WHITEHORSE M.D.

MAP No. 105 D 3, 6

ASSESSMENT REPORT ☐
N. M. E. A. P. ☐
CONFIDENTIAL ☐
OPEN FILE ☐

TYPE OF WORK: GEOLOGICAL, GEOCHEMICAL

REPORT FILED UNDER	G. MACDONALD AND ASSOCIATES LTD. DOCUMENT NO. 091775
DATE PERFORMED	SEPTEMBER-OCTOBER 1985 DATE FILED: 28 JANUARY 1986
LOCATION – LAT.	60°15'N AREA: WHEATON RIVER
LONG.	135°08'W
CLAIM NO.	CHARLIE 1-16; YA82409-YA82424
VALUE $ 1,600.00	
WORK DONE BY	G.S. DAVIDSON
WORK DONE FOR	G. MACDONALD AND ASSOCIATES LTD.

REMARKS

156- CHARLIE

091775

The property is underlain by Cretaceous granodiorite which is cut by rhyolitic to dacitic flows and dykes. Remnant felsic pyroclastics cap the sequence.

Eight rock samples and 32 soil samples were collected and analyzed for Au,Ag,Pb and Cu. No significant anomalies were detected.

yox 85 p. 101 ✓

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ASSESSMENT REPORT

PROSPECTING AND GEOCHEMICAL SAMPLING
CHARLIE 1-16 CLAIMS (YA 82409 - YA 82424)
Wheaton River Area
N.T.S. 105-D-3/D-6
Latitude 60°15' N, Longitude 135°08' W

Whitehorse Mining District

G. S. Davidson, P.Geol.

January 23, 1986

091775

This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work in the amount of $ 1,600.00

5 March 1986

Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

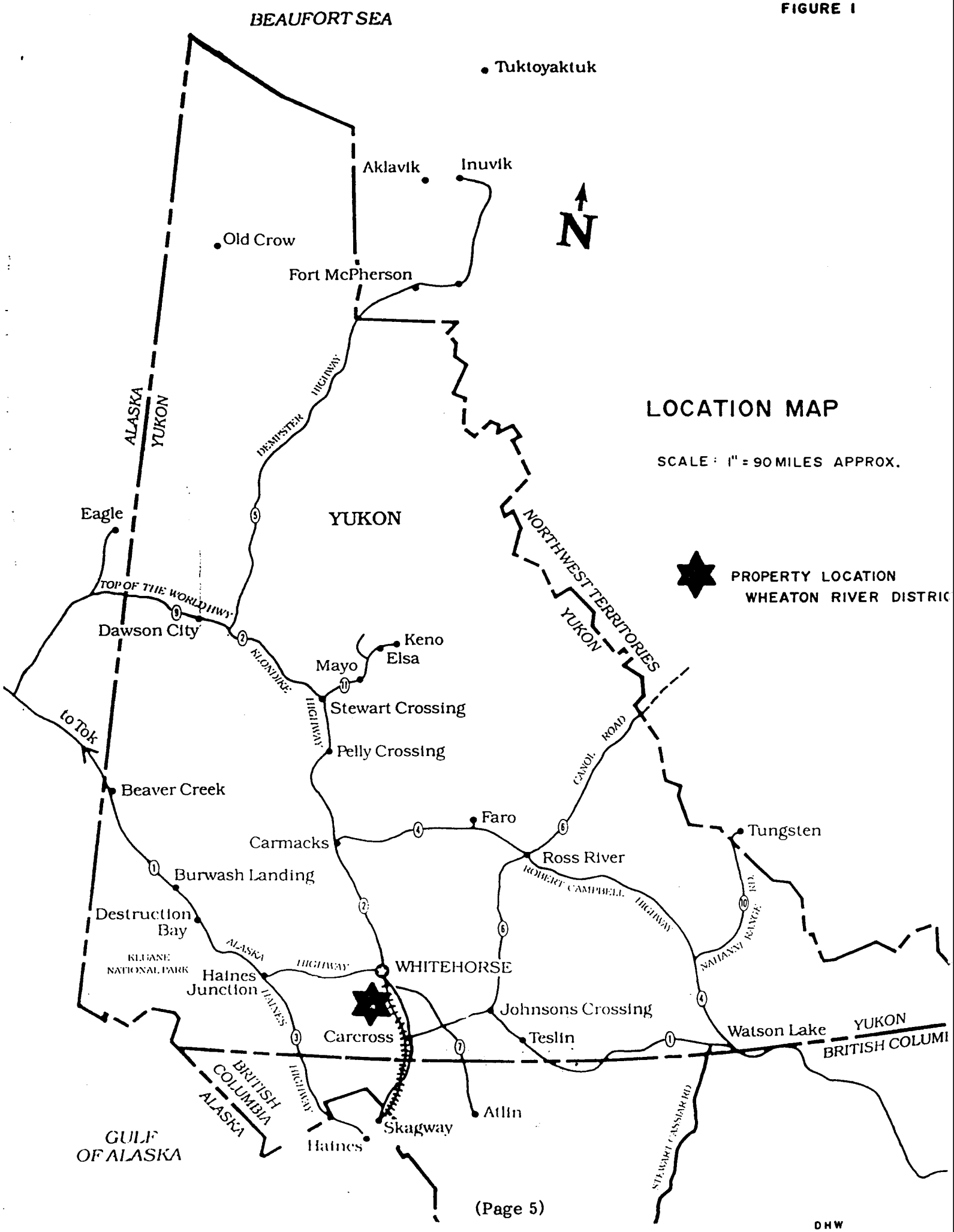
TABLE OF CONTENTS

List of Figures

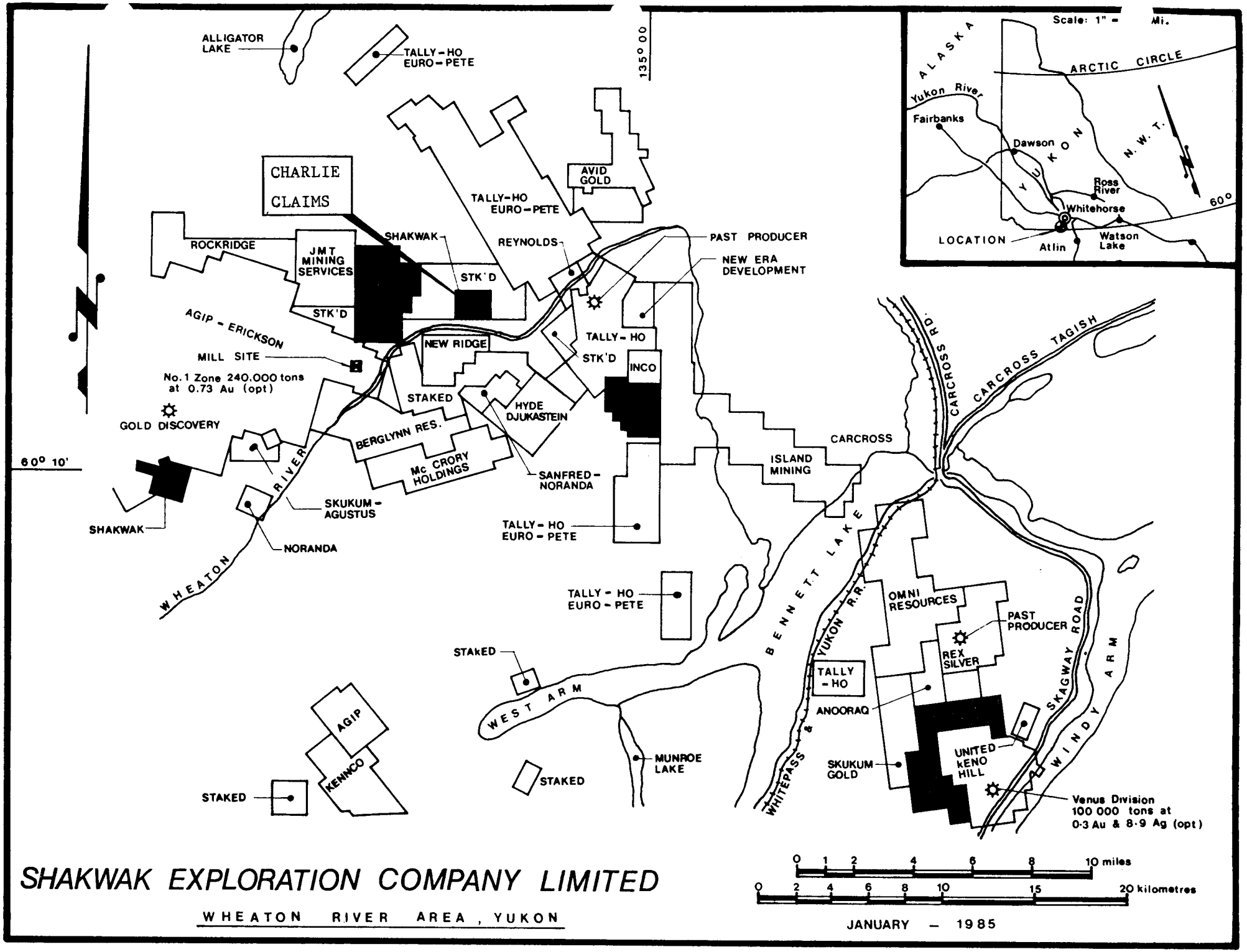
List of Tables

List of Appendices

FIGURE I


BEAUFORT SEA
Tuktoyaktuk
Aklavik
Inuvik
N
Old Crow
Fort McPherson
LOCATION MAP
SCALE: 1" = 90 MILES APPROX.
ALASKA
YUKON
DEMPSTER HIGHWAY
YUKON
NORTHWEST TERRITORIES
YUKON
PROPERTY LOCATION
WHEATON RIVER DISTRIC
Eagle
TOP OF THE WORLD HWY.
Dawson City
KLONDIKE HIGHWAY
Keno
Elsa
Mayo
Stewart Crossing
Pelly Crossing
to Tok
Beaver Creek
CANOL ROAD
Faro
Tungsten
Carmacks
Ross River
Burwash Landing
ROBERT CAMPBELL HIGHWAY
Destruction Bay
KLUANE NATIONAL PARK
ALASKA HIGHWAY
WHITEHORSE
Haines Junction
HAINES
Johnsons Crossing
Carcross
Teslin
Watson Lake
YUKON
BRITISH COLUMI
BRITISH COLUMBIA
ALASKA
HIGHWAY
Atlin
Skagway
Haines
GULF OF ALASKA
STEWART CASSIAR RD

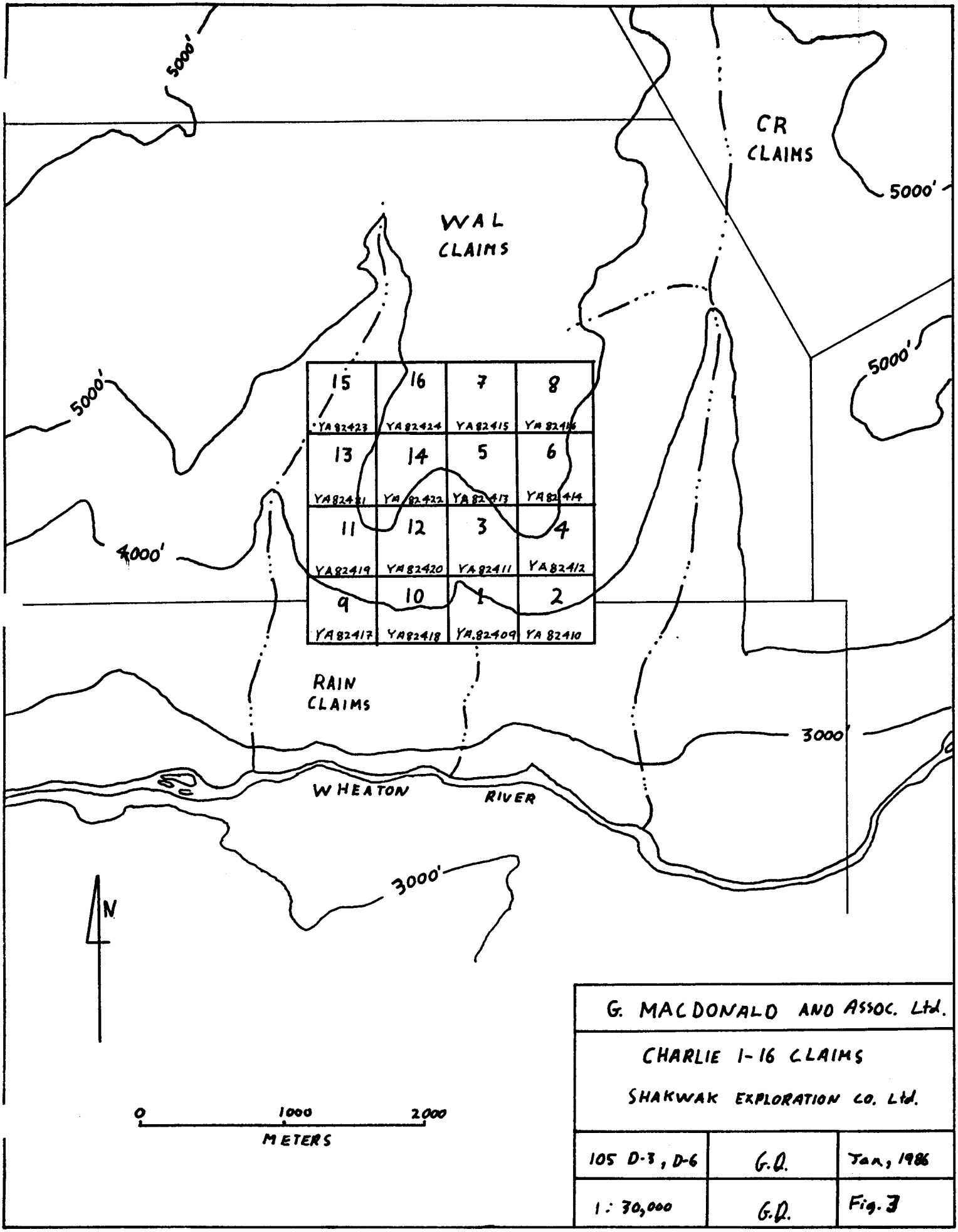
DHW



SHAKWAK EXPLORATION COMPANY LIMITED

WHEATON RIVER AREA, YUKON

JANUARY – 1985



G. MACDONALD AND ASSOC. Ltd.		
CHARLIE 1-16 CLAIMS SHAKWAK EXPLORATION CO. Ltd.		
105 D-3, D-6	G.D.	Jan, 1986
1 : 30,000	G.D.	Fig. 3

INTRODUCTION

The CHARLIE 1-16 mineral claims lie in the active Wheaton River district, where exploration and development expenditures are expected to exceed seven million dollars for 1985. This report describes the physical and geological settings and the results of a brief exploration program conducted on the claims by G. Macdonald and Associates Ltd. on behalf of the property owner, Shakwak Exploration Co. Ltd.

PROPERTY

The CHARLIE 1-16 claims were staked on the 10th of June 1984 and were recorded on the 14th of June 1984 in the office of the Whitehorse District Mining Recorder under grant numbers YA 82409 - YA 82424, in accordance with the Yukon Quartz Mining Act. Figure 3 summarizes the property composition.

LOCATION AND ACCESS

The CHARLIE claims are located north of the Wheaton River and just west of Dawson Charlie Creek, covering 324 hectares and centered at latitude 60°15' N, longitude 135°09' W on N.T.S. Map Sheets 105-D-3/D-6 (Figure 1). The property is situated 60 km south-southwest of Whitehorse and is accessible from the all-season Wheaton River gravel road which is currently being upgraded by the Yukon Government Highways Department and Mount Skukum Gold Mines Ltd. as part of the development program at the Mount Skukum gold mine. The CHARLIE property is located 10 km east of the Mount Skukum mill site which is expected to begin operations in February 1986.

The WAL and RAIN claims, owned by Walhalla Exploration Ltd. and Northern Natural Resources Ltd. respectively, surround the CHARLIE property.

In the summer of 1985, helicopter charter services were available from the Wheaton River airstrip to afford access to the northern portion of the claim group.

PHYSIOGRAPHY AND CLIMATE

The CHARLIE claims cover a relatively flat upland area and the steep south-facing valley wall of the Wheaton River. Maximum elevations exceed 5500 feet (1675 meters), while the Wheaton Valley floor lies at about 3000 feet (915 meters). Upland plateaus are barren and windswept places supporting dwarf grasses and moss.

Steep slopes overlooking the Wheaton River are rocky with extensive talus fans and cliffs. Buck brush and alder thickets are common in gullies and below 4000 feet on the CHARLIE claims.

The climate of the southwestern Yukon is fairly severe especially at higher elevations. In winter, temperatures dip to -50°C but generally average -20°C and in summer readings above 20°C are rare. Precipitation averages 40 cm per year.

Mineral exploration is feasible from early June to late September; however, high winds and snow squalls occasionally disrupt exploration activities even in mid-July.

HISTORY

The first known prospectors to enter the Wheaton Valley were Corwin and Richter, who located claims over antimony-silver showings on Carbon and Chieftain Hills in 1893. The Klondike Gold Rush starting in 1896 brought a great influx of people to the Yukon. Some individuals travelled into the Wheaton valley and discovered mineralization on Schnabel Creek. In 1906 free gold and gold bearing telluride minerals were discovered by Hodnett and Stagar on Gold Hill. The ensuing staking rush resulted in 700 new claims, located on Gold Hill, Mineral Hill, Carbon Hill, Chieftain Hill, Mt. Stevens and Mt. Wheaton. In the following 15 years, prospectors discovered numerous gold and silver bearing quartz veins, some showing limited production of high grade ore. The most successful operation was on Tally Ho Mountain from 1918-1921, when a reported 10,000 tons of hand-sorted high grade ore was shipped to Tacoma for processing.

From the mid-1920's to the late 1960's, little or no exploration of significance took place. By 1970, many of the old showings were restaked as an increase in the value of base and precious metals rekindled the interest of prospectors and mining companies.

In 1981, AGIP Canada Ltd. discovered a gold-bearing vein structure on Mt. Skukum and proceeded to define a commercially viable orebody consisting of 165,000 tons grading 0.73 oz gold and 0.63 oz silver per ton by 1984. Mount Skukum Gold Mines Ltd., through a joint venture agreement with Agip, has developed the orebody and constructed a 300 ton per day mill. Production is expected to commence in February 1986.

The discovery of gold on Mt. Skukum has intensified exploration activities in the Wheaton district. Presently, large claim blocks are held by Omni Resources Inc., Tally Ho Exploration Ltd., Shakwak Exploration Co. Ltd., Island Mining and Exploration Co. Ltd., Kerr Addison Mines Ltd., Berglynn Resources Inc., Carmac Resources Ltd. and Noranda Exploration.

Prior to the exploration program conducted on the CHARLIE claims in 1985, no known investigations have taken place on the property.

REGIONAL GEOLOGY

The Wheaton River district overlies the boundary between folded volcanic and sedimentary rocks of the Mesozoic and Paleozoic Whitehorse Trough and granitic rocks of the Cretaceous Coast Plutonic Complex. Early Tertiary Mount Skukum Group volcanic rocks intrude and overlie older rocks. Rhyolite and andesite porphyry dykes of Tertiary age cut all other rocks.

The geology of the Wheaton River region was initially mapped by D. R. Cairnes of the G.S.C., published in Memoir # 31 (1912) and later by J. Wheeler, published in Memoir # 312 (1961). A reinterpretation of the regional geology formed part of the metallogenic map published as Open File E.G.S. 1979-6 (G. W. Morrison) by the Department of Indian Affairs and Northern Development.

Table of Formations

QUATERNARY	Alluvium; glacial and fluvial deposits
QUATERNARY(?) MILES CANYON VOLCANICS	Basalt; minor pyroclastic rocks
TERTIARY SKUKUM GROUP (Trp)	Basalt, andesite, rhyolite flows, breccias and tuffs; dykes and sills
MID CRETACEOUS COAST PLUTONIC COMPLEX (Kgd)	Medium to coarse grained homogeneous biotite-hornblende granodiorite and quartz monzonite
JURASSIC/CRETACEOUS HUTSHI GROUP (?)	Andesite, rhyolite flows and pyroclastic equivalents
JURASSIC TANTALUS GROUP	Mainly conglomerate
LOWER JURASSIC LABERGE GROUP	Greywacke, arkose, quartzite, siltstone, argillite and conglomerate
TRIASSIC LEWES RIVER GROUP	Andesite, basalt flows and pyroclastic equivalents; limestone; minor rhyolite flows
LOWER PALEOZOIC "YUKON GROUP"	Metamorphic terrain; quartz-biotite schist, micaceous quartzite, gneiss, crystalline limestone and amphibolite

Mesozoic and Paleozoic sedimentary and volcanic rocks are deformed and generally metamorphosed to at least lower green schist facies. These units trend north to northwest and are internally complex, often featuring three or more rock types over 10 meter wide exposures.

Major fault structures are associated with early Tertiary volcanic complexes at Montana Mountain, Mount Macauley and Mount Skukum but older structures may also be

present. Skukum Group volcanic rocks are equivalent to the Sloko Group of northern British Columbia and the Mount Nansen Group of central Yukon. Late stage features of Skukum Group volcanism include andesite, dacite and rhyolite dykes, granite porphyry stocks and dykes, and quartz or quartz carbonate veining with significant precious metal mineralization.

GEOLOGY AND EXPLORATION - 1985

A preliminary evaluation of the CHARLIE claims was carried out by a two-man exploration crew consisting of G. Davidson (geologist) and J. Atkinson (field assistant) of Whitehorse, Yukon, supervised by R. Robertson of G. Macdonald and Associates Ltd. The crew was based at a tent and trailer camp located east of the property. A Trans Canada Jetranger helicopter based in Whitehorse was used for access to the claims.

On the property, Cretaceous Coast Range granodiorite is intruded by north and northeasterly trending Tertiary rhyolite and dacite flows and dykes. Medium to coarse grained porphyritic granodiorite outcrops on the steepest slopes between protruding cliffs of reddish weathering rhyollite and dacite. Remnants of an overlying layer of felsic pyroclastic rock occur on the south facing valley wall of the Wheaton River.

No significant occurrences of mineralization were identified during the preliminary exploration program. Eight rock samples were collected and analyzed for gold and silver by Bondar-Clegg and Co. Ltd. (Vancouver). Gold analyses use a 30 g portion of pulverized rock and fire assay preconcentration (i.e. preparation of the dore bead) followed by digestion of the bead in acid and analysis by atomic absorption spectrophotometry. Silver analyses are by standard atomic absorption techniques. Sample locations are shown with geology on Figure 4. Sample 5108-1 is moderately anomalous in gold and warrants further investigation. Sample descriptions and values are summarized in the following table.

Table 2

Rock Sample Descriptions and Analyses

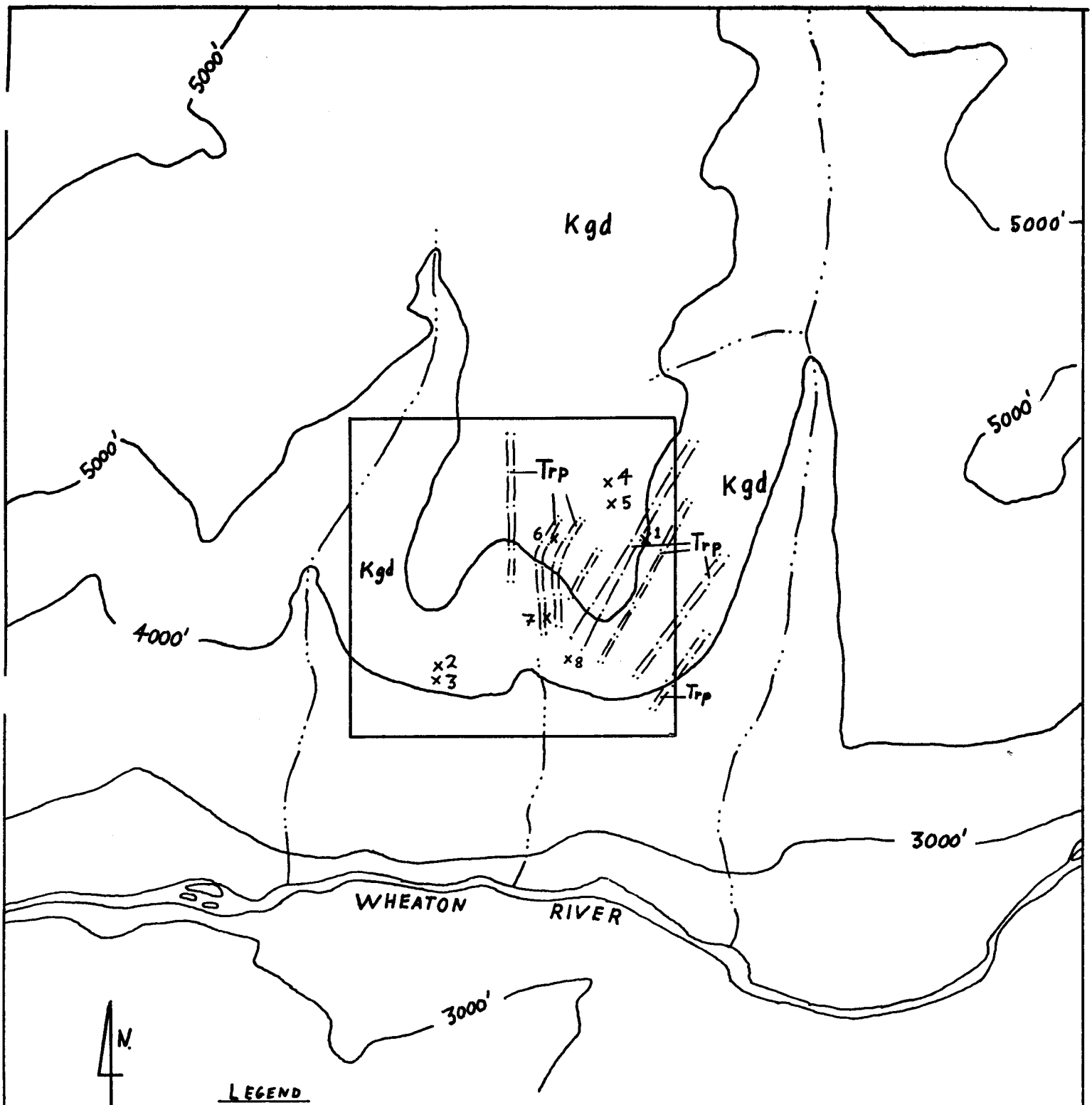
Sample #	Au (ppb)	Ag (ppm)	Description
5108-1	660	0.2	Quartz breccia, vuggy fragments of white quartz in a rhyolitic matrix
5108-2	5	0.2	Granitic rock with coarse feldspar phenocrysts in a medium grained matrix
5108-3	5	0.2	Rusty weathering, banded rhyolite to dacite
5108-4	5	0.2	Banded cream rhyolite, some fine pyrite cubes

5108-5	5	0.2	Porphyritic granodiorite, coarse quartz and feldspar phenocrysts
5108-6	20	0.2	Fine grained white quartz, float sample, rusty weathering
5108-7	5	1.2	White quartz, float, vuggy, medium grained pyrite cubes
5108-8	5	0.2	Porphyritic rhyolite, quartz eyes and some feldspar phenocrysts

A total of 31 soil samples were collected at 50 meter spacing along one contour line located at the break in slope between the upland area on the property and the steep southerly and easterly facing valley wall of the Wheaton River.

Sample locations and values are shown on Figure 5.

These samples were analyzed for gold, copper, lead and silver by Bondar-Clegg and Co. Ltd. Copper, lead and silver were analyzed by standard atomic absorption techniques. Gold was analyzed as described above except that a 10 g portion of the minus 80 mesh fraction was used. A weak gold anomaly (35 ppb) and coincident lead anomaly is present at one sample site.



LEGEND

Trp Tertiary - Rhyolite dikes

Kgd Cretaceous - Granodiorite

0 1000 2000

METERS

G. MACDONALD AND ASSOC. LTD.		
CHARLIE 1-16 CLAIMS SHAKWAK EXPLORATION CO. LTD. GEOLOGY AND ROCK SAMPLE PLAN		
105 D-3, D-6	G.D.	Jan., 1986
1:30,000		Fig. 4

CONCLUSIONS AND RECOMMENDATIONS

Although the exploration program conducted in September 1985 was of a very preliminary nature, certain favourable conclusions can be made about the CHARLIE claims.

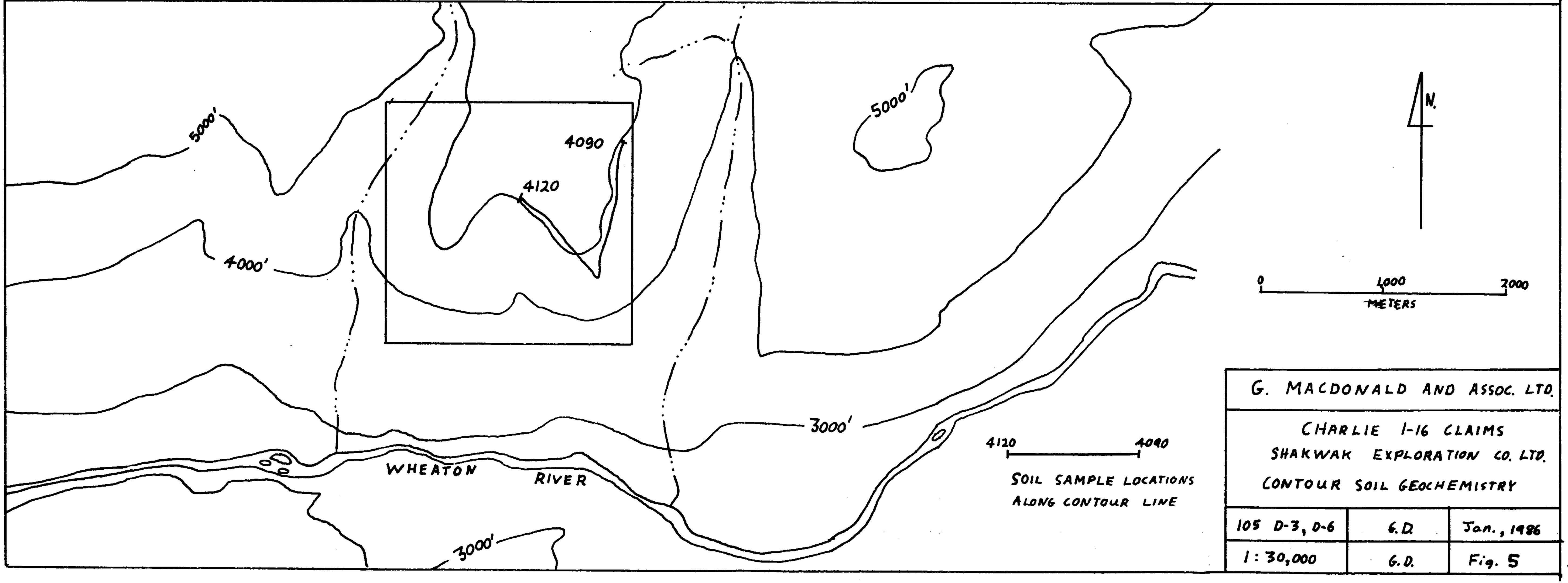
Rhyolite and dacitic rocks of the Skukum Group, known to be associated with precious metal mineralization elsewhere in the district, occur in abundance on the property. One sample of quartz-rhyolite breccia was moderately anomalous in gold, suggesting that significant gold-bearing quartz veins may occur in the Tertiary rhyolite dykes. To date, soil sampling has outlined a very weak anomaly; however, sampling was at an interval of 50 meters which is very wide in relation to the likely target (narrow vein structures of a meter or two in width).

An exploration program involving grid and contour soil sampling, geological mapping and VLF-EM surveys should be conducted around rhyolite dykes and detailed soil and rock sampling should test the area around the anomalous rock sample collected in 1985. Follow-up trenching should examine any targets delineated by the recommended program.

	Au (ppb)	Ag (ppm)	Pb (ppm)	Cu (ppm)
4120	<5	0.2	27	8
	<5	<0.2	23	6
	<5	<0.2	16	4
	<5	<0.2	15	4
	5	<0.2	17	7
	<5	<0.2	25	9
	<5	<0.2	13	7
	<5	<0.2	40	8
	<5	0.6	59	13
	<5	<0.2	71	6
	<5	0.4	30	16
	<5	0.2	43	7
	35	0.2	102	10
	<5	<0.2	35	7
	<5	<0.2	58	11
	<5	0.2	36	8
	<5	<0.2	66	10
	<5	<0.2	22	10
	<5	<0.2	30	7
	<5	<0.2	44	14
	<5	<0.2	24	5
	<5	0.2	19	6
	<5	<0.2	21	7
	<5	<0.2	18	12
	<5	<0.2	17	7
	<5	<0.2	16	8
	<5	<0.2	10	7
	<5	<0.2	32	8
	<5	<0.2	13	7
	<5	<0.2	21	9
4090	<5	<0.2	12	6

CONTOUR SOIL SAMPLING

SAMPLE INTERVAL - 50 METERS



G. MACDONALD AND ASSOC. LTD.

CHARLIE 1-16 CLAIMS
SHAKWAK EXPLORATION CO. LTD.
CONTOUR SOIL GEOCHEMISTRY

105 D-3, D-6	G.D.	Jan., 1986
1:30,000	G.D.	Fig. 5

APPENDIX I

STATEMENT OF COSTS

Period: September 28 - October 5, 1985

Geochemical Analyses:	
8 rock samples (Au, AG)	$ 106.00
31 soil samples (Au, Ag, Pb, Cu)	361.15
Camp Supplies, Food, Equipment, Expediting:	100.00
Transportation:	
Truck: 2 days @ $50/day	100.00
Gas	35.00
Helicopter: 4 hours @ $550/hr	220.00
Personnel:	
R. Robertson: 1 day @ $400/day	400.00
G. Davidson: 3.5 days @ $262.50/day	918.75
J. Atkinson: 1.5 days @ $135/day	303.75
Miscellaneous:	
Report preparation, secretarial, drafting	300.00
TOTAL:	$2,844.65

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APPENDIX II

STATEMENT OF QUALIFICATIONS

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

THAT I am a geologist employed by G. Macdonald and Associates Limited AND THAT I caused to be performed the work described in this report;

THAT I am a graduate of the University of Western Ontario (H.B.Sc., Geology, 1981);

THAT I am registered as a Professional Geologist by the Association of Professional Engineers, Geologists and Geophysicists of Alberta (No. 42308);

THAT I have been engaged in mineral exploration on a full-time and part-time basis for seven years, of which five have been in the Yukon and Northwest Territories.

SIGNED at Whitehorse, Yukon Territory, this 28 day of January, 1986.

G. S. Davidson, P.Geol.