# 93L/11W

#### GEOLOGICAL AND GEOCHEMICAL REPORT

Ъу

J.M. Newell, P.Eng. J.R. Forsythe, B.Sc.

on surveys completed during July-August

on the

TABLE, MONTY, AND STOCK MINERAL CLAIMS

situate in the headwaters of Winfield Creek

in the

#### OMINECA MINING DIVISION

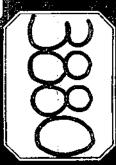
54<sup>o</sup>N, 127<sup>o</sup>W, N.E. (NTS 93-L-11)

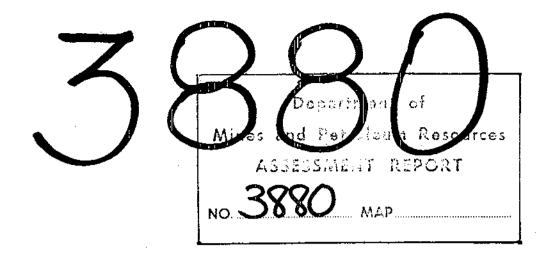
and owned by

COPPER QUEEN EXPLORATIONS LTD.

September 1972

Vancouver, B.C.





#### GEOLOGICAL AND GEOCHEMICAL REPORT

bу

J.M. Newell, P.Eng. J.R. Forsythe, B.Sc.

on surveys completed during July-August

on the

#### TABLE, MONTY, AND STOCK MINERAL CLAIMS

situate in the headwaters of Winfield Creek

in the

#### OMINECA MINING DIVISION

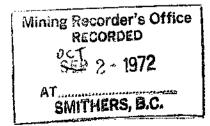
54<sup>o</sup>N, 127<sup>o</sup>W, N.E. (NTS 93-L-11)

and owned by

#### COPPER QUEEN EXPLORATIONS LTD.

September 1972

Vancouver, B.C.



#### TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	
Summary	1
Location, Access & Ownership	2
History and Previous Work	2
GEOLOGY	
Regional Geology	3
Property Geology	3
GEOCHEMISTRY	
Field and Laboratory Methods	5
Discussion of Results	6

APPENDIX A - Statement of Qualifications

APPENDIX B - Analytical Report Sheets

#### LIST OF MAPS

#2Geology 1" = 400' #3Geology 1" = 50' #4Geochemistry 1" = 400' #1Claim Map 1:50,000

# Geological and Geochemical Report TABLE, MONTY, AND STOCK MINERAL CLAIMS Omineca Mining Division

#### INTRODUCTION

#### Summary

During the summer of 1971, the property was examined by Mr. J.M. Newell, on behalf of Texas Gulf, Inc. in order to determine possible interest in negotiating an option to purchase. With the permission of the owners, a geochemical soil sampling survey was conducted over parts of the Table and Ken claims. Analyses indicated very strong, local copper anomalies, associated with weak mineralization and a long, sinuous, north-trending anomaly showing some continuity, and considered worthy of further investigation. Subsequently, the geochemical soil sampling survey was extended and parts of the Table, Ken and Monty claims were geologically mapped. This work was undertaken during the period 28 July to 22 August 1972, and provided the data on which this report is based.

#### Location, Access & Ownership

The property is comprised of eighty-six mineral claims, located in the headwaters of Winfield Creek, a tributary of the Telkwa River. It is centered at latitude 54°42' north, longitude 127°29' west, approximately thirteen miles west-southwest of Smithers. The property is owned by Copper Queen Explorations Ltd., with offices in Vancouver, B.C.

Best access is by helicopter from Smithers, but a rough jeep road provides dry-weather access from the village of Telkwa, a road distance of some 30 miles.

Property elevations vary from 4,500 to 5,600 feet and much of the claim group is above timber line.

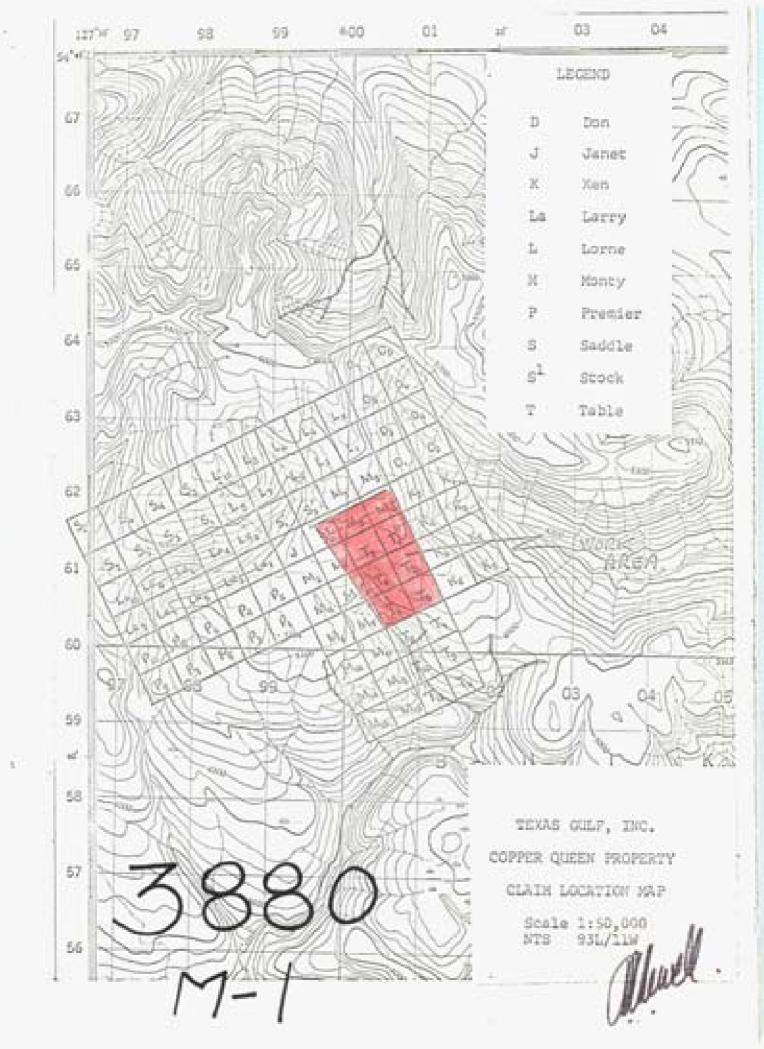
#### History and Previous Work

The original Copper Queen showing, an occurrence of high grade chalcocite mineralization, has been known since 1917.

In more recent years the property has been explored by the present owners and work has included:

- 1. geological mapping
- 2. geochemical soil sampling
- 3. I.P. and E.M. surveys
- 4. extensive bulldozer stripping
- 5. diamond drilling (five holes)

A geochemical survey was completed by Texas Gulf in 1971.



Department of

Mines and Petraleum Resources

ASSESSMENT REPORT

NO 3880

#### GEOLOGY

#### Regional Geology

The property is underlain by a thick pile of volcanic rocks of the Jurassic-Cretaceous Hazelton group. This sequence includes volcanic flows, tuffs and agglomerates, ranging in composition from andesite to rhyolite, and also contains sedimentary sections. The closest intrusive rocks are located several miles to the north, on Hudson Bay Mountain.

#### Property Geology

Geological mapping, at a scale of 400° to the inch, was confined to the Table 1-6 claims and parts of Monty 1, 3, 5, 8, 10 and Stock 2 claims. A chain and compass picket line grid trending  $120^{\circ}$  was established for control. Location of this grid was determined by anomalous copper values in soil samples taken by Texas Gulf, Inc. in August 1971. The same grid used in 1971 was relocated and extended to the north and west. Mineralized showings and trenches were mapped on a scale of 50° to the inch.

A series of volcanic rocks trends north to northeastwards through the property with strikes ranging from 350° to 030° and dips ranging from 20° to 40° east. The sequence is comprised largely of fine to coarse-grained, purple lithic and crystal tuffs, with lesser amounts of intercalated grey lithic tuff and buff, ashy, lithic and crystal tuffs. In the southwest grid area, porphyritic (sometimes amygdaloidal) andesites, containing phenocrysts of pink feldspar, form local topographic highs. Similar andesite flows, in the areas surrounding the property, are intercalated with tuffaceous and

fragmental rocks, but field evidence in the grid area is insufficient to determine whether these flows are conformable or disconformable in relation to the tuffs.

A banded, siliceous volcanic rock, varying from slightly purplish to grey to cream in colour, is present in the central to south central grid area, but could not be traced to the north. This siliceous unit is probably rhyolitic and exhibits both flow and tuffaceous textures. Weak copper mineralization, mainly as malachite, can be found in this unit at several locations. A soil sampling survey was conducted to test the possibilities for significant mineralization in this unit.

The old Copper Queen "high grade" showing was mapped on a scale of 50' to the inch. In 1917, seven tons of high grade copper ore were extracted from a narrow quartz vein occurring within a wider shear zone. An adit and shaft were completed at about that time, but are now badly caved in and inaccessible. The host rock is variable, light to dark grey siliceous lithic tuff, which has been heavily sheared. Purple lapilli tuffs, which in some places appear bedded, lie stratigraphically above and below the old workings.

Mineralization in the form of chalcocite, malachite, minor chalcopyrite and minor azurite was noted in fractures at the old shaft. Several faults are prominent in and around this shaft and specimens of fault breccia with chalcocite filling matrix can be seen. The mineralization in the fault zone is approximately five feet wide and appears to be restricted and controlled by faulting. Surrounding tuffs are barren of significant mineralization.

#### GEOCHEMISTRY

#### Field and Laboratory Methods

A soil survey conducted in 1971 indicated local anomalies in copper. The grid was extended to the west and north, and soil samples were collected at 100 foot intervals on the original grid lines spaced 400 feet apart, and new lines spaced 800 feet apart. In addition, fill-in soil sampling between lines 248, 288, 328, 368, 408 and 448 from 3W to 6W was completed in order to better define the local copper anomalies. A total of 205 soil samples and 13 rock chip samples were taken. Soil samples were taken from shallow holes dug with a mattock and "B" horizon material was collected where possible.

The samples were collected in Kraft paper envelopes and shipped to the Bondar-Clegg and Co. Ltd. laboratory in North Vancouver. Initially samples were analysed for total copper and silver. The silver results showed little variation and therefore subsequent samples were analysed for total copper only.

The analytical technique may be summarized as follows:

The samples are first dried and sieved to obtain the -80 mesh fraction. Contained metal is extracted from a weighed sample of this fraction, using Le Fort aqua regia. The resulting solutions are bulked to 20% acid concentration and analysed by atomic absorption spectrophotometry, in constant comparison with both synthetic and matrix standards. Results are expressed in parts per million total metal content.

#### Discussion of Results

Inspection of the analytical results (see Appendix B) shows little variation in total silver values, and they are regarded as having little exploration significance. These results are therefore not plotted on the accompanying geochemical map, but sample numbers are plotted and analytical report sheets included in Appendix B.

showing the distribution of total copper values, obtained from 343 samples collected in 1971 and 205 samples recently collected in 1972, indicates a background range of 3-40 ppm, with a peak distribution of 11-20 ppm. The threshold of interest is taken as 40 ppm, and values in excess of 80 ppm are considered anomalous. Both 1971 and 1972 copper values are plotted on the accompanying map and contoured at 40, 80, 160, 240 ppm representing threshold, third, second and first order anomalies.

A plot of the copper values shows a scatter of eight, one or two-sample, first order soil anomalies with only weak support from lower order anomalies. The contoured values define rather small, discontinuous and patchy anomalous zones which show weak northerly and easterly trends. Many of the anomalous copper values fall within Unit 1 (see Geology Map), the banded siliceous volcanic rock. In the north grid area, where this unit was not found, anomalous copper values are conspicuously absent. The easterly trend corresponds roughly to fault directions in the central grid area. These results are therefore suggestive of weak copper mineralization related to faults and fractures in the banded siliceous volcanic unit.

A suite of 13 rock chip samples was selected from the various lithologic types exposed in the grid area. Care was taken to avoid known exposed mineralization in order to determine if any particular rock type contains anomalous copper values. These samples were analyzed geochemically for total copper, lead and zinc. The results are as follows:

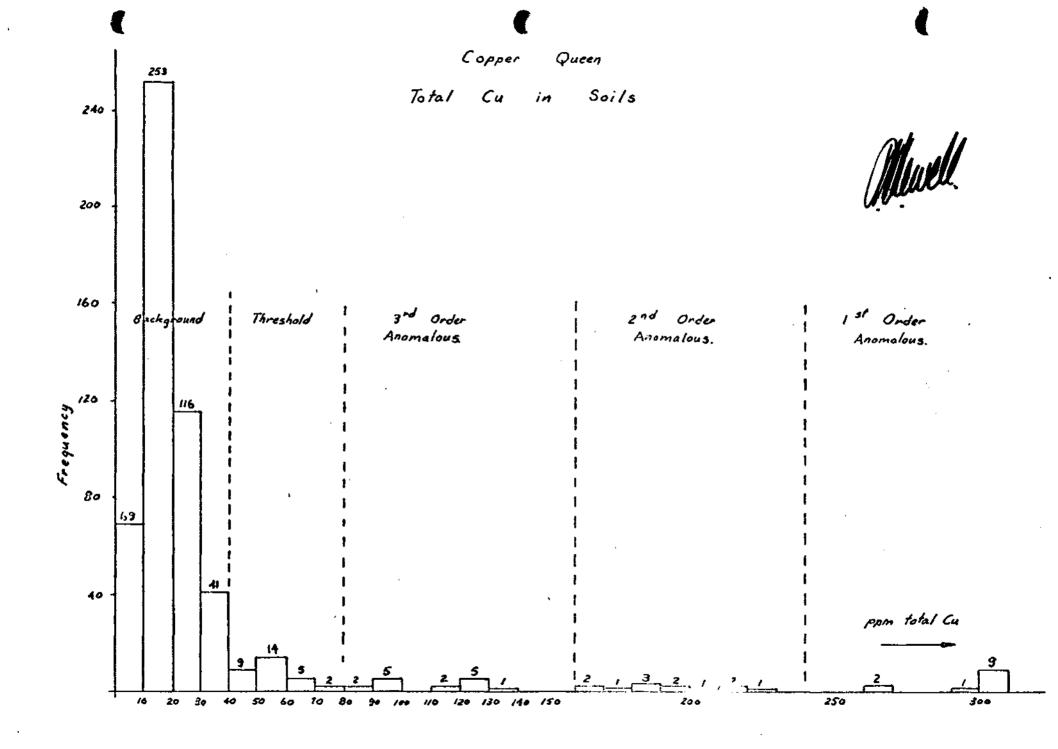
Sample No.	Rock Type	Total <u>Remarks</u>	Metal <u>Cu</u>	Conte Pb	nt in ppm <u>Zn</u>
507	Banded siliceous volcanic rock.	No visible sulphides	10	6	29
508	Banded siliceous volcanic Rock.	No visible sulphides	6	4	17
509	Grey lithic tuff	Minor limonite on fractures.	100	5	84
510	Grey-green andesite	Only slightly weathered, no visible sulphides.	18	14	380
511	Grey-green andesite	<b>-</b> # -	6	14	410
512	Ashy lithic tuff	Sub outerop	34	6	53
513	Ashy and banded siliceous volcanic rock.	Minor limonite stain on fractures	114	3	14
514	_ 11 _	_ "	138	3	9
515	Banded siliceous volcanic rock.	Traces of limonite	82	4	11
516	_ 11 _	No visible sulphides, slight traces of limonite.	15	12	13
517	Purples lithic tuff	Red-yellow limonite stain	79	22	240
518	Purple lithic tuff	Some lithic fragments altered to limonite	14	10	88
519	Ashy lithic tuff	No visible sulphides, some lithic fragments altered to limonite.	. 8	4	40

<sup>\*\*</sup> Note: Sample locations are plotted on the geology map

From these results it is interesting to note that the three outcrops sampled which returned the highest values in copper, all contain limonite stains on fracture surfaces. This again suggests that mineralization is fracture-controlled. This is supported by evidence exposed in the old Copper Queen "high grade" showings where chalcocite mineralization occurs in fault breccia.

J.R. Forsythe

JRF:mcc



#### DOMINION OF CANADA:

PROVINCE OF BRITISH COLUMBIA.

To Wit:

In the Matter of Assessment work carried out on the Premier, Lorne and Ken Groups of Mineral Claims, situate on Winfield Creek, in the Omineca Mining Division.

₽. John M. Newell

of 701-1281 West Georgia Street, Vancouver, B

in the Province of British Columbia, do solemnly declare that during the period 28 July to 22 August 1972, I caused assessment work to be done on the Premier, Lorne and Ken Groups of Mineral Claims, to the value of \$2350. expenses were incurred as follows:-

#### Salaries and Benefits

B.D.	Ratcliffe	5 days	Q	\$25
C.J.	Rockingham	5 days	Q	\$25
D.B.	Kilby, B.A.Sc.	7 days	₫	\$40
J.R.	Forsythe, B.Sc.	7 days	Q	\$50
D.E.	Esau	8 days	<u>a</u>	\$25
W.B.	Lennan	8 days	a	\$25
J.M.	Newell, P.Eng.	(supervision)	)	
		l day	g	\$100\$1380

#### Geochemical Analyses

116 samples for Cu 89 samples for Cu 205 sample prepara 13 samples for Cu, 13 sample preparat	@ \$1.00 tions @ \$ .20
Room and Board	40 man-days @ \$10\$ 400
Transportation	Helicopter 30 mins., vehicle 8 days

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the of VANCO Province of British Columbia **AUG** day of

Sub-Mining

A Countissioner of taking Afficavits for Bruish Columbia of A Notary Public in and for the Recentice of British Columbia.

Muld.

In t	he Matter	of
		* 1 * *
	·····	
	<del></del>	
	ory Declara	
(CAN	ADA EVIDENCE ACT	Γ)

#### APPENDIX A

Statement of Qualifications

#### APPENDIX A

#### Statement of Qualifications

- J.R. Forsythe obtained his B.Sc. degree in Geology, from the University of British Columbia, in 1968. Since that time he has been employed as an exploration geologist by Texas Gulf, Inc. (previously Texas Gulf Sulphur Company).
- D.B. Kilby obtained his B.A.Sc. degree in Geological Engineering from the University of British Columbia in 1971. Prior to graduation he worked as a field assistant with Texas Gulf during three summer seasons. Since graduation he has been employed as an exploration geologist.
- B.D. Ratcliffe, C.J. Rockingham, D.E. Esau, and W.B. Lennan are field assistants, employed by Texas Gulf, Inc. for from two to six field seasons. All are well trained, conscientious and competent in the exploration techniques employed on this property.

J.M. Newell, P.Eng.

#### APPENDIX B

Analytical Report Sheets



15CD PEMBERTON AVE., NORTH VANCOUVER, B.C. PHONE: 995-0681 TELEX: 04+54554

### Geochemical Lab Report

Extraction	1107-11110 	<u> </u>			Report No	2-223	: 		
Method 1	Atomio	Abserptic	:A		FromTEMAS	eulf, inc.	. (EET	- 76) 	
Fraction Used		-80 meet		<del></del>	DateAug	ust 9, 783	/2 		19
SAMPLE NO.	03 222	200	Ag		SAMPLE NO.	03 070	Zn	Ag	
1	1 22.4	1	غستن ا	٠ -	8 - 3436	32	pna +	0.5	
i !				-	2435	73		0.3	
:					3435	18		6.8	
				•	343 <b>7</b>	3	-	0.5	
			·		3438	13		0.3	
•					3/33	75	-	0.7	
					3440	30	<del>-</del>	0.7	
					3443	13		0.5	1
					3442	27		0.8	
					3443	8		0.4	
	,	- 1	1	1 1	3444	ε		0.2	
3439	13		0.6	<b>\</b> ,	3445	6		0.5	
V 3475	24	-	0.8		3648	9	_	0,5	
/n / <sup>(2)</sup>   .0437	12	-	0.5		3447	255	<u></u>	0,5	
-/// 2410	16	-	8.6		3449	7.4	-	9,0	<u> </u>
ii 2419	Ę		0.5		3449	9	-	0.4	
3420	12	_	7.7		3463	Δ.		G.2	
Ş 921	3		0.2		3483	33		0.8	
3/22	10	-	0.4		0462	10	**	0.7	
0323	¥.5	-	0.6		3953	9		0.5	
2,424	70	-	0.7	<u> </u>	3454	17	-	0.6	
2420	23	-	0.0		3455	25		0.6	
3,920	79		0.0		3456	30	-	0,6	
3427	24	-	0.8		3487	ê,	-	0.3	
3120	5	-	0,5		0456	6		0.5	
2813	10	_	7.0		8459	 30	<u>.</u>	0.0	
3520	į	~	0.9		3400	June 1	-	0.0	
1 67 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	10	<b>-</b>	3.0		3463	24		3.0	
3,732	4	-	0.2		3402	56	~	1.3	
2 - 5355	133		0.0		N - 3493	10		0.8	
	Ì								

# BONDAR-CLEGG & COMPANY LTD. Geochemical Lab Report Page No. 22

SAMPLE NO.	0\h 1779	#771 12771	Ag ega		!			R	EMARKS	
11 - 2000	25		0.9							,
3000	20	-	6.7							
2006	39		0.8							
3407	3		0.5							
3468	13	<b>~</b> .	9.0							
3,539	S	-	0.6			_				,
2470	5	•4	0.5							
3477	23		3.0	-						
\$ 3072	10		1.0		_		_			
§ 3478	20		1.5							
A 2474	S.	-	0.3							
3075	5	-	0.2.							
3475	8	-	0.5							
8477	72	-	0.7							<b></b>
0.678	4.	~	0.5							
3479	7	-	0.6					<u>.</u>		
3000	7	-	0.4							
3407	3.3	-	0.6					. <u> </u>		
3402	13		0.8							
\$493	12		0.5							
2/(24	7		0.4							
3495	17	9	0.9							4.:
3485	72	-	0.9							· .
3487	6	~	0.7							
3/130	22		2.7							
√ 3039	8	-	0.6							
3501	9	80	0.6		ا معمول	2000			<del></del>	



1500 PEMBERTON AVE., NORTH VANCOUVER, B.C. PHONE: 985-0681 TELEX: 04-54554

## Geochemical Lab Report

Project No. EET-19

Extraction (ICI-100)	Report No. <u>22-452</u>
Method <u>Acomic Misorption</u>	From Toxic Gelf, Inc.
Fraction Used	Date : August 30, 1072 19

SAMPL	E NO.	Cu	P5	7.D 2003	Ag	SAMPLE NO.	Cu ppsi	Pb ppu	Zn ppn	<u>አ</u> ር:
nocits	× 507	10	6	20						•
	500	s	C,	77_						
3	500	100	5	84						
9	510	13_	74	300						
<i> </i>	571_	6_	37,	430						
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	512	34	σ	53_	****					
1:100	513	174_	3	14						
	57.4	138	3_	9	4					
	575	22-	٤,	7.7						
	576	75	32	73						
	517	79	22	240		<u> </u>				
\	213	14	10	83						

ু ১१∼ডড2ক	1 70	1		
3525	10			
\(\begin{picture} \(\chi_{\text{Co}}\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	72		****	•
Q 4 6 3527	23			
3523	18			
3629	27			
3338	75			
3531	פַּרָ	****	**	
3033	32			
9533	7.7			
3834	7.0			
3035	35			
2733	23			
8337	17			
H~3530	17			

## ONDAR-CLEGG & CONDANY LTD.

## Geochemical Lab Report

3

Copper Queen.

SAMPLE NO.	ppm Din	Copper TY9 TPM	ppa	pp a	<u> </u>	_		REMARKS
н-3909	18		VB 112 70 64	~~~~				
3910	74			ent to mit to				
3917	339			La 40 1,- 18				
3912	79	E3 000 400 400		34+4- <b>-</b>			<del></del>	
3913	35	A 100						
3914	26		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
3915	22			, 442 344 475 475				
3916	25		****	****				
3917	25	*********		agrind co-sh		<u> </u>		
. 3918	28							
3912	22		**********					
3920	30		140 to 140 140	****			<u> </u>	
3921	20		W. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			·		
3922	15		****	4				
3923	49		~~~	50° 440° 1-10° 50°			<del> </del> -	
3034	92					<u>-</u>		
3925	21	********						
3926	74			****				
3927	26						<u> </u>	
3928	15							
3929	12		-0-44 to pro	A19 Apr 1924 1934			<del>-</del> .	
3930	270							
3931	21							
3932	97							
3933	34	*****	#= w w					
3934	35			JG 445 45 45				
3935	77	****	the res air 6's	12.27.22				
3933	19							
3937	32	mp var and ma	***********					
3933	42		84 Va ab Ca					·
3939	<b>3</b> 8	A- 140 da 140	******	~ 41 45 40				
3948	20					·		
3947	36	11/ Tau 12 m3						
3942	52	E14140	the total o					
H-39 <b>43</b>	74	WE R4 Ga	The one may ple				·	
<u> </u>				<del> </del>	·	<u></u>	<u> </u>	

## / CONDAR-CLEGG & COMPANY LTD.

Raport No.

## Geochemical Lab Report

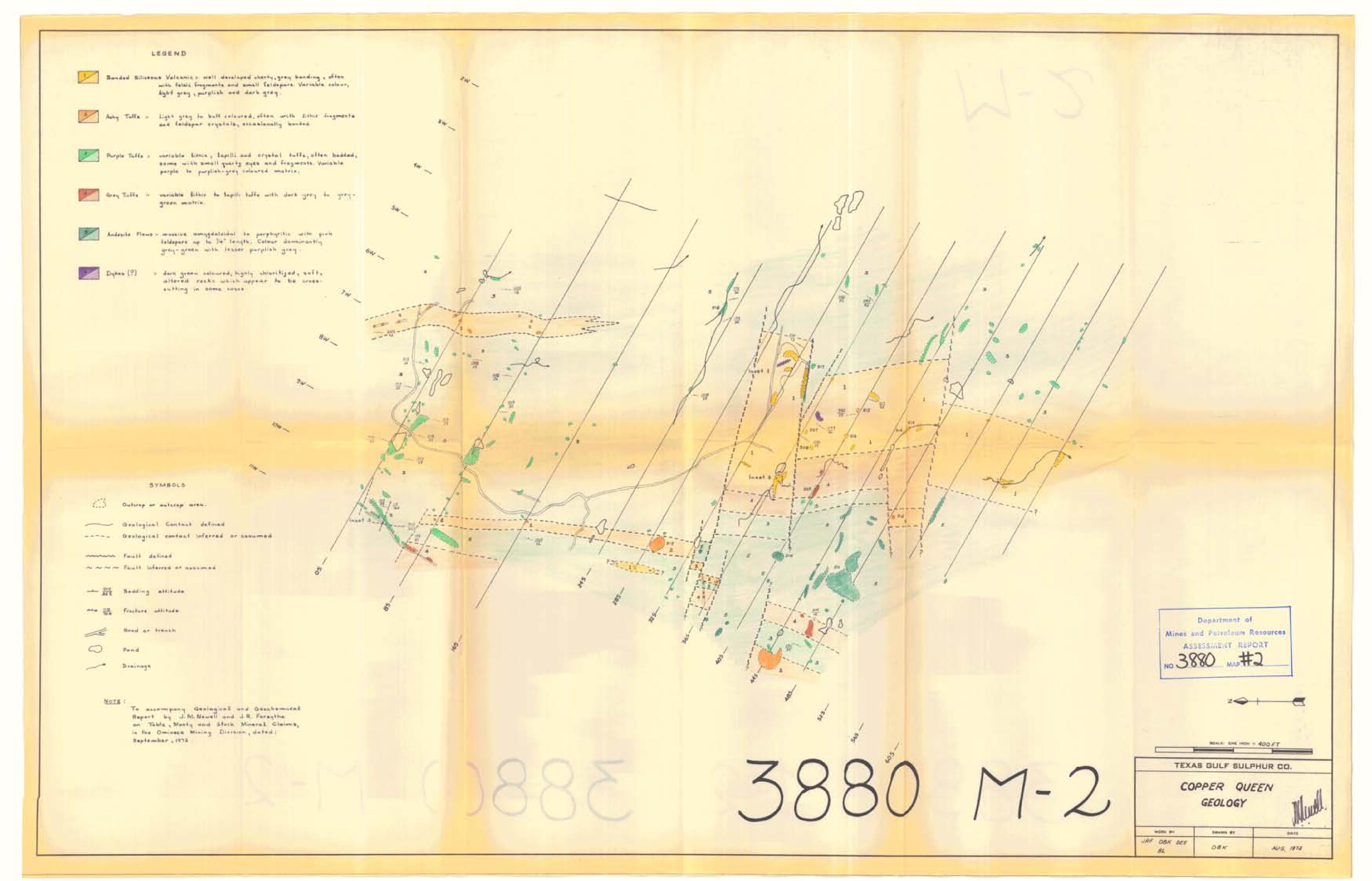
Page No.

·		-०१०७७		· ,	_ <del></del>	<del></del> ;	<del></del>			
SAMPLE NO.	522	7755 (p.570	74.3 74.3	154			1	P	EMARKS	
11-0707	13			A 6-4						
3070	14	~~~								
3017	177	Cal Cap 2.14 114								
307.2	79	7.4 and 414 EFF					Ì			
2013	75		~~··-						· 	
3014	25		120100					<del></del> -		
5715	22		****	_+++				··-		
3976	25		~~	e1 -1 -1						
pl 2017	25			as me tir un						
<u> </u>	28									
- Tep:10	22	<b>********</b>	A						<u> </u>	
<u></u> 220	29								·	
7907	20		B4-4-4-4							
3922	75									
- 3923	49			gur 6.07 6.08 1600						
, 3030	92									
<sup>5,</sup> 3925	23			50 W 10 US						
3026	74	1								
0027	26									
0888	15									
3020	12		20. pn 10. pq 1_ 1 -01-101 1							
3000	270							#1 1,121		
3931	23			andre sald speed to the						
3783	91	~~~								· · · · ·
5033	34									
3374	135		~							
3335	33	,,_,,				,				
3000	19	*****								
3007	32									
3733	42									
2705	30		10.00.00							
2000	20									
3541	1 35		~~~	*****						,
3362	52		No me - a - a							
.5-0543	\$-}.									
					1					
<u></u>	<u> </u>	:	<u> </u>	. !	1	<u>-'</u> -		·	··	_

## CONDAR-CLEGG & CONPANY LTD.

Geachemical Lab Report

	$G_{2,2}$	<u>رول ۲۰</u>	ರೂಪ್ -						
SAMPLE NO.	04 553		Zn pro	Ag DDG				REMARKS	
. 1:-3035	32		<b></b>	## No 17 W1			-		
2045	99		<b>w</b> +-	75 74 TO TO					
3740	15	****	-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4	w					
8-3047	70	~		# C					
Start	6.2								
								on the 3 D Transition	
		<u> </u>							
							-		
				_			-		
				<u> </u>		• •			
			<u>                                     </u>						
		<u> </u>		i 					
				<u>!</u>	<u> </u>				
	<u></u>				-	·	~ <u></u>		
			· 						
	<u> </u>	<u>                                      </u>	<u> </u>	-	<u> </u>			i	
			· _	<u> </u>	<u>.</u>		<u> </u>		
					-	<u> </u>	<u> </u>		
			<u> </u>			1			
		 					<u></u>		
			<u> </u>						
								·	
					-	!		<u> </u>	
						<u> </u>			
				<u>{</u>		<u> </u>	<u>;</u>		
· · · · · · · · · · · · · · · · · · ·	<u> </u>	<u></u>	<u> </u>	<u> </u>		<u> </u>	<u> </u>		



LEGENO Day of the last Mines and delicated transcet Background 0-40 ppm fet Cu ASSESSMENT MORT Order BI-160 ppm Order 161-240 ppm al Order >241 ppm Note To accompany Geological and Geochemical
Report by J.M. Newell and J.A. Forsythe
on Table , Manly and Stock Mineral Claims,
in the Omineca Mining Division , dafed:
September, 1872 MENUE DIE MEN - 400 FT TEXAS BULF SULPHUR CO. COPPER QUEEN SOIL GEOCHEMISTRY pam tot Cu. WORK BY DWAINH BY - BATT BR CR AUG 1972 DBK

