# REPORT ON THE 1995 PROSPECTING, MAPPING, AND SAMPLING PROGRAM ON THE CAM CLAIMS

Whitehorse Mining District, Yukon (May 3-5, July 11-15, 1995)

YMIP # 95-060

- Claims: Cam 1-4 (YB55287-290) Cam 5-28 (YB57327-350) Cam 29-42 (YB57519-532)
- Location: 1. 70 km SE of Whitehorse, Yukon 2. NTS 105 C/5 3. Latitude: 60° 25'N Longitude: 133° 55'W

# For: CAMDEN EXPLORATION 55 Boswell Crescent Whitehorse, Yukon Y1A 2E9

By: R. Allan Doherty, P.Geo Aurum Geological Consultants Inc. 205-100 Main Street P.O. Box 4367 Whitehorse, Yukon Y1A 3T5

March 11, 1996

Aurum Geological Consultants Inc.

### SUMMARY

The Cam 1-42 claims are located north of Jakes Corner on the Alaska Highway. The claims were staked to cover an airborne geophysical anomaly and surface geology postulated to fit a deposit model for copper-nickel mineralization associated with gabbro, dunite and peridotite intrusions.

The property is underlain by Cache Creek terrane Mississippian to Jurassic ophiolitic basalts, gabbro, dunite and pyroxenites, and fine grained clastic and calcareous sedimentary rocks representing Stikine terrane rocks that are found in horst blocks within the Cache Creek Terrane. The Cache Creek terrane is a large thrust sheet that overlies rocks of Stikinia.

Regional airborne geophysical surveys funded by the Canada/Yukon Mineral Development were completed over the area in the spring of 1994.

Prospecting, mapping and geochemical sampling was completed over the Cam claims in 1995, failed to locate any significant bedrock mineralization. Soil geochemical surveys over the most obvious target area returned weakly anomalous Ni.

The geophysical conductor and Mag high remain to be investigated.

# TABLE OF CONTENTS

	page
	1
	# 1
LOCATION AND ACCESS	1
PHYSIOGRAPHY CLIMATE AND VEGETATION	1
PROPERTY	3
HISTORY	3
GEOLOGY	5
Regional Geology	5
Property Geology	5
Deposit model	5
1995 EXPLORATION	8
Introduction	8
Results	8
CONCLUSIONS AND RECOMMENDATIONS	10
REFERÈNCES	11
STATEMENT OF QUALIFICATIONS (RAD)	12
STATEMENT OF COSTS	13
List of Figures	
Figure 1: Property Location Map (1:6,000,000)	2
Figure 2: Claim Map (1:30,000)	4
Figure 3: Property Geology (1:30,000)	6
Figure 4: Grid Soil Geochemistry - Au, Ni, Cu (1:5,000)	9
List of Tables	
Table I: Claim Status	3
List of Appendices	
Appendix A - Analytical Reports	

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## INTRODUCTION

This report was prepared at the request of Camden Exploration. Its purpose is to summarize the results of the 1995 prospecting and exploration work completed on the Cam 1-42 Claims, and to satisfy the reporting and work requirements under the Yukon Quartz Mining Act.

Exploration work consisted of mobilizing a small camp to the Cam Claims and completing prospecting, mapping, griding, and sampling between May 3-5 and June 11-15, 1995. Work was completed by personnel from Aurum Geological Consultants Inc., and by Dennis Ouellette and Jim McFaul.

## LOCATION AND ACCESS

The Cam Claims are located 8 km north of the Alaska highway, directly behind Jakes Corner. The claims are 70 km directly southeast of Whitehorse and can be accessed using old logging roads and trappers trails that lead up Judas Creek from the Alaska Highway. Alternately access by helicopter from Whitehorse is available, (Figures 1). The centre of the CAM 1-42 claim block is located at approximately 60°25'N latitude and 133°55'W longitude, within the 1:50,000 Squanga Lake map area, NTS 105 C/5.

#### PHYSIOGRAPHY, CLIMATE AND VEGETATION

The property is located within the Teslin Plateau physiographic region. The area is characterized by moderate relief. Elevations range from 3500 to 5000 feet. Vegetation consists of White Spruce, Lodgepole Pine, and mature Aspen trees with very sparse willow growing in the lower creeks. Outcrop occurs on about 5% of the property and is exposed on ridges cliffs in steeper areas. Talus and felsenmeer are common on the steep ridges and mountainsides and mostly reflect underlying bedrock lithologies. The valley floors are covered by a thick mantle of glacial till which masks important bedrock geology contacts.

The climate in the area is characterized by cool winters and warm summers. Rainfall and thundershowers are common in the summer months. Average annual precipitation is 40 cm. The exploration season extends from May to late September.



## PROPERTY

The CAM 1-4 claims were first staked on October 10, 1994 and recorded at the Whitehorse Mining Recorders Office on October 26, 1994. The claims were staked in accordance with the Yukon Quartz Mining Act, (Figure 2). Subsequent to locating the CAM 1-4 claims, additional claims comprising the Cam 5-42 were staked on November 20, 1994 and registered on November 30, 1994. The mining recorder would not grant the Cam 29-42 or explain the refusal to grant the claims in writing. It was decided by the claim owners to withdraw the claim applications and re-stake the Cam 29-42. This was completed on May 3, 1995. Current claim status is shown on Figure 2. and are shown on Yukon Quartz Claim Sheet 105 C/5. Claim data for those claims granted is listed in Table 1.

CLAIM NAME	GRANT NUMBER	NUMBER OF CLAIMS	EXPIRY DATE	MINING DISTRICT
CAM 1-4	YB55287-290	4	October 26,1997 *	Whitehorse
CAM 5-28	YB7327-350	24	November 30, 1997	Whitehorse
CAM 29-42	YB57519-532	14	May 16, 1998	Whitehorse

#### Table I -CLAIM STATUS

\* subject to approval of 1995 assessment work

## HISTORY

There is no record of prior claim staking in this area. Eight kilometres southwest of the Cam claims in an area of similar geology, Minfile occurrence 105C178 reports anomalous gold in soils. To the southeast on a prominent ridge parallel to the Alaska highway a number of occurrences of asbestos fibre have reported exploration activity intermittently since the 1950's.

The Cam claims were staked to cover Ni in stream silt anomalies reported in RGS Open File 1217 associated with Cache Creek terrane ultramatic rocks intruding limestones. It was believed that the area was a good target for Sichuan type Ni-Cu sulphide mineralization.



## GEOLOGY

### **Regional Geology**

The regional geology of the area consists of the Carboniferous to Permian Cache Creek terrane rocks of oceanic affinity (Wheeler and McFeely, 1991) that form a large regional thrust over Stikine terrane which comprises the Triassic and Jurassic Lewes River and Laberge Group limestone, siltstone, greywacke and conglomerate. Prominent northeast trending faults expose horsts of Stikine Terrane rocks within the overlying Cache Creek terrane rocks. The regional geology of this area of the Yukon has been mapped by Mulligan (1963) and more recently by Gordey and Stevens (1994) both at 1:250,000 scale. An open file geology report of the area surrounding the Cam claims (Hunt, Hart and Gordey, 1995) provides a good review of the regional geology and metallogeny.

#### Property Geology

The Cam Claims cover horst blocks of Stikine terrane Upper Triassic Lewes River group limestone, chert and siltstone in fault contact with Carboniferous to Permian Cache Creek terrane andesite and basaltic andesites intruded by a small (< 1 km), Carboniferous to Triassic ultramafic stock of peridotite and serpentinized peridotite composition. Dunite and harzburgite lithologies are reported at the Squanga occurrence (Minfile # 105C012) 15 km east of the Cam Claims.

An airborne geophysical survey was flown over this portion of the Marsh Lake belt in the early spring of 1994, a report with maps was produced (Smith, 1994), as well as two interpretations, (Power, 1995; Hunt, Hart and Gordey, 1995). Figure 3 shows the claim outline, property geology, stream silt anomalies and location of Em conductors and the soil grid.

#### **Deposit Model**

The property was staked and explored using a deposit model for Sichuan type Ni-Cu in ultramafic rocks. Permo-Triassic rift zone related ultramafic rocks consisting of dunite, peridotite and pyroxenite host immiscible sulphide liquids that produce Ni-Cu sulphide mineralization often localized along the base of the ultramafic intrusion through the process of crystal fractionation and cumulation in the intrusive magma. In the Sichuan model important characteristics of these deposit types are as follows:

1. deposits are spatially related to terrane boundaries and deep seated fault structures.

2. host rocks are small ultramafic intrusions of pyroxenite, peridotite and harzburgite composition, often with lower MgO/<FeO> and higher in TiO2 than found

in Alpine ultramafics.

3. Vertical and lateral zonation is common in the intrusions and the Ni-Cu sulphides are found in the lower part of the intrusions.

4. An external source of sulphur (ie. fetid limestones) may contribute sulphur to the system.



### **1995 EXPLORATION**

#### Introduction

Between May 3-5 and July 10-16, twenty man days were spent prospecting, mapping and sampling the Cam 1-42 Claims. Most work was concentrated on the centre of the claim block over areas believed to be underlain by ultramafic rock.

A small 3400 m grid was chained and cut and soil sampled. A total of 24 soil samples and 4 rock samples were collected and analyzed for gold plus 31 element ICP. Gold assays were provided by Northern Analytical Laboratories Ltd and ICP results from International Plasma Laboratory Ltd. The geochemical results are found in Appendix A.

#### Results

The areas of interest from both geological and geophysical evidence are mostly overburden covered. The soil grid was located over this area and parallel to one EM conductor. Figure 4 shows the grid location and Au, Ni, and Cu soil analytical results. The average for 24 soil samples on the grid is 226 ppm Ni and 26 ppm Cu. The highest gold value was 25 ppb. Elements associated with listwanite style gold mineralization such as, Pb, and Sb are not elevated.



## CONCLUSIONS AND RECOMMENDATIONS

Mapping, prospecting and sampling over the Cam Claims has confirmed that the area has geological, geophysical and geochemical characteristics that may be permissive for the development of Ni-Cu mineralization associated with ultramafic intrusions.

The area of most interest from geological and geophysical evidence is mostly overburden covered but still produced weak Ni-Cu soil anomalies.

It is recommended that further exploration be completed over the Cam Claims. The soil sample grid should be extended to cover the two northernmost EM geophysical anomalies and areas underlain by ultramafic intrusions. All creeks draining the property should be silt sampled and bulk sampled to derive heavy mineral concentrates.

The northern portion of the claims should be further prospected to locate areas of ultramatic intrusions and contact zones.

The Sichuan style Ni-Cu deposits are hosted in ultramatic intrusions that are similar to Alpine ultramatics but have relatively lower MgO/<FeO>. Whole rock analyses of ultramatic lithologies could provide useful information.

**Respectfully Submitted** 

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R. Allan Doherty, P.Geo. Aurum Geological Consultants Inc.

March 11, 1996

## REFERENCES

- DIAND 1993: Yukon Minfile, WP 5.1 Version, 15 Feb/93, Department of Indian and Northern Affairs, Exploration and Geological Services Division, Whitehorse.,
- Gordey, S.P. and Stevens, R.A., 1994: Preliminary interpretation of bedrock geology of the Teslin area (105C), southern Yukon: Geological Survey of Canada, Open File 2886.
- Hunt, J.A., Hart, C.J.R., and Gordey, S.P., 1995: Interpretive Geology of the Jakes Corner Geophysical survey, 1:50,000 scale map. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs, Open File 1995-7 (G)
- Power, M.A., 1995: Notes to Prospectors Jakes Corner Dighem Survey Interpretation, Exploration and Geological Services Division, Yukon. Indian and Northern Affairs, Open File 1995-12 (G).
- Smith, P.A., 1994: DIGHEM V Survey for Yukon prospectors' Association, Jakes Corner Project, Yukon Territory, Exploration and Geological Services Division, Indian and Northern Affairs, Open File 1994-10 (G).
- Wheeler, J.O., and McFeely, P. (comp), 1991: Tectonic Assemblage Map of the Canadian Cordillera and adjacent parts of the United States of America; Geological Survey of Canada, Map 1712A.

### STATEMENT OF QUALIFICATIONS (RAD)

I, R. Allan Doherty, hereby certify that:

1. I am a geologist with AURUM GEOLOGICAL CONSULTANTS INC., 205 - 100 Main Street, P.O. Box 4367, Whitehorse, Yukon, Y1A 3T5.

2. I am a graduate of the University of New Brunswick, with a degree in geology (Hons. B.Sc., 1977) and that I attended graduate school at Memorial University of Newfoundland, 1978-80. I have been involved in geological mapping and mineral exploration continuously since then.

3. I am a member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia, Registration No. 20564.

4. I am the author of this report based on information collected during property work completed between May 3-5, and July 11-15, 1995 on the Cam Claims.

March 11, 1996

R. Allan Doherty, P.Geo. FESSION PROVINCE OF R. A. DOHERTY CIEN

# **STATEMENT OF COSTS**

1995 Assessment Work Valuation; Cam 1-42 Claims, 105 C/5 Work completed between May 3-5, July 11-15, 1995	
Personal	
Allan Doherty, P.Geo.,	
P.O. Box 4367, Whitehorse, Yukon, Y1A 3T5	
(May 4, 1995), 1.0 days @ \$350.00	\$350.00
Dennis Ouellette, Geologist	
55 Boswell crescent, Whitehorse, Yukon, Y1A 4T2	
(May 3-5, July 10-16, 1995), 10 days @ \$350.00	\$3,500.00
Brian Sauer, Prospector,	
P.O. 43028, RPO Sapperton, B.C., V3L 5P7	
(May 4, 1995), 1 days @ \$300/day	\$300.00
Jim McFaull, Geologist,	
5 - 100 Lewes Blvd., Whitehorse, Yukon, Y1A 4T2	
(July 11-15, 1995), 5 days @ \$350/day	\$1,750.00
Conrad Fox, Assistant	
P.O Box 4367, Whitehorse, Yukon, Y1A 315	A4 400 00
(May 2-5, July 11-15,1995), 7 days @ \$200/day	\$1,400.00
Expenses - Camp and Transportation	
Helicopter 206 B. 5.1 hrs @ \$834/hr:	\$1.570.00
Truck rental: 7 days @ \$100/day	\$700.00
ATV Rental: 5 days @ \$75.00	\$375.00
Camp & Food: 30 man days @ \$60/man day	\$1,260.00
Gasoline:	\$200.00
Analytical costs:	\$499.00
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Report Costs:	
Report Preparation:	\$ 500.00
Drafting:	\$200.00
Reprographics:	\$50.00
Sub-Total:	\$12.654.00
GST (7% of \$12.654.00):	\$885.78
	<b>4000.10</b>
TOTAL VALUATION OF 1995 ASSESSMENT WORK	\$13,539.78

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# APPENDIX A

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# ANALYTICAL REPORTS

NORTHERN ANALYTICAL LABORATORIES LTD WO#27984 INTERNATIONAL PLASMA LABS iPL9512806 Rocks

Aurum Geological Consultants Inc.

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# CERTIFICATE OF ANALYSIS

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# Assay Certificate

Page 1

Dennis Ouellette

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Sample #	Au ppb	
D095006	22	
D095007	<5	
D095008	<5	
D095009	<5	
BL 900N	11	
LANON ZUUW	14	
LADON 100E	5	
L990N 200E	<5	
L700N 200W	6	
L700N 100W	11	
BL 700N	25	
L700N 100E	11	
L500N 200W	9	
L500N 100W	12	
L500N 100E	<5	
L500N 200E	11	
L300N 200W	<5	
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Certified by

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105 Copper Road, Whitehorse, YT, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

