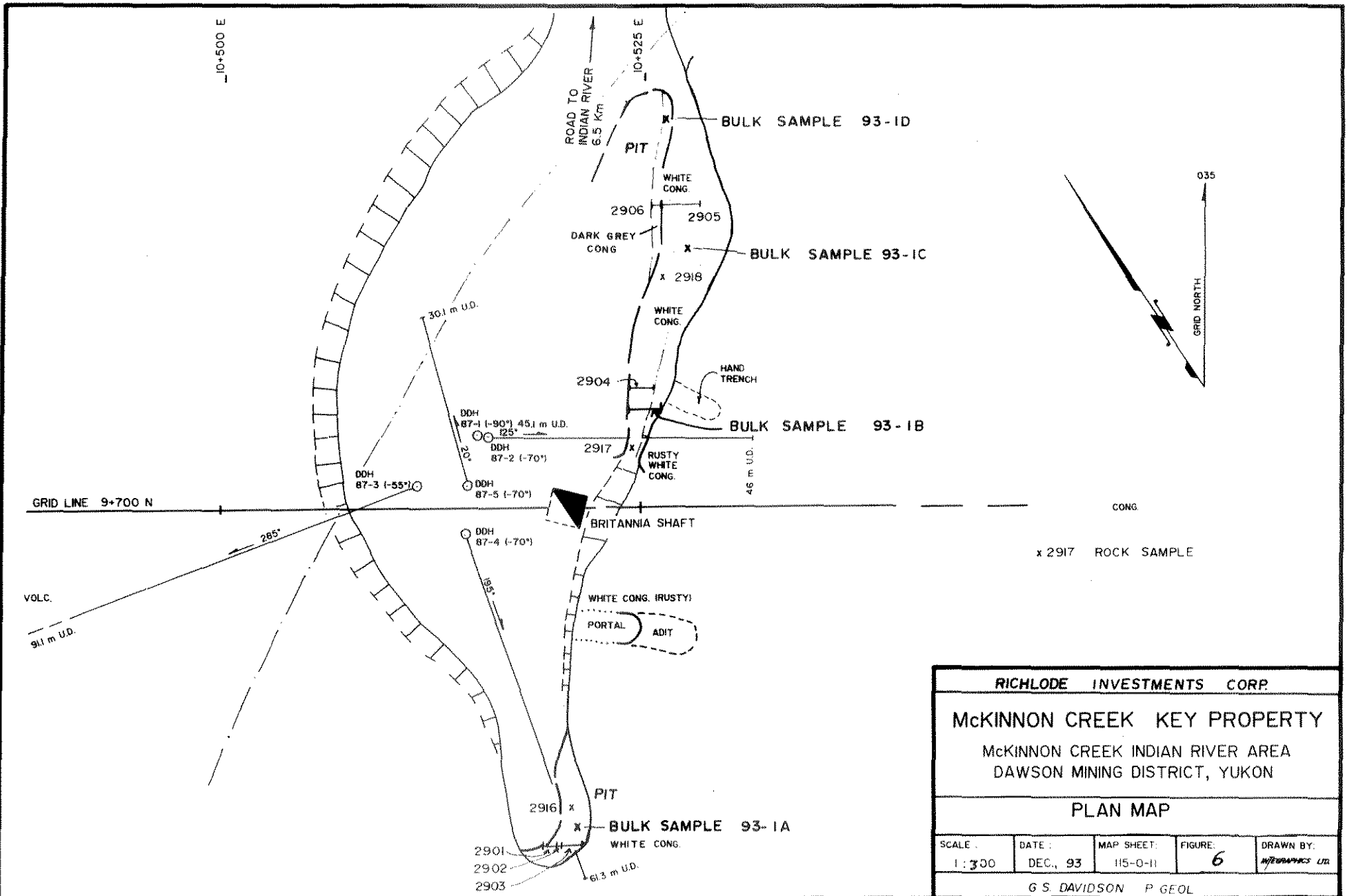


FIELD WORK BY G.W. LOWEY, 1981, 1983.

**RICHLÖDE INVESTMENTS CORP.**  
**McKINNON CREEK KEY PROPERTY**  
McKINNON CREEK, INDIAN RIVER AREA  
DAWSON MINING DISTRICT, YUKON

**GEOLOGY MAP**

SCALE: 1: 40000	DATE:	MAP SHEET: 115-0-11	FIGURE: 4	DRAFTED BY:
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RICHLODE INVESTMENTS CORP.				
McKINNON CREEK KEY PROPERTY				
McKINNON CREEK INDIAN RIVER AREA DAWSON MINING DISTRICT, YUKON				
PLAN MAP				
SCALE 1:300	DATE DEC., 93	MAP SHEET: 115-0-11	FIGURE: 6	DRAWN BY: HYDROPHYSICS LTD.
G S. DAVIDSON P GEOL				

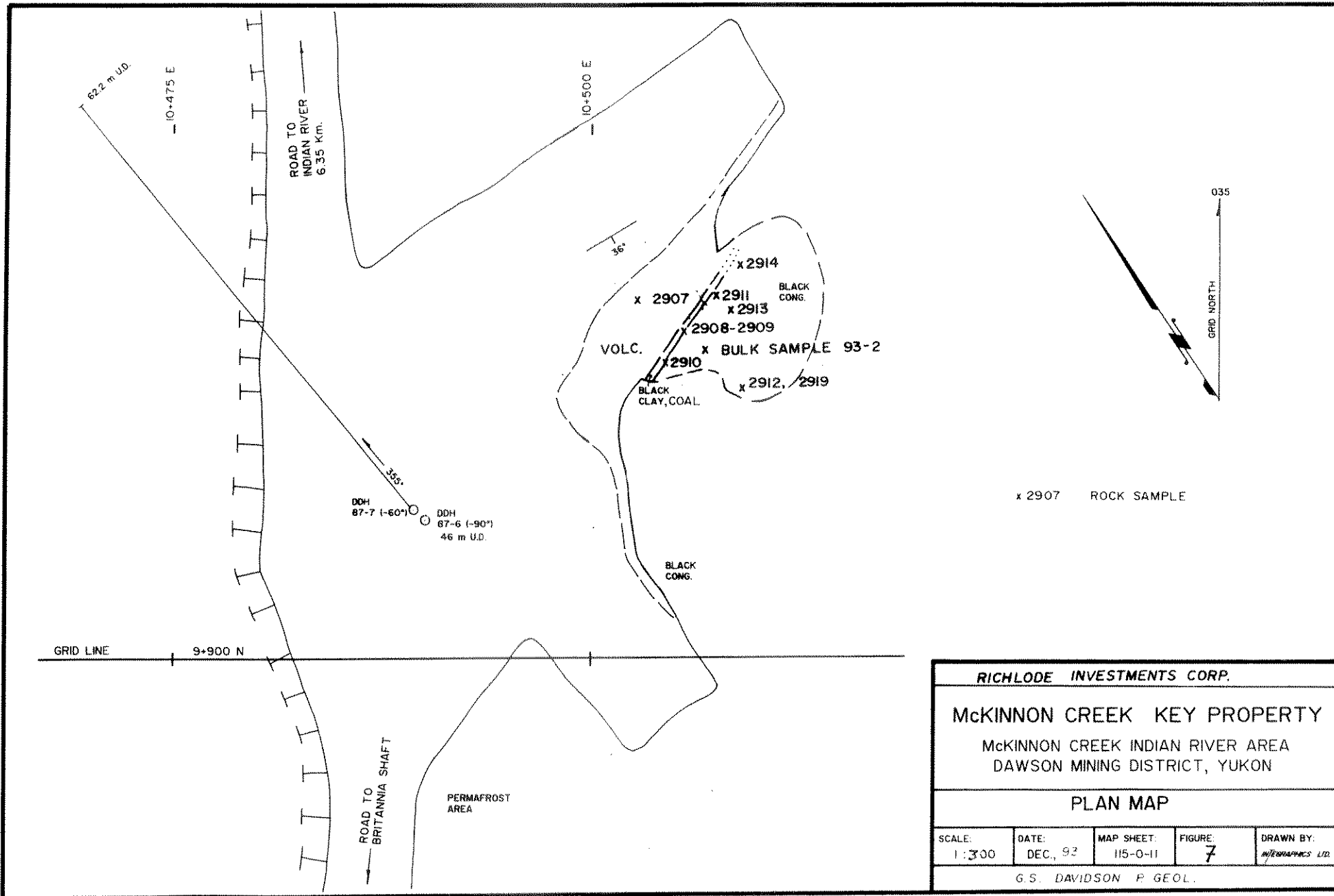
The conglomerate is exposed in old pits found uphill from the Britannia shaft for 100 meters. Steeply dipping fracture surfaces in the conglomerate are rusty weathering and silicified with some slickensides and tourmaline. These fractures lie parallel to McKinnon Creek.

Black conglomerate outcrops 200 meters north of the Britannia Shaft beside a Volcano Resources drill site. One 500 kg sample No. 93-2 was collected of the black conglomerate from a trench wall (see Figure 7). The horizon dips 10 deg northwest and overlies porphyritic andesite. A narrow coal seam occurs at the sediment-volcanic contact. The black conglomerate contains white quartz pebbles averaging 3 cm in diameter in a finely crystalline graphitic matrix.

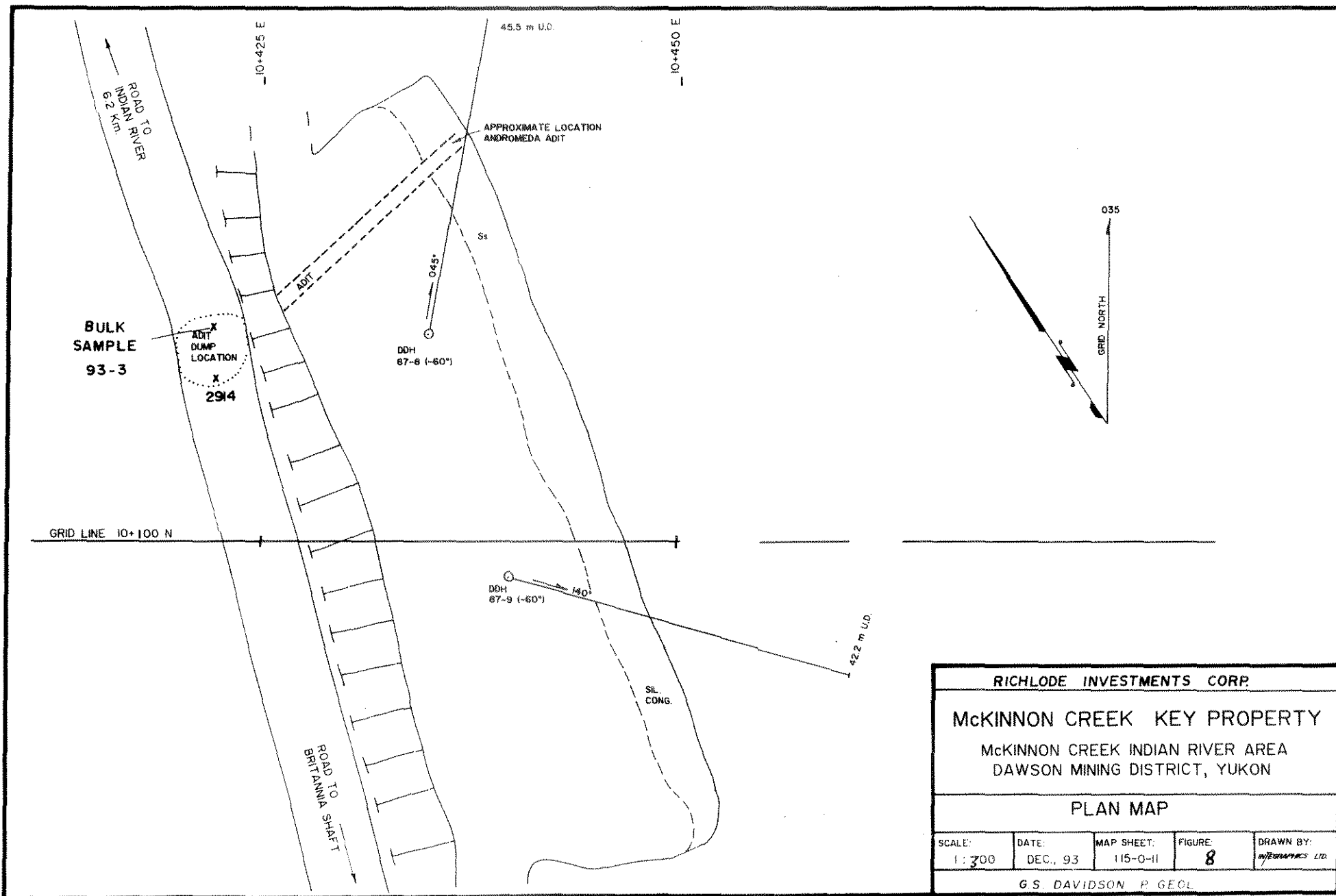
At the Andromeda adit dump sample 93-3 was collected from chunks of sandy conglomerate (see Figure 8).

Sample 93-4 (500kg) was collected from the wall of a large open cut on the northern edge of the MCK claims (see Figure 4). A well consolidated fine grained sandy conglomerate is overlain by a darker manganese stained conglomerate. Both beds were incorporated into the sample.

Gold values for the 500 kg samples are listed in Table 2.



<b>RICHLODE INVESTMENTS CORP.</b>				
<b>McKINNON CREEK KEY PROPERTY</b>				
McKINNON CREEK INDIAN RIVER AREA DAWSON MINING DISTRICT, YUKON				
<b>PLAN MAP</b>				
SCALE: 1:300	DATE: DEC., 93	MAP SHEET: 115-0-11	FIGURE: 7	DRAWN BY: M/ENGINEERS LTD.
G.S. DAVIDSON P. GEOL.				

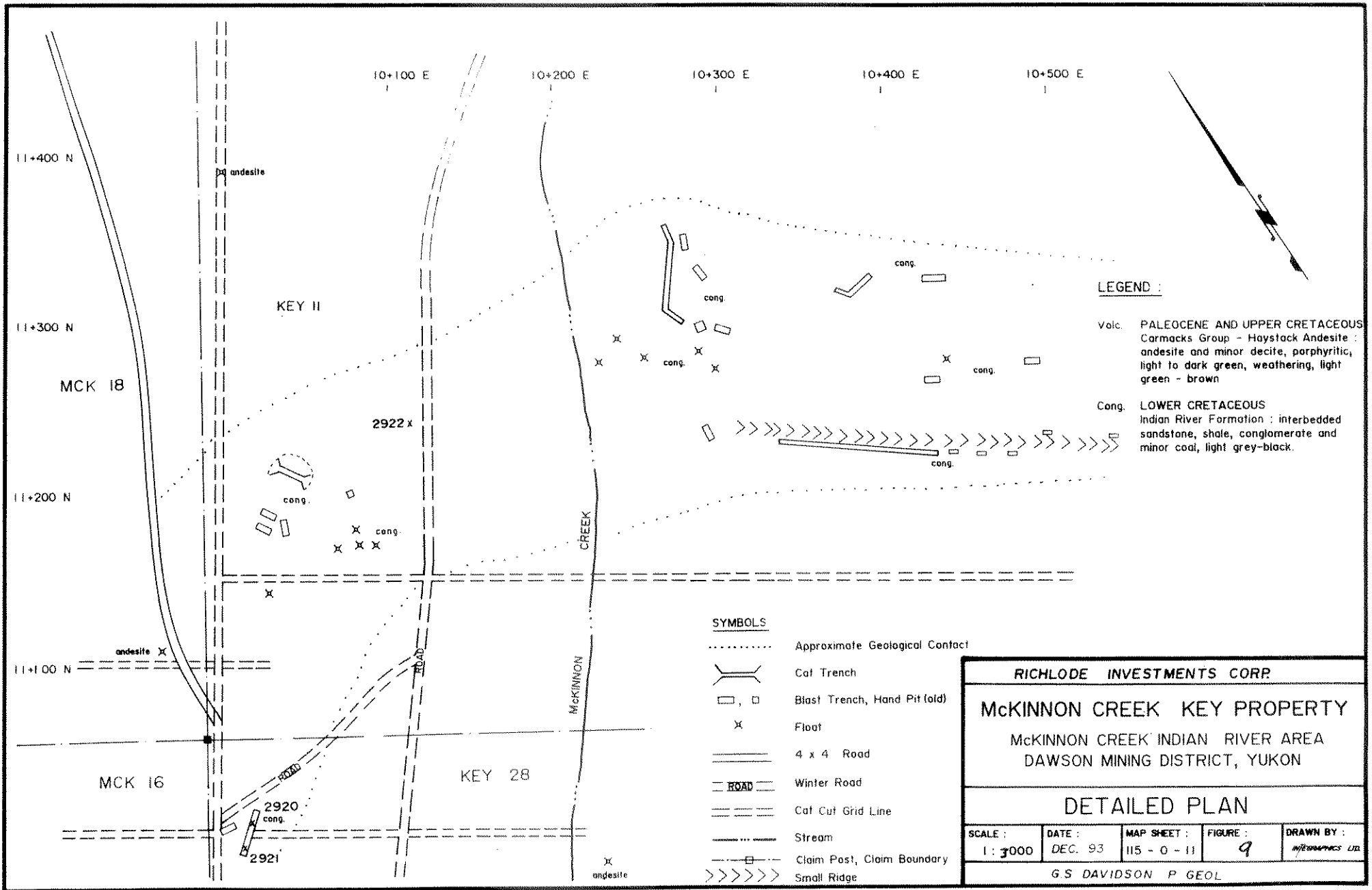


RICHLODE INVESTMENTS CORP.				
McKINNON CREEK KEY PROPERTY				
McKINNON CREEK INDIAN RIVER AREA DAWSON MINING DISTRICT, YUKON				
PLAN MAP				
SCALE: 1:300	DATE: DEC., 93	MAP SHEET: 115-0-II	FIGURE: 8	DRAWN BY: G.S. DAVIDSON
G.S. DAVIDSON P. GEOL.				

TABLE 2-SAMPLE DESCRIPTIONS AND VALUES

Sample Number	Location & Description	Au g/t
93-1A	Britannia Shaft, white conglomerate	0.118
93-1B	Britannia Shaft, light gray conglomerate	0.051
93-1C	Britannia Shaft, dark gray conglomerate	0.106
93-1D	Britannia Shaft, light gray conglomerate	0.043
93-2	Drill site 87-6&7, black conglomerate	0.072
93-3	Andromeda Adit, sandy conglomerate	0.078
93-4	Placer trench, sandy conglomerate	

The writer collected grab samples 2916-2924; Mr. B. Harris collected samples 2901-2915 and the bulk samples 93-1A to 93-4.



**LEGEND :**

- Volc. PALEOCENE AND UPPER CRETACEOUS  
Carmacks Group - Haystack Andesite :  
andesite and minor decite, porphyritic,  
light to dark green, weathering, light  
green - brown
- Cong. LOWER CRETACEOUS  
Indian River Formation : interbedded  
sandstone, shale, conglomerate and  
minor coal, light grey-black.

**SYMBOLS**

- ..... Approximate Geological Contact
- ⎓ Cat Trench
- , □ Blast Trench, Hand Pit (old)
- x Float
- ==== 4 x 4 Road
- ROAD --- Winter Road
- Cat Cut Grid Line
- Stream
- Claim Post, Claim Boundary
- >>>>> Small Ridge

<b>RICHLUDE INVESTMENTS CORP.</b>				
<b>McKINNON CREEK KEY PROPERTY</b>				
McKINNON CREEK INDIAN RIVER AREA DAWSON MINING DISTRICT, YUKON				
<b>DETAILED PLAN</b>				
SCALE :	DATE :	MAP SHEET :	FIGURE :	DRAWN BY :
1 : 3000	DEC. 93	115 - 0 - 11	9	HYDROPHONICS LTD.
G.S. DAVIDSON P. GEOL.				

## ANALYTICAL PROCEDURES

The 500 kg samples were shipped to Process Research Associates Ltd. in Vancouver. Each sample was processed as follows:

1. The sample was crushed to -3/4 inch and then riffled to obtain a representative 50 kg split.
2. Each 50 kg split was ground to 60% minus 200 mesh using a large batch rod mill.
3. The ground sample was fed to a jig to recover any coarse gold. The jig concentrate was panned to reduce the concentrate size and then the remaining concentrate was assayed for gold.
4. The combined pan tails and jig tails were leached with cyanide for 24 hours. The resulting solution and solids were sampled and assayed for gold. The solid samples were obtained by combining three or four random scoops of pulp from different areas of the leach tank.
5. The residue from each test was filtered and dried. The solutions were treated to destroy the cyanide and then discarded.

Grab samples 1901-1924 were analyzed by Northern Analytical Laboratories in Whitehorse. Geochemical analyses using a 30 g pulp of <100 mesh material and total metallics for oversize material was performed on samples 1917-24. Samples 1901-16 were sieved to <100 mesh and a 15 g pulp was analyzed for gold. Results and descriptions of these samples are listed in chart form in Appendix 1.

## DISCUSSION

Grab sample gold values range from <0.002 to 0.007 oz/ton, background to very low values which do not indicate the presence of economic gold mineralization. The bulk samples also produced low to background gold values, sample 93-1A contained some fine visible gold in the pan concentrate portion of the sample and assayed

0.118 g/t (0.004 oz/ton) . The reported "nugget effect" was not clarified by the larger sample size or the elaborate analytical method. Gold has always been very elusive at McKinnon Creek and unfortunately the sampling program has not resolved this dilemma.

## RECOMMENDATIONS

The Britannia Shaft and DDH 87-1 intersected the reported auriferous conglomerate horizons. The Britannia Shaft remains in good shape on the surface and is filled with ice. The shaft should be thawed and sampled. If a gold bearing horizon is detected it should be tested by diamond drilling. Wide diameter drill holes would provide a larger sample for analysis.

Future exploration should also concentrate on sampling the numerous pits and trenches on the property.

The following program is proposed:

Shaft thawing and rehabilitation	10,000
Geological supervision, sampling & prospecting	7,500
Diamond drilling 250 meters	45,000
Sample analysis	6,250
Camp and support	8,500
Transportation and mob.	3,250
Report and assessment	<u>4,500</u>
<b>TOTAL</b>	<b>\$85,000</b>

CERTIFICATE

I, GRAHAM DAVIDSON, of the City of Whitehorse, in the Yukon Territory,  
HEREBY CERTIFY:

1. That I am a consulting geologist and that I worked on the subject property in 1988 & 1993.
2. That I am a graduate of the University of Western Ontario (H. BSc., Geology, 1981).
3. That I am registered as a Professional Geologist by the Association of Professional Engineers, Geologists & Geophysicists of Alberta (No. 42038).
4. That I have been engaged in mineral exploration on a full time basis for eleven years in the Yukon and Northwest Territories, and British Columbia.

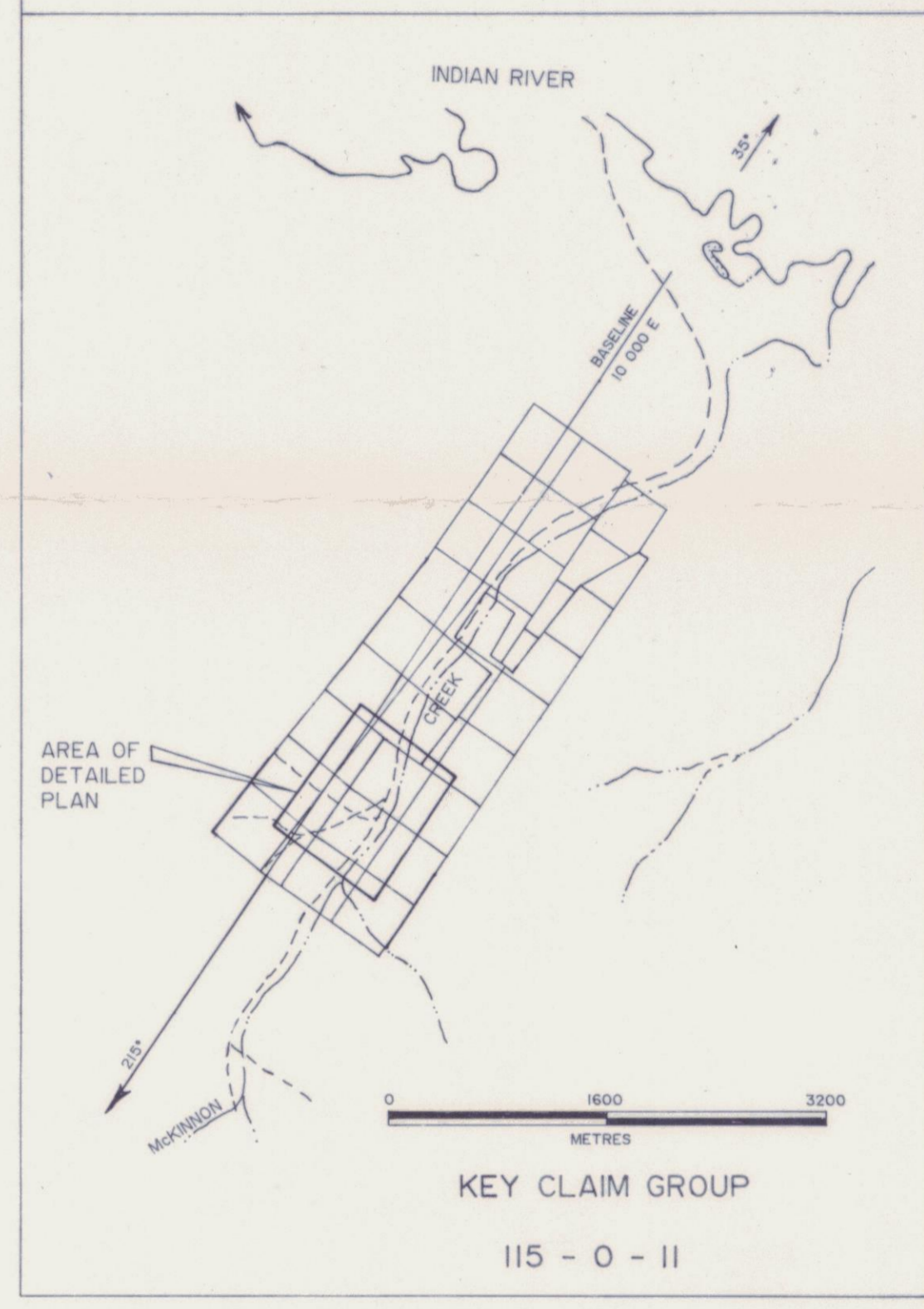
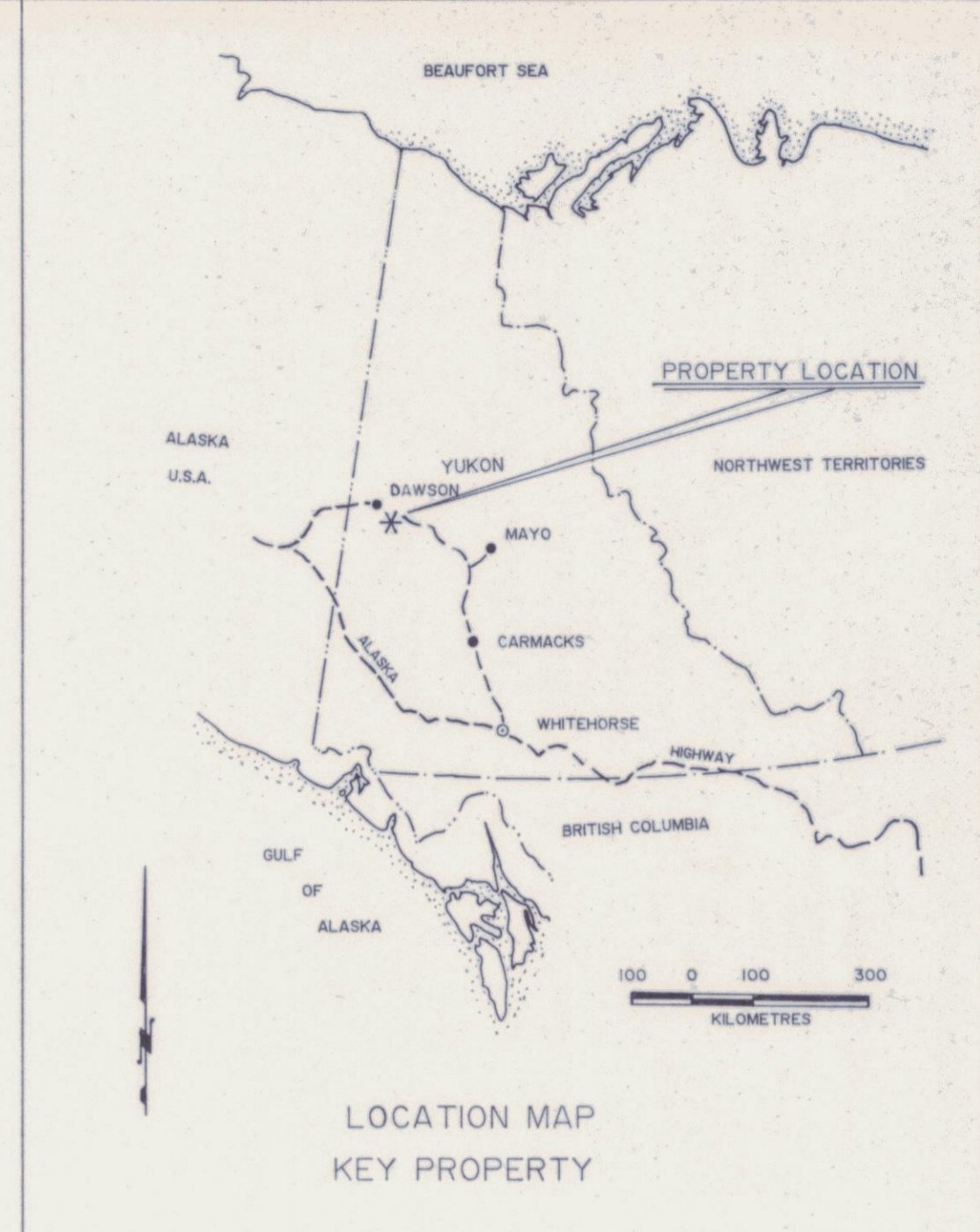
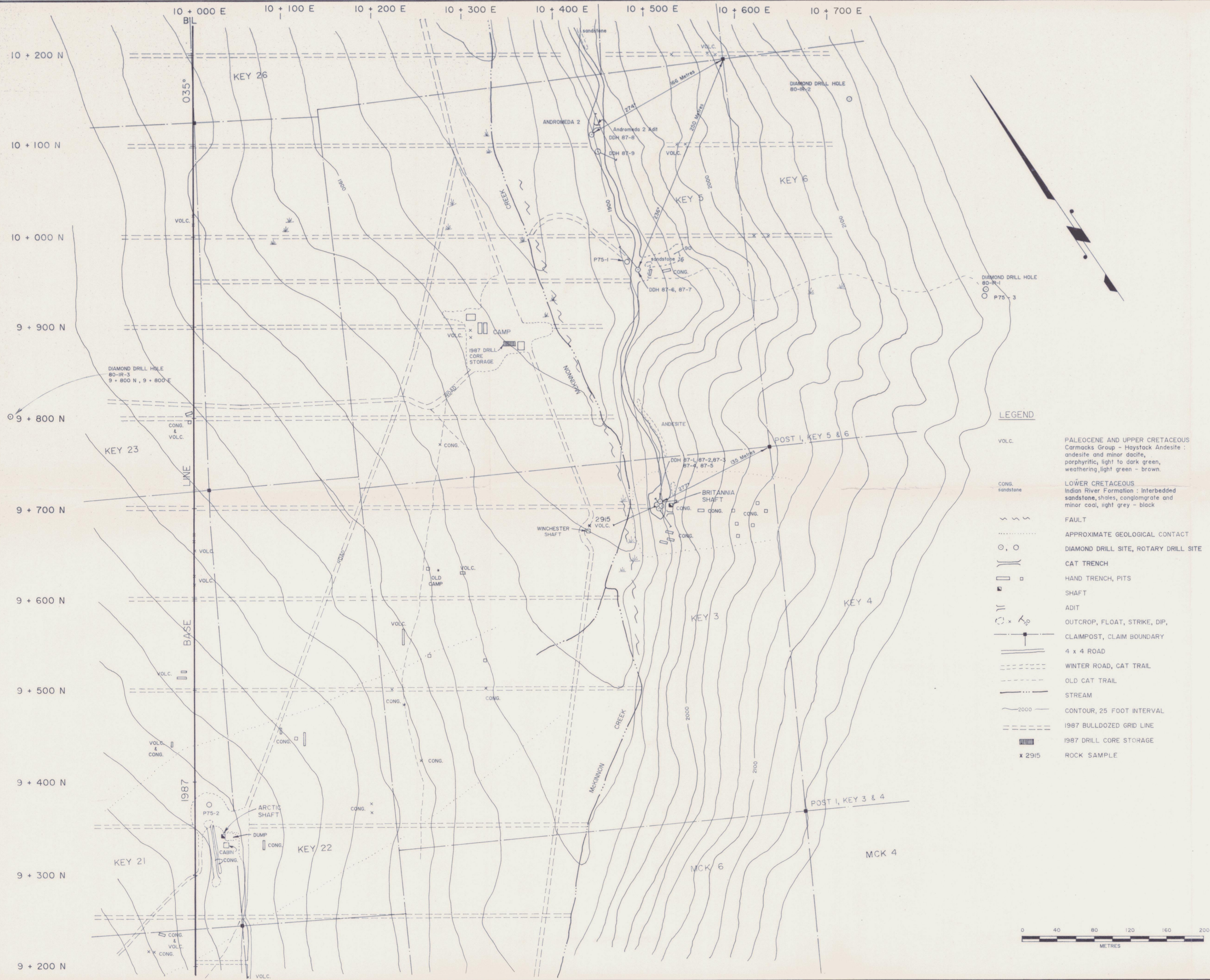
SIGNED at Whitehorse, Yukon this 17th day of January, 1993.

G.S. DAVIDSON, P.Geol.

A handwritten signature in blue ink, appearing to be 'G.S. Davidson', is located below the typed name.

## REFERENCES

- H.S. Bostock, 1936; Carmacks District, Yukon, G.S.C. Mem.189.
- T.D. Garrow, 1993; McKinnon Creek Project, A Report for Richlode Investments Corp.
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- G.W. Lowey, 1984; The Stratigraphy and Sedimentology of Siliclastic Rocks of The West-Central Yukon, PHD Thesis.
- T.R. Tough, 1987; Preliminary Geological Report on the McKinnon Creek Property for Volcano Resources Corp.
- D.H. Waugh, 1994; Fax and conversation regarding reassay of drill core from DDH 87-1 & 2.



- LEGEND**
- VOLC. PALEOCENE AND UPPER CRETACEOUS Carmacks Group - Haystack Andesite : andesite and minor dacite, porphyritic, light to dark green, weathering light green - brown.
  - CONG. sandstone LOWER CRETACEOUS Indian River Formation : Interbedded sandstone, shales, conglomerate and minor coal, light grey - black
  - FAULT
  - APPROXIMATE GEOLOGICAL CONTACT
  - DIAMOND DRILL SITE, ROTARY DRILL SITE
  - CAT TRENCH
  - HAND TRENCH, PITS
  - SHAFT
  - ADIT
  - OUTCROP, FLOAT, STRIKE, DIP, CLAIMPOST, CLAIM BOUNDARY
  - 4 x 4 ROAD
  - WINTER ROAD, CAT TRAIL
  - OLD CAT TRAIL
  - STREAM
  - CONTOUR, 25 FOOT INTERVAL
  - 1987 BULLDOZED GRID LINE
  - 1987 DRILL CORE STORAGE
  - x 2915 ROCK SAMPLE



**093167**  
DWG 501

RICHLODE INVESTMENTS CORP				
McKINNON CREEK KEY PROPERTY				
McKINNON CREEK, INDIAN RIVER AREA DAWSON MINING DISTRICT, YUKON				
<b>DETAILED PLAN</b>				
SCALE : 1 : 2000	DATE : DEC 93	MAP SHEET : 115 - 0 - 11	FIGURE : 5	DRAFTED BY : B.B.

APPENDIX 1 - SAMPLE DESCRIPTIONS AND VALUES

SAMPLE NUMBER	WIDTH (CM)	DESCRIPTION	AU PPB
2901	100	lower strata	6
2902	15	narrow clay layer	59
2903	150	upper strata	7
2904	200	lower strata, white conglomerate	<5
2905	100	gray to black silicified conglomerate	8
2906	60	white to gray, vuggy oxidized conglomerate	85
2907	grab	gray sandstone & shale layer	<5
2908	grab	contact zone, conglomerate-coal-shale	29
2909	grab	fault gouge at above contact	6
2910	50	coal seam	26
2911	grab	conglomerate-coal contact	10
2912	grab	fine grained black conglomerate	6
2913	grab	coarser black conglomerate	<5
2914	grab	brown conglomerate, coarse grained matrix	<5
2915	grab	rhyolite	6

2916	200	white conglomerate	0.007 oz/ton
2917	grab	white conglomerate	<0.002 oz/ton
2918	grab	fractured, stained conglomerate	0.005 oz/ton
2919	grab	black conglomerate	0.007 oz/ton
2920	grab	white conglomerate	0.002 oz/ton
2921	300	white to orange loosely consolidated conglomerate	0.002 oz/ton
2922	float	piece from large boulder of silicified white conglomerate	<0.002 oz/ton
2923	grab	white conglomerate	<0.002 oz/ton
2924	grab	dark gray conglomerate, manganese stained	0.003 oz/ton

APPENDIX 2-CERTIFICATES OF ANALYSIS

**PROCESS RESEARCH ASSOCIATES LTD.**

9145 Shaughnessy Street  
 Vancouver, B.C.  
 Canada V6P 6R9

**FACSIMILE**

TEL. (604) 322-0118

FAX. (604) 322-0181

PROJECT NO: 93-062

DATE: January 17, 1994

NO. OF PAGES (including this page): 5

COMPANY: Richlode Investments Corp.  
 ATTENTION: Mr. Ray Richards, President  
 FAX NO: 731-0255  
 FROM: Bern Klein

Dear Mr. Richards:

**Re: Processing of McKinnon Creek Samples**

Processing of samples 93-1a, 93-1c and 93-1d has been completed. The results of the processing are presented on the attached reports.

All three samples were processed using the same procedure that was used for samples 93-1b, 93-2 and 93-3. Following breaking and crushing the rock, it was crushed and a representative 50 kg sample was riffled. This sample was then ground to approximately 65% -200 mesh. The ground material was fed to a jig to recover any coarse gold that might be present. The jig concentrate was panned and the entire pan concentrate and triplicate cuts of the pan tails were fire assayed. The jig tails were leached with cyanide to attempt to recover the remaining fine gold. The cyanide solution and triplicate cuts of the cyanidation residue were assayed. The data was then combined to calculate the gold assay of the entire sample.

The pan concentrate from sample 93-1a was observed to contain some fine visible gold. The gold grades for the three samples are:

Sample	Au Grade (g/t)
93-1a	0.118
93-1c	0.106
93-1d	0.043

If you have any questions concerning the results, please call me.

Sincerely yours,

**PROCESS RESEARCH ASSOCIATES LTD.**


Bern Klein, Ph.D.  
 Senior Metallurgist

## PROCESSING TEST REPORT

Project no : 93-062

Date : 10-Jan-94

Sample id : 93-1A

## PROCEDURES:

Grind (% -200 mesh)	63.6
Cyanidation solids content (wt. %)	31.1
NaCN (g/L)	2.0
pH (adjusted with lime)	10.5 - 11.0
Leach period (hours)	24

## TEST DATA :

Products	Weight		Volume (L)	Au assay		Au (mg)
	(kg)	(g)		(g/t)	(mg/L)	
Pan conc		0.89				3.636
Pan tails	0.20			0.308		0.061
24h cyanide solution			104		0.010	1.036
Cyanide residue	46.9			0.017		0.803
TOTAL	47.0					5.536

## DISTRIBUTION (%):

Jig concentrate	66.8
24h cyanidation solution	18.7
Cyanidation residue	14.5
TOTAL	100.0

GOLD GRADE (g/t): 0.118

## PROCESSING TEST REPORT

Project no : 93-062

Date : 04-Jan-94

Sample Id : 93-1B

**PROCEDURES:**

Grind (% -200 mesh)	64.0
Cyanidation solids content (%)	23.9
NaCN (g/L)	2.0
pH (adjusted with lime)	10.5 - 11.0
Leach period (hours)	24

**TEST DATA :**

Products	Weight		Volume (L)	Au assay		Au (mg)
	(kg)	(g)		(g/t)	(mg/L)	
Pan conc		1.1				0.010
Pan tails	0.1					0.020
24h cyanide solution			153		0.005	0.764
Cyanide residue	47.9			0.034		1.642
<b>TOTAL</b>	<b>48.1</b>					<b>2.436</b>

**DISTRIBUTION (%) :**

Jig concentrate	1.2
24h cyanidation solution	31.4
Cyanidation residue	67.4
<b>TOTAL</b>	<b>100.0</b>

**GOLD GRADE (g/t):** 0.051

## PROCESSING TEST REPORT

Project no : 93-062

Date : 10-Jan-94

Sample id : 93-1C

## PROCEDURES:

Grind (% -200 mesh)	64.6
Cyanidation solids content (wt. %)	28.7
NaCN (g/L)	2.0
pH (adjusted with lime)	10.5 - 11.0
Leach period (hours)	24

## TEST DATA :

Products	Weight		Volume (L)	Au assay		Au (mg)
	(kg)	(g)		(g/t)	(mg/L)	
Pan conc		0.92				0.623
Pan tails	0.03			1.782		0.053
24h cyanide solution			120		0.030	3.592
Cyanide residue	48.1			0.017		0.824
TOTAL	48.1					5.092

## DISTRIBUTION (%):

Jig concentrate	13.3
24h cyanidation solution	70.5
Cyanidation residue	16.2
TOTAL	100.0

GOLD GRADE (g/t): 0.106

## PROCESSING TEST REPORT

Project no : 93-062

Date : 10-Jan-94

Sample id : 93-1D

## PROCEDURES:

Grind (% -200 mesh)	63.0
Cyanidation solids content (wt. %)	29.8
NaCN (g/L)	2.0
pH (adjusted with lime)	10.5 - 11.0
Leach period (hours)	24

## TEST DATA:

Products	Weight		Volume (L)	Au assay		Au (mg)
	(kg)	(g)		(g/t)	(mg/L)	
Pan conc		1.53				0.087
Pan tails	0.07			0.380		0.026
24h cyanide solution			114		0.010	1.143
Cyanide residue	48.1			0.017		0.824
<b>TOTAL</b>	<b>48.2</b>					<b>2.050</b>

## DISTRIBUTION (%):

Jig concentrate	4.1
24h cyanidation solution	55.8
Cyanidation residue	40.2
<b>TOTAL</b>	<b>100.0</b>

GOLD GRADE (g/t): 0.043

## PROCESSING TEST REPORT

Project no : 93-082

Date : 04-Jan-94

Sample id : 93-2

**PROCEDURES:**

Grind (% -200 mesh)	67.5
Cyanidation solids content (%)	21.4
NaCN (g/L)	2.0
pH (adjusted with lime)	10.5 - 11.0
Leach period (hours)	24

**TEST DATA :**

Products	Weight		Volume (L)	Au assay		Au (mg)
	(kg)	(g)		(g/t)	(mg/L)	
Pan conc		0.78				0.045
Pan tails	0.1					0.007
24h cyanide solution			153		0.010	1.526
Cyanide residue	41.6			0.034		1.425
<b>TOTAL</b>	<b>41.7</b>					<b>3.004</b>

**DISTRIBUTION (%) :**

Jig concentrate	1.7
24h cyanidation solution	50.8
Cyanidation residue	47.5
<b>TOTAL</b>	<b>100.0</b>

**GOLD GRADE (g/t) :** 0.072

## PROCESSING TEST REPORT

Project no : 93-062

Date : 04-Jan-94

Sample id : 93-3

**PROCEDURES:**

Grind (% -200 mesh)	64.6
Cyanidation solids content (wt. %)	19.7
NaCN (g/L)	2.0
pH (adjusted with lime)	10.5 - 11.0
Leach period (hours)	24

**TEST DATA :**

Products	Weight		Volume (L)	Au assay		Au (mg)
	(kg)	(g)		(g/t)	(mg/L)	
Pan conc		0.71				0.104
Pan tails	0.2					0.016
24h cyanide solution			166		0.010	1.663
Cyanide residue	40.8			0.034		1.398
<b>TOTAL</b>	<b>41.0</b>					<b>3.181</b>

**DISTRIBUTION (%):**

Jig concentrate	3.8
24h cyanidation solution	52.3
Cyanidation residue	43.9
<b>TOTAL</b>	<b>100.0</b>

**GOLD GRADE (g/t):** 0.078



9-Nov-93 date

Assay Certificate

Page 1

Chloride Exploration

WO 00392

Sample	(30 gram) Au ppb	-100 Au oz/ton	+100 Au mg	Total Au oz/ton	
93-1 (2916)		0.008	0.009	0.007	- 3.60 u/s
93-2 (2917)		<0.002	0.002	<0.002	
93-3 (2918)		0.004	0.006	0.005	
93-4 (2919)		0.004	0.014	0.007	
93-5 (2920)		<0.002	0.007	0.002	
93-6 (2921) ✓		0.002	0.004	0.002	
93-7 (2922) ✓		<0.002	0.003	<0.002	
93-8 (2923)		<0.002	0.003	<0.002	
93-9 (2924)		0.002	0.007	0.003	

2901	8
2902	59
2903	7
2904	<5
2905	8
2906	85
2907	<5
2908	29
2909	6
2910	26
2911	10
2912	6
2913	<5
2914	<5
2915	5

Analysed by

G.S. DAVIDSON  
CONSULTING GEOLOGIST  
1 Boswell Crec.  
WHITEHORSE, YUKON

To: Dawson Mining Recorder  
P.O. Box 249  
Dawson City Y.T.  
Y0B 1G0

093167

Feb. 9, 1994

Dear Ms. Dejean,

In your letter and our telephone conversation you have requested a more thorough breakdown of costs incurred for the work on the KEY claims. I enclose copies of invoices faxed to me by Richlode Investments Corp. the financier of the work program. The locations of the main work sites, the Britannia Shaft, Andromeda adit and drill site 87-6 & 87-7 are shown on Figure 5 of the report and the following work was performed on the Key claims:

KEY 3 Blasting and trenching with a 955 Caterpillar trackloader along a 50 m long bank on both sides of the Britannia shaft as shown in Figure 6 of the report. Four 500 kg samples; 93-1A, 93-1B, 93-1C & 93-1D and grab samples 2901-2906 and 2916-2918 were collected at this location (Fig. 6). Grab sample 2915 is shown on Figure 5. Approximately 150 cubic meters of material was moved in the blasting and trackloader work.

KEY 5 Blasting and trenching at the edge of the drill pad for DDH 87-6 & 87-7 as shown in Figure 7 of the report. One 500 kg sample; 93-2 and grab samples 2907-2913 and 2919 were collected at this site (Fig. 7). Approximately 75 cubic meters of material was moved in the trenching.

Also on KEY 5, 500 kg sample 93-3 and grab sample 2914 were collected from the Andromeda adit dump as shown in Figure 8 of the report.

One further 500 kg sample (93-4) was collected on the northern edge of the MCK claims (see Figure 4) but was not processed. Grab samples 2923 & 2924 were taken at this site but were not shown on the map.

The other grab samples were collected on KEY 28 (2920, 2921), KEY 11 (2922), shown on Figure 9. Samples 2920 & 2921 were collected from a 40 m long trench excavated by the trackloader. Approximately 100 cubic meters of material was removed.

An estimate of the dollar value of physical work to be applied from each claim is as follows:

KEY 3	Blasting & drilling	4 days at 500/day	\$2,000
	Trackloader	15 hours at 100/hr	1,500
	Bulk sample analysis,	4 samples	3,800
	Grab sample analysis,	10 samples	
	Labour, B. Harris,	4 mandays	600
KEY 5	Blasting & drilling	2 days at 500/day	\$1,000
	Trackloader,	7.5 hours at 100/hr	750
	Bulk sample analysis,	2 samples	1,900
	Grab sample analysis,	9 samples	
	Labour, B. Harris,	2 mandays	300
KEY 28	Trackloader,	2.5 hours at 100/hr	250
	Grab sample analysis,	2 samples	
	Trackloader, roadwork and transporting samples,		
	5 hours		500
		TOTAL	\$12,650

KEY 5 & 6 were prospected on a reconnaissance traverse by the writer while KEY 26 & 32 lie along the access road which was repaired at several locations to allow truck and trackloader access to the work sites. The total listed for trackloader work on Mr. Harris invoice under Cat & Operator is \$3,000

Also a rubber tired backhoe was sent to the property however it failed to make it to the KEY claims as it got stuck on the access road. It did manage to take 500 kg sample 93-4 but this sample was not processed. The bill from SidCo. to Harris & Assoc. was \$5,307.20

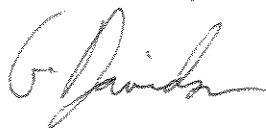
Other associated costs are listed on the Harris & Associates Exploration invoices dated Sept. 27, 1993 (an advance for the work) and November 16, 1993. The total of the two invoices is \$26,113.46

Mr. B. Harris wages for sampling and labour is listed under consulting at \$3,000. T. Morgan & V. Malkovich performed the blasting and trenching; their wages, compressor rental and explosive costs are estimated at \$500/day.

The two invoices from Process Research Associates Ltd. for processing the 500 kg samples total \$7,597.

I hope this letter addresses your concerns. If further information is required please call me at 667-4587.

Thank You,  
G.S. Davidson, P. Geol.



# HARRIS & ASSOCIATES EXPLORATION

20 - 4078 Fourth Ave.,

Whitehorse, Yukon

Y1A 4K8

Phone: (403)668-5717

Fax: (403)667-8784

September 27 1993

RichLode Investment Corp.  
601 - 2695 Granville St.,  
Vancouver B.C. V6H 3H4

## INVOICE (Advance)

RE: McKinnon Creek Property - For Services Rendered as follows.

### Rental Expenses:

Vehicle: Truck	\$ 1,000.00	
		<u>1,000.00</u>

### Supplies and Materials:

Explosives	616.81	
Fuel	194.70	
Food and Grocery Supplies	397.15	
Accommodations	160.00	
		<u>1,370.66</u>

### Advances for Expenses

Geologist	500.00	
Driller/Blaster	500.00	
Hoe Operator	500.00	
		<u>1,500.00</u>

Total	\$ 3,870.66
Amount Advanced	<u>2,000.00</u>

Balance due \$1,870.66

*Plus advance*

*paid  
cheque  
# 0065*

*2000<sup>00</sup>  
3870.66*

# HARRIS & ASSOCIATES EXPLORATION

20 - 4078 Fourth Ave.,  
Whitehorse, Yukon  
Y1A 4K8

Phone: (403)668-5717

Fax: (403)667-6784

November 1, 1991

RichLode Investment Corp  
801 - 2896 Granville St  
Vancouver, B.C. V6H 3H4

## INVOICE

RE: McKinnon Creek Property - For Services Rendered to Date

### Rental Expenses:

Vehicle - Truck	12 days @ 50.00	\$ 600.00
	3600 km @ 25.00	90.00
4 Wheeler	10 days @ 40.00	400.00

### Operating Expenses:

Supplies and Materials	1 216.50
Fuel	387.31
Freight	1 906.65
Food and Grocery Supplies	465.65
Travel & Accommodation	494.85
Mine Recorder Office	453.11

4 829.97

### Contract Services

Geologist	2 612.33
FEL - Backhoe	5 337.20
Cat & Operator	3 000.00
Driller & Blaster	1 500.00

### Consulting Services

3 000.00

14 419.53

Total

22 242.80

Advanced Payments

5 670.68

BALANCE DUE

16 572.14



**PROCESS RESEARCH ASSOCIATES LTD.**

**INVOICE**

9145 Shaughnessy Street  
Vancouver, B.C.  
Canada V6P 6R9

Invoice no : 197  
File : 93-062

Phone : (604) 322-0118  
Fax : (604) 322-0181

Date : 1/13/94

TO: Rushcode Inc. (encl. 1) 1993  
Attn: JAMES G. ...  
...  
V4E 3H4

ATTENTION: Mr. ...

RE: Milkation Creek Crick Crick Determinations

**PROFESSIONAL SERVICES**

Processing samples ... \$1,000.00

Professional Service sub-total \$1,000.00

G.S.T. 7%

... \$70.00

... \$70.00

**TOTAL PAYABLE THIS INVOICE**

\$2,400.00

**PROCESS RESEARCH ASSOCIATES LTD.**

*John ...*  
John ...  
President

...  
...

MINFILE: 1150 054  
PAGE NO: 1 of 2  
UPDATED: 05/03/94

YUKON MINFILE  
STANDARD REPORT  
EXPLORATION AND GEOLOGICAL SERVICES DIVISION, DIAND  
WHITEHORSE

NAME(S): McKinnon  
MINFILE #: 1150 054  
MAJOR COMMODITIES: Au  
MINOR COMMODITIES: -  
TECTONIC ELEMENT: Tertiary sediments

NTS MAP SHEET: 115 O 11  
LATITUDE: 63°41'46"N  
LONGITUDE: 139°09'18"W  
DEPOSIT TYPE: Paleoplacer?  
STATUS: Drilled prospect

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CLAIMS (PREVIOUS AND CURRENT)

BRITANNIA, INDIANA, BLACK BEAR, MAC, BILL, KEY, TRI, MCK

WORK HISTORY

Staked as Britannia group (4279) commencing in Jun/1900 by the McKinnon brothers, who put in a 8 m adit and a 18 m shaft in 1901-02. Other development included the 24 m Winchester shaft, a 30 m shaft and 46 m adit on the Andromeda claim and numerous shallow pits and open cuts. Approximately 200 claims were kept in good standing by various owners until interest waned following the death of the McKinnons in the early 1920's.

Restaked in Oct/63 as Indiana cl (79438) by Canex; in Jul/65 and Sep/66 as Black Bear cl (76645 & 87915) by F. Burkhard; in Jun/68 as Mac cl (Y15385) by Cominco; and in Jul/71 as Kin cl (Y65020) by Yukon Revenue ML. Only mapping and geochemical sampling have been done since 1912.

In May-Jun/73, R. Hrkac tied on 300 Mac, etc cl (Y65992) and transferred them to a private companies, Andac Res L, which mapped in 1974, entered a joint venture in 1975 with Kapvik E L and Action Res L, and added 114 Bill, etc cl (Y90309) in Apr-Aug/75, conducted more mapping and sampling and drilled one hole (70 m) later in the year. Yukon Revenue mapped and sampled in 1972 and 1974 and drilled 4 holes (292.6 m) in 1975. Andac et al flew an aeromag survey in 1976, transferred the claims to McKinnon Rand Res L in early 1977, and optioned them to Dome ML, which enlarged the property and drilled 4 holes (934.2 m) in 1979.

Restaked as Key cl (YA87792) in Oct/25 by G. Harris, who performed geological mapping in 1986. In 1987, the property was optioned by Volcano Res Corp, which explored with mapping, mag and VLF-EM surveys, bulldozer trenching and 9 holes (469.7 m). D. Waugh tied on Key cl (YB23213) to the west in Oct/88, and added more Key (YB30414) and Tri (YB30425) cl in Apr and May/91. B. Harris staked the MCK 1-34 cl (YB45771) in Oct/93. *Richlode Investments performed a sampling & trenching on the KEY and MCK claims. Richlode took seven 1500g bulk samples of conglomerate*

**GEOLOGY** *processed the entire sample to overcome the "nugget effect."*

The original owners obtained many assays in the range 3.4 to 10.3 g/t Au from an Eocene conglomerate that they compared with the South African Rand. The GSC reported that a 1.8 tonne shipment tested at the Government stamp mill about 1901 assayed about 3.4 g/t Au. However, extensive sampling by MacLean in 1914 showed only trace amounts. Some reports have suggested that surface assays may be somewhat higher than average due to supergene enrichment.

Minor amounts of sulphides and siderite are also present in the conglomerate, which consists of well rounded pebbles of white quartz (90%) and micaceous quartzite (10%) averaging 0.4 to 2.5 cm in diameter and up to 8 cm maximum. The matrix ranges from sand to silt sized clastic debris to bluish, fine mica, which is locally silicified and well indurated. Bedding or banding is virtually absent. According to Cominco, the grade ranges from trace to 3.4 g/t Au and the gold is present in an extremely fine state in the matrix.

---

## GEOLOGY (CONTINUED)

Andac's 1975 hole failed to reach the base of the conglomerate but did return subcommercial gold fragments from 1.8-6.0 m, 9.1-39.6 m and 51.8-70.1 m. The Yukon Revenue drilling in 1975 and Dome drilling in 1979 returned only low gold assays.

Mapping by G. Lowey for DIAND in 1983 determined that the conglomerates are Lower Cretaceous in age and that they were deposited in fluvial and deltaic environments. Upper Cretaceous to Paleocene Carmacks Group andesite flows are interbedded with the conglomerates and coeval andesite to dacite sills and dykes cut the sequence. Conglomerates are divisible into two sequences: a lower lithic unit and an upper quartzose unit. Only the upper unit contains gold. Historically, this deposit was regarded as a paleoplacer but Lowey suggested an alternative epigenetic epithermal origin, citing the extensive silicification and clay alteration. Assays of the conglomerate show the presence of typical epithermal trace metals such as Ag, As, Ba, Hg, Pb and Sb although the values are uniformly low.

The 1986-87 work returned disappointing results with only 6 of 47 chip samples returning greater than 20 ppb Au with a maximum of 87 ppb Au.

## REFERENCES

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DAWSON DAILY NEWS, 3 Mar/19.

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GEOLOGICAL SURVEY OF CANADA Paper 69-55, p. 22.

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MACLEAN, T.A., 1914. Lode Mining in Yukon. Mines Branch Publication 222, p. 62-71.

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MINERAL INDUSTRY REPORT 1976, p. 138-139.

*Richlode Investment Corp., Feb/94 Assessment Report #093167 by G.S. Davidson*  
YUKON EXPLORATION 1985-86, p. 288-289.

YUKON EXPLORATION AND GEOLOGY 1983, p. 69-78.

*needs  
approval*

*copy 1*

MINFILE: 1150 054  
PAGE NO: 1 of 2  
UPDATED: 07/19/94

**YUKON MINFILE  
STANDARD REPORT  
EXPLORATION AND GEOLOGICAL SERVICES DIVISION, DIAND  
WHITEHORSE**

NAME(S): McKinnon  
MINFILE #: 1150 054  
MAJOR COMMODITIES: Au  
MINOR COMMODITIES: -  
TECTONIC ELEMENT: Tertiary sediments

NTS MAP SHEET: 115 O 11  
LATITUDE: 63°41'46"N  
LONGITUDE: 139°09'18"W  
DEPOSIT TYPE: Paleoplacer?  
STATUS: Drilled prospect

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**CLAIMS (PREVIOUS AND CURRENT)**

BRITANNIA, INDIANA, BLACK BEAR, MAC, BILL, KEY, TRI, MCK

**WORK HISTORY**

Staked as Britannia group (4279) commencing in Jun/1900 by the McKinnon brothers, who put in a 8 m adit and a 18 m shaft in 1901-02. Other development included the 24 m Winchester shaft, a 30 m shaft and 46 m adit on the Andromeda claim and numerous shallow pits and open cuts. Approximately 200 claims were kept in good standing by various owners until interest waned following the death of the McKinnons in the early 1920's.

Restaked in Oct/63 as Indiana cl (79438) by Canex; in Jul/65 and Sep/66 as Black Bear cl (76645 & 87915) by F. Burkhard; in Jun/68 as Mac cl (Y15385) by Cominco; and in Jul/71 as Kin cl (Y65020) by Yukon Revenue ML. Only mapping and geochemical sampling have been done since 1912.

In May-Jun/73, R. Hrkac tied on 300 Mac, etc cl (Y65992) and transferred them to a private companies, Andac Res L, which mapped in 1974, entered a joint venture in 1975 with Kapvik E L and Action Res L, and added 114 Bill, etc cl (Y90309) in Apr-Aug/75, conducted more mapping and sampling and drilled one hole (70 m) later in the year. Yukon Revenue mapped and sampled in 1972 and 1974 and drilled 4 holes (292.6 m) in 1975. Andac et al flew an aeromag survey in 1976, transferred the claims to McKinnon Rand Res L in early 1977, and optioned them to Dome ML, which enlarged the property and drilled 4 holes (934.2 m) in 1979.

Restaked as Key cl (YA87792) in Oct/85 by G. Harris, who performed geological mapping in 1986. In 1987, the property was optioned by Volcano Res Corp, which explored with mapping, mag and VLF-EM surveys, bulldozer trenching and 9 holes (469.7 m). D. Waugh tied on Key cl (YB23213) to the west in Oct/88, and added more Key (YB30414) and Tri (YB30425) cl in Apr and May/91. B. Harris staked the MCK 1-34 cl (YB45771) in Oct/93.

Under an option agreement with D. Waugh, Richlode Investments Corp. performed a geochemical bulk sampling and trenching program on the Key and MCK claims in 1993.

**GEOLOGY**

The original owners obtained many assays in the range 3.4 to 10.3 g/t Au from an Eocene conglomerate that they compared with the South African Rand. The GSC reported that a 1.8 tonne shipment tested at the Government stamp mill about 1901 assayed about 3.4 g/t Au. However, extensive sampling by MacLean in 1914 showed only trace amounts. Some reports have suggested that surface assays may be somewhat higher than average due to supergene enrichment.

Minor amounts of sulphides and siderite are also present in the conglomerate, which consists of well rounded pebbles of white quartz (90%) and micaceous quartzite (10%) averaging 0.4 to 2.5 cm in diameter and up to 8 cm maximum. The matrix ranges from sand to silt sized clastic debris to bluish, fine mica, which is locally silicified and well indurated. Bedding or banding is virtually absent. According to Cominco, the grade ranges from trace to 3.4 g/t Au and the gold is present in an extremely fine state in the matrix.

## GEOLOGY (CONTINUED)

Andac's 1975 hole failed to reach the base of the conglomerate but did return subcommercial gold fragments from 1.8-6.0 m, 9.1-39.6 m and 51.8-70.1 m. The Yukon Revenue drilling in 1975 and Dome drilling in 1979 returned only low gold assays.

Mapping by G. Lowey for DIAND in 1983 determined that the conglomerates are Lower Cretaceous in age and that they were deposited in fluvial and deltaic environments. Upper Cretaceous to Paleocene Carmacks Group andesite flows are interbedded with the conglomerates and coeval andesite to dacite sills and dykes cut the sequence. Conglomerates are divisible into two sequences: a lower lithic unit and an upper quartzose unit. Only the upper unit contains gold. Historically, this deposit was regarded as a paleoplacer but Lowey suggested an alternative epigenetic epithermal origin, citing the extensive silicification and clay alteration. Assays of the conglomerate show the presence of typical epithermal trace metals such as Ag,As,Ba,Hg,Pb and Sb although the values are uniformly low.

The 1986-87 work returned disappointing results with only 6 of 47 chip samples returning greater than 20 ppb Au with a maximum of 87 ppb Au.

Of the seven 500 kg bulk samples collected and processed in 1993, most returned low gold values. The highest assay obtained was 0.118 g/t Au.

## REFERENCES

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