PETROGRAPHIC REPORT

ON SAMPLES FROM THE

GETTY NORTH DEPOSIT

FOR GETTY COPPER CORP.

BY

R.C. WELLS, P.GEO., FGAC, CONSULTING GEOLOGIST
KAMLOOPS GEOLOGICAL SERVICES LTD.
910 HEATHERTON COURT
KAMLOOPS BC V1S 1P9

September 12, 2001

1. INTRODUCTION

This petrographic report on rock samples from the Getty North Deposit (formerly Krain) was requested by V.A. Preto PhD., P.Eng. (Director) for Getty Copper Corp.

The object of this study was to determine in polished thin section the location and distribution of secondary copper and acid consuming gangue minerals.

2. SAMPLES AND PROCEDURE

The scope of the study was discussed during a short meeting with V. Preto in Kamloops, BC. A total of five copper mineralized rock samples were submitted from remnant drill core and a surface outcrop. Following careful examination and preliminary description by the author nine areas were selected for polished thin sections as follows:

	SAMPLE	NO. OF PIECES	POLISHED SECTION NO. (SIZE MM)
Core			
	GN-97-58 PS 1	1	GN97-58 PS1 (26X46)
	GN-97-58 PS 2	1	GN97-58 PS2 (26X46)
	GN-97-64 PS 1	2	GN97-64 PS1A (26X46)
			GN97-64 PS1B (26X46)
	GN-97-64 PS 2	2	GN97-64 PS2A (26X46)
Outcrop			GN97-64 PS2B (26X46)
	OXT-PS1	3	OXT-1 (50X50)
			OXT-2 (50X50)
			OXT-3 (50X50)

The polished thin sections were prepared by Vancouver Petrographics Ltd. All of the sections were examined and described by the author using petrographic-metallurgical microscope with PP., CP and Reflected Light. Photomicrographs were taken to illustrate various relationships. Estimates were made of modal mineralogy for each sample. It was however impossible to give accurate estimates for alteration products (secondary mineralogy) in particular white mica /sericite-clay after feldspar, and chlorite after biotite. Alteration is referred to as weak, moderate or strong, based on personal experience. Oxidation products were also difficult to estimate though it was possible to give total percent and approximate proportions. Some malachite along fractures was probably not retained during polished section preparation.

Thin section descriptions and photomicrographs are appended at the rear of this report in Appendix A. In order to have some geochemical reference for these samples remnant chips were sent to Eco-Tech Laboratories Ltd. for 30 element ICP analyses. ICP Certificate of Analysis AK-2001-284 is included in Appendix B.

3. SUMMARY COMMENTS

All of the rock samples strongly oxidized especially along fractures-veinlets and originated from the oxidized cap to the Getty North Deposit. Some summary comments follow and are based on examination of the study samples (Appendix A) and limited ICP geochemical data (Appendix B).

a) Felsic Intrusive Protoliths

The sample suite features two felsic intrusive rock types with similar mineralogy and indicated quartz-diorite to quartz monzodiorite composition. Both are predominantly medium grained, one is hypidiomorphic-granular samples GN97-58PS1 and 97-64PS1. The other is a crowded plagioclase porphyry (CFP) with zoned phenocrysts. Plagioclase dominates with

andesine (core) compositions ranging from $An_{32\ to\ 48}$, rims are more sodic. Mafic minerals (4 to 15%) often occur in clusters with green-brown biotite dominant over altered hornblende (some clinopyroxene?). Fine grained quartz and minor K.feldspar (some microperthite) are interstitial. The former is often strained or variably recrystallized. Accessory minerals include disseminated fine grained epidote, calcite and sphene with strongly overprinted (oxidized) magnetite and sulfides? CFP sample 97-58PS2 contains minor fine grained calcite within interstitial quartz grain mosaics.

b) Pervasive Silicate Alteration

Pervasive hydrothermal alteration of primary silicate minerals was observed in all of the samples in the suite. In terms of a porphyry setting the alteration could be described as argillic or propylitic-argillic.

Both plagioclase and K.feldspar are variably altered to mixture of extremely fine grained sericite/white mica-clay. This alteration may parallel original zoning in the plagioclase or perthite mixtures (in K.feldspar). Minor amounts of extremely fine grained carbonate (calcite) were noted in area of stronger feldspar alteration.

Biotite and hornblende commonly display chlorite alteration which is often stronger though quite patchy in the latter. Chloritization may be accompanied by marked concentrations of extremely fine to fine grained oxides in both minerals and aggregates. Minor amounts of patchy, fine to extremely fine grained biotite, actinolite and calcite may occur with the chlorite especially in altered amphiboles.

Mafics in more strongly (argillic) altered samples such as (CFP) 97-64PS2 may also be selectively sericitized. This sample also contained the most (1%) disseminated carbonate

(calcite?) mainly after plagioclase. Other samples contained only low trace amounts of disseminated calcite.

Strong pervasive fine clay alteration of feldspars in outcrop sample OXT-3 may in part be related to surface weathering. No carbonate (calcite) was observed.

c) Fractures, Veining and Associated Alteration

A variety of early and late vein sets were observed in hand specimens and thin section. Many if not all contain some malachite along late superimposed fractures. These have exposed surfaces to oxidizing near surface solutions. In this environment limonite (hydro-goethite) often coats fractures and earlier vein and wallrock oxides.

Early quartz veins and veinlets probably related to the porphyry system include:

I. Veins and veinlet zones up to 1cm wide (samples 97-64 PS 1A, 2A, 2B and 97-58 PS 2). These have mosaics with 0.5 to 3mm quartz grains (locally brecciated and, or strained) with disseminated crystalline goethite and minor hematite up to 0.7mm. Associated sericite, strong sericitized plagioclase and chloritized mafics. Wallrock alteration can be millimetre wide envelopes to pervasive.

II. Extremely fine to fine quartz veinlets <0.1mm up to 1mm (sample OXT1-3. 97-58PS-1, 64-1B). When extremely fine these may form en-echelon tension gashes. Wider veinlets are penetrative, may be brecciated and have local narrow chloritic envelopes.

No obvious remnants of primary sulfides were observed in either vein type. Malachite is quite common especially in hand specimens, often associated with late superimposed fractures.

Extremely fine grained calcite was noted only in sample 97-64 PS 2A related to altered plagioclase.

Late zeolite veinlets generally less than 0.3mm wide were observed in sample 97-64 PS-2 and outcrop samples OXT1-3. These narrow penetrative veinlets and stockworks often follow pre-existing quartz veinlets and are also common in the wallrocks. They are open-space filling with extremely fine, prismatic laumontite, a hydrous calcium aluminum silicate. Non of these veinlets contain any calcite. Some ilmenite and malachite occur along fractures.

d) Disseminated Oxides

The samples in this suite contain between 2 and 3% disseminated extremely fine to fine grained oxides. Petrographically it is possible to distinguish amorphous yellow ilmenite, collaform to crystalline orange-brown goethite and dark reddish to opaque hematite/specularite.

Hematite and goethite form under highly oxidizing and generally arid conditions. There are marked concentrations of both hematite and goethite in mafic minerals. Hematite is coarser up to 0.7mm often with vague cubic forms in places pseudomorphing magnetite or pyrite? Finer goethite often occurs as trails along clevages in biotite and hornblende.

No obvious remnants of primary sulfides were observed in the sample suite due to the advanced stage of oxidization.

e) Related Geochemical Data

The multi-element ICP geochemical data for these samples (Appendix B) indicates copper values close to, or above 1% in all but one of the samples 97-58 PS 2. This CFP did however have malachite and quite a high quartz veinlet density?

None of the sample contained any appreciable silver, arsenic, molybdenum, lead or zinc (low background values). High barium values in samples 97-64 PS 1A, 1B and 2B may be related to stronger sericite alteration? These higher barium contents cannot be related zeolite minerals.

4. CONCLUDING REMARKS

Copper mineralization in the sample suite can be related to fracture and veinlet controlled malachite. These veinlets contain very little to no calcite.

The host rocks locally contain extremely fine grained disseminated calcite within strongly white mica/sericite-clay altered plagioclase. Calcite contents are generally trace up to a maximum of 1% in sample 97-64 PS2. Trace amounts of early (up to 0.7mm) interstitial calcite occurs in sample 97-58 PS2.

Regarding acid consumption in oxide ore during leaching. This requires controlled metallurgical testing and is not the realm of this study. The carbonate content of the ore will affect the pH of the leaching solution especially if it occurs along accessible fractures. Only minor amounts of calcite were observed in the sample suite many within silicates (feldspar, mafics) and generally, not along veinlets. Another very important feature relating to copper recovery is that virtually all of the malachite observed was along fractures and veinlets.

R.C. Wells P. Geol. FGAC.
Consulting Geologist.

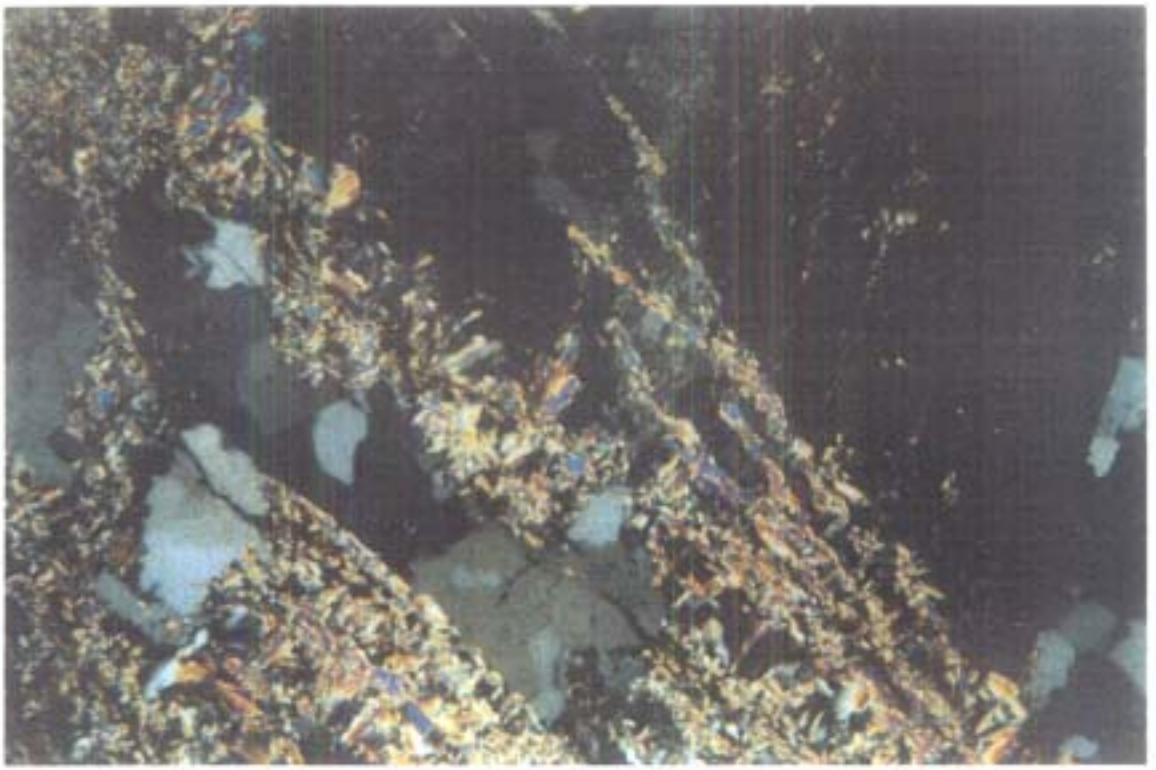
APPENDIX A

PETROGRAPHIC DESCRIPTIONS

With Photomicrographs.

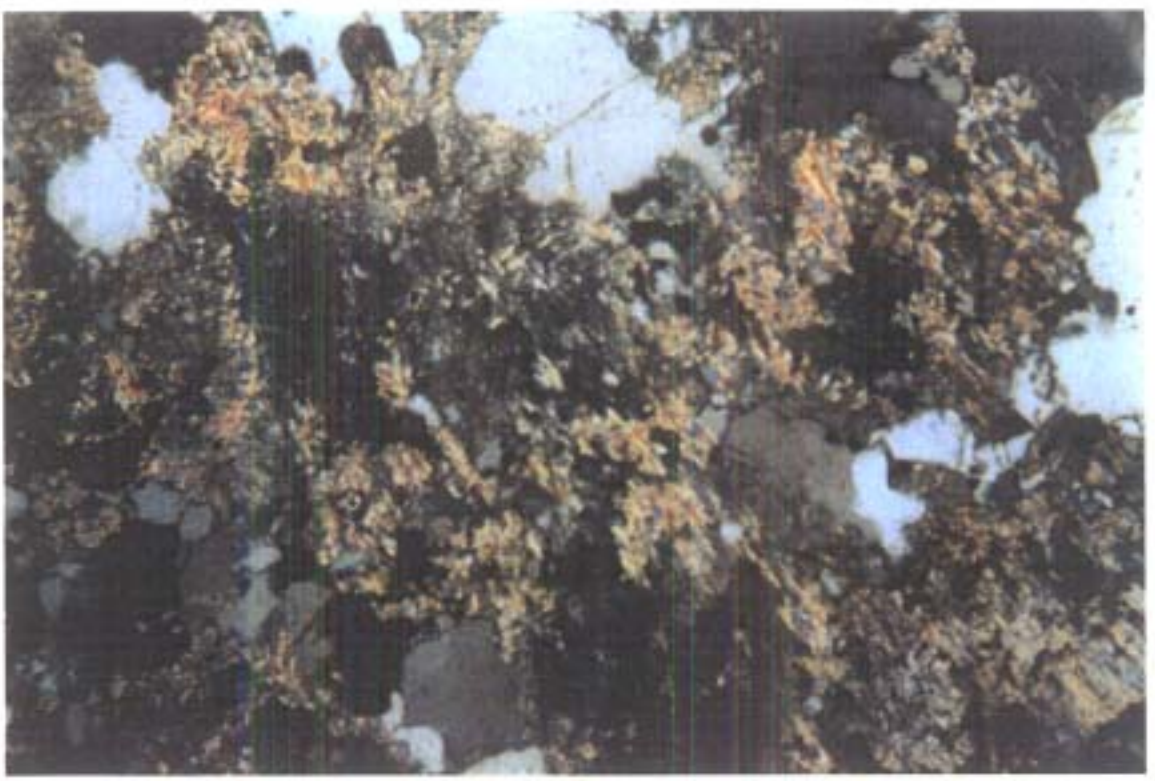
R. C. Wells, P.Geo., FGAC. Kamloops Geological Services Ltd.

PHOTOMICROGRAPHS 2

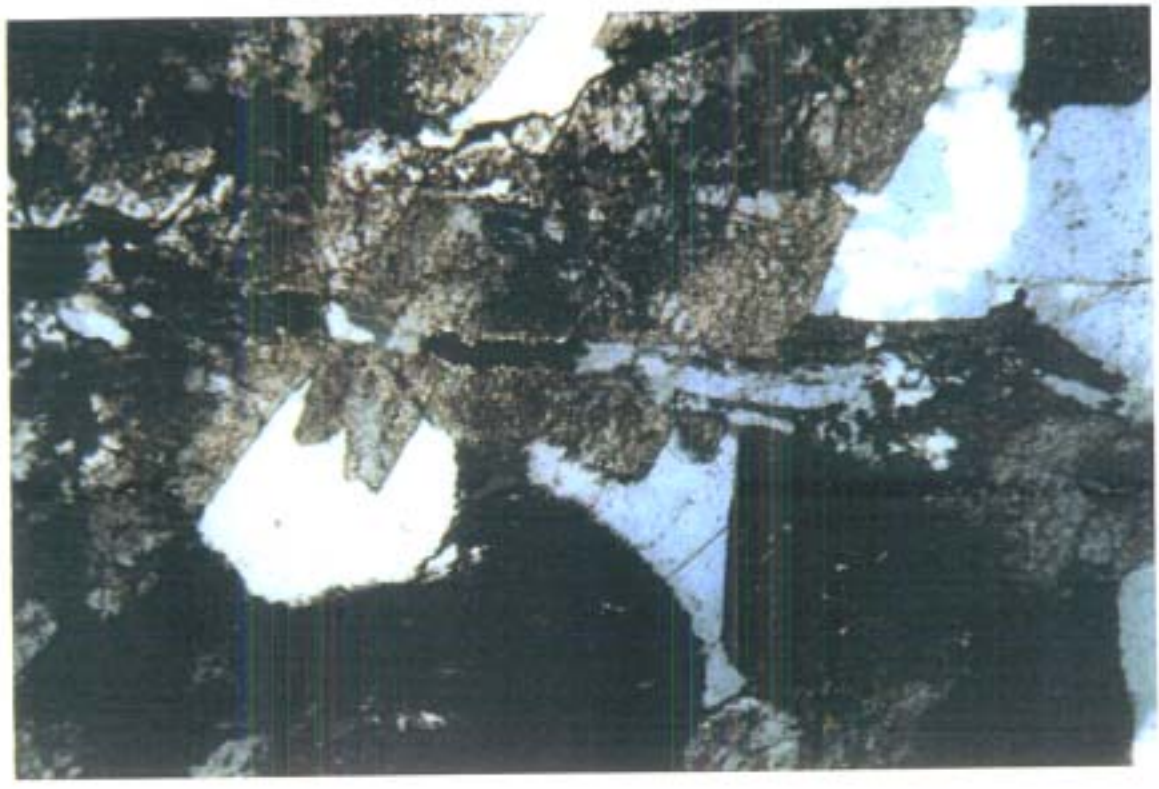


Scale 1mm.

CP. LIGHT. Above: Sample GN97-58 PS 2. Lensy quartz veinlets with broad sericitic alteration envelopes. **Below: Sample 97-64 PS 2A.** Strong pervasive white mica/clay (argillic) alteration of plagioclase. Note remnant quartz veinlets lower-left, mid-right.



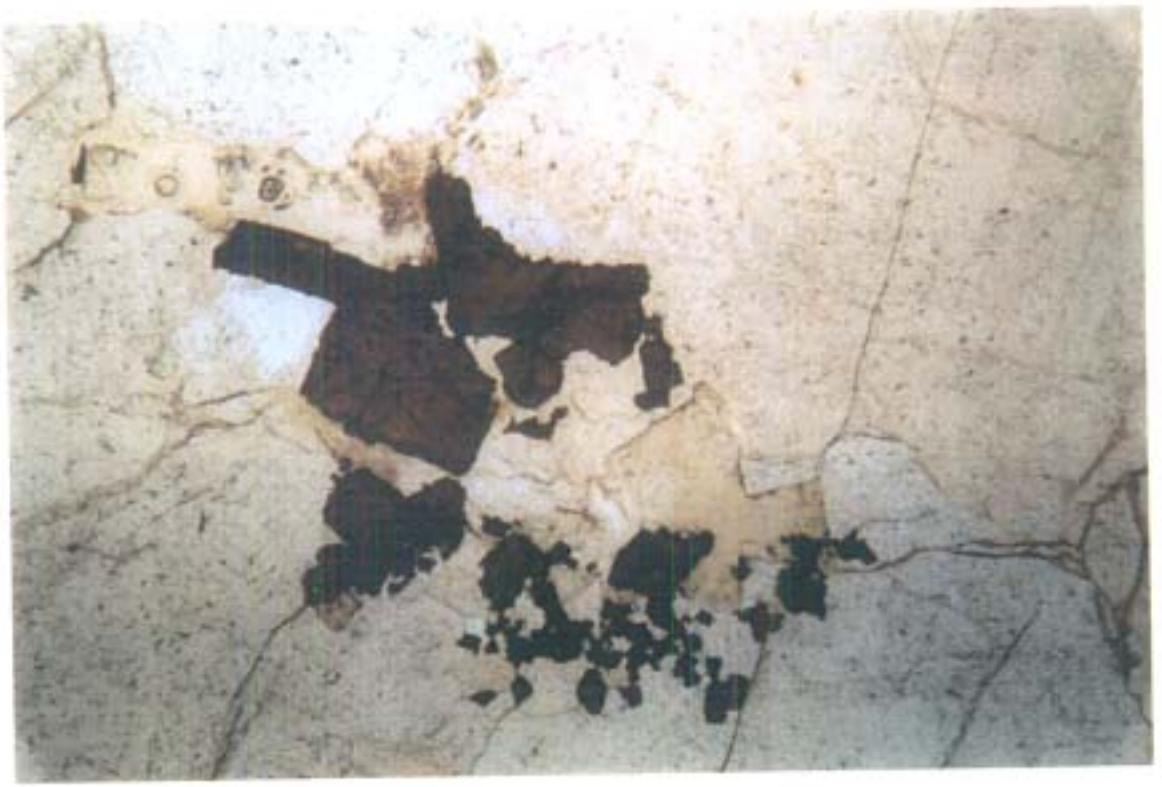
PHOTOMICROGRAPHS 3



Scale 1mm.

CP Light. Above: Sample GN 97-58 PS 1. Narrow penetrative quartz veinlets with fine oxides, no wallrock alteration. White mica-clay altered tabular plagioclase, interstitial fine quartz. **Below: Sample OXT-3.** Prismatic laumontite (zeolite) veinlets (pinks-blue) cutting earlier quartz vein (diagonal)

PHOTOMICROGRAPHS 4



Scale 1mm.

Above: PP. Light: Sample GN 97-64 PS 2B. Disseminated crystalline, orange-brown goethite in vein quartz. **Below: Reflected Light Sample OXT-1.** Specularite hematite pseudomorph after magnetite? enclosed in chloritic altered biotite (upper centre).

SAMPLE: GN97-58(PS-1). Drill Core.

1. HAND SPECIMEN DESCRIPTION

Mottled, medium grained quartz-diorite. Fairly equigranular with plagioclase as the dominant feldspar. Local interstitial K.feldspar (approx. 5%) indicated by staining. Disseminated, interstitial quartz, finer grained. Altered mafics include biotite and probably hornblende. Fine oxidized fracture veinlets up to 1.5mm wide, approx. 1cm spacing, some containing malachite. No carbonate reaction to strong HCl. Non magnetic.

2. THIN SECTION DESCRIPTION

a) Mineralogy: Modal (estimated %)

Quartz	13%	
Plagioclase (An_{45-48})	63	weak/local mod., white mica/clay alteration
K.feld/Perthite	4	as above
Biotite	10	local patchy chlorite alteration
Hornblende (some Cpx?)	6	Local Chl, 2nd biot, oxides, rare carbonate alt.
Carbonate (calcite)	Tr	
Epidote?	Tr	
Sphene	Tr	
Oxides	3	mainly hematite, goethite, minor limonite
Veinlets	1	mainly quartz, Tr. malachite

b) Comments

This sample is an oxidized, predominantly medium grained, hypidiomrphic-granular, quartz-diorite.

Plagioclase, tabular biotite and altered hornblende (some Cpx?) have 0.5 to 2mm grain size. Quartz and K.feldspar/microperthite are fine grained (<1mm) often interstitial. The quartz is strained or variably recrystallized.

Green to brownish green biotite displays local weak, patchy chlorite alteration. Hornblende is generally more altered with patchy chlorite, local secondary biotite laths (more brownish). Both mafic minerals feature concentrations of fine disseminated opaques/oxides.

Much of the plagioclase and K.feldspar display pervasive, extremely fine disseminated white mica/clay alteration which is generally weak to weak/moderate strong. Anhedral crystalline oxides are disseminated throughout, though clearly concentrated in mafic minerals and along veinlets. Specularite/hematite is common and appears locally to pseudomorph subhedral magnetite and possibly pyrite with up to 0.6mm grain size. Extremely fine disseminated crystalline goethite is often concentrated in altered mafic minerals (hornblende, Cpx).

R. C. Wells, P.Geo., FGAC. Kamloops Geological Services Ltd.

A few narrow <0.1mm quartz veinlets were observed. These are late and cut the silicates and contain dusty limonite and some malachite.

Carbonate (calcite) is present in trace amounts as extremely fine grained clusters proximal to altered plagioclase and more rarely hornblende. Malachite was the only carbonate observed in veinlets.

KAMLOOPS GEOLOGICAL SERVICES LTD.

910 Heatherton Court
Kamloops BC
V1S 1P9

Telephone 828-2585
Fax No. 372-1012

TO: Getty Copper Corp.
1000 Austin Avenue
Coquitlam BC V3K 3P1

FROM: R.C. Wells, P.Geo., FGAC, Consulting Geologist

RE: Getty North Project Petrographic Study

DATE: Sept 16 2001

INVOICE

SERVICES			
R.C. Wells - Petrographic study and report			$2,125.00
		GST	148.75
		Sub total	$2,273.75
EXPENSES	GST Incl.		
Vancouver Petrographics Ltd. Section Preparation	24.62		376.37
Eco Tech Laboratories Ltd. ICP Cert. AK 2001-284	6.65		101.69
		Sub total	478.06
		TOTAL OWING	**$2,751.81**

GST # 12699 6073 RT0001

Vic,
call me.
Marilyn