

REPORT ON  
DIAMOND DRILLING  
on the  
CHRIS 2 and CHRIS 4 MINERAL CLAIMS  
(Red-Chris Property)  
Ealve Lake Area, Liard Mining Division  
57°45'N 129°45'W 104 H/12W

by

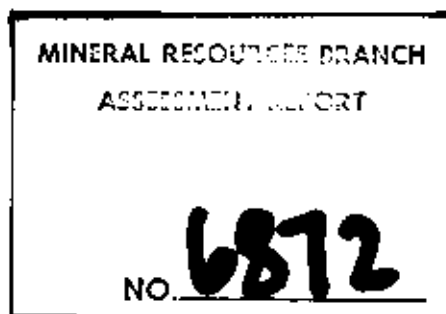
J.M. Newell, P.Eng.

Claim Owners: Great Plains Development Co. of Canada Ltd.  
Silver Standard Mines Ltd.  
Texasgulf Canada Ltd.

Operator: Texasgulf Inc.

Vancouver, B.C.

August, 1978.



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## INTRODUCTION

### SUMMARY

This report summarizes the results of a diamond drilling programme completed on the Red-Chris Property during June 1978. Work was conducted by Texasgulf Inc. on behalf of Texasgulf Canada Ltd., Great Plains Development Company of Canada Ltd. and Silver Standard Mines Ltd.

A total of 391.4 metres of diamond drilling, in five holes, was completed during the 1978 programme. Drilling was contracted to D.W. Coates Enterprises Ltd. of Richmond, B.C. who employed a diesel-powered Boyles BBS-1 wireline rig, recovering BQ core.

### PROPERTY LOCATION, ACCESS AND TERRAIN

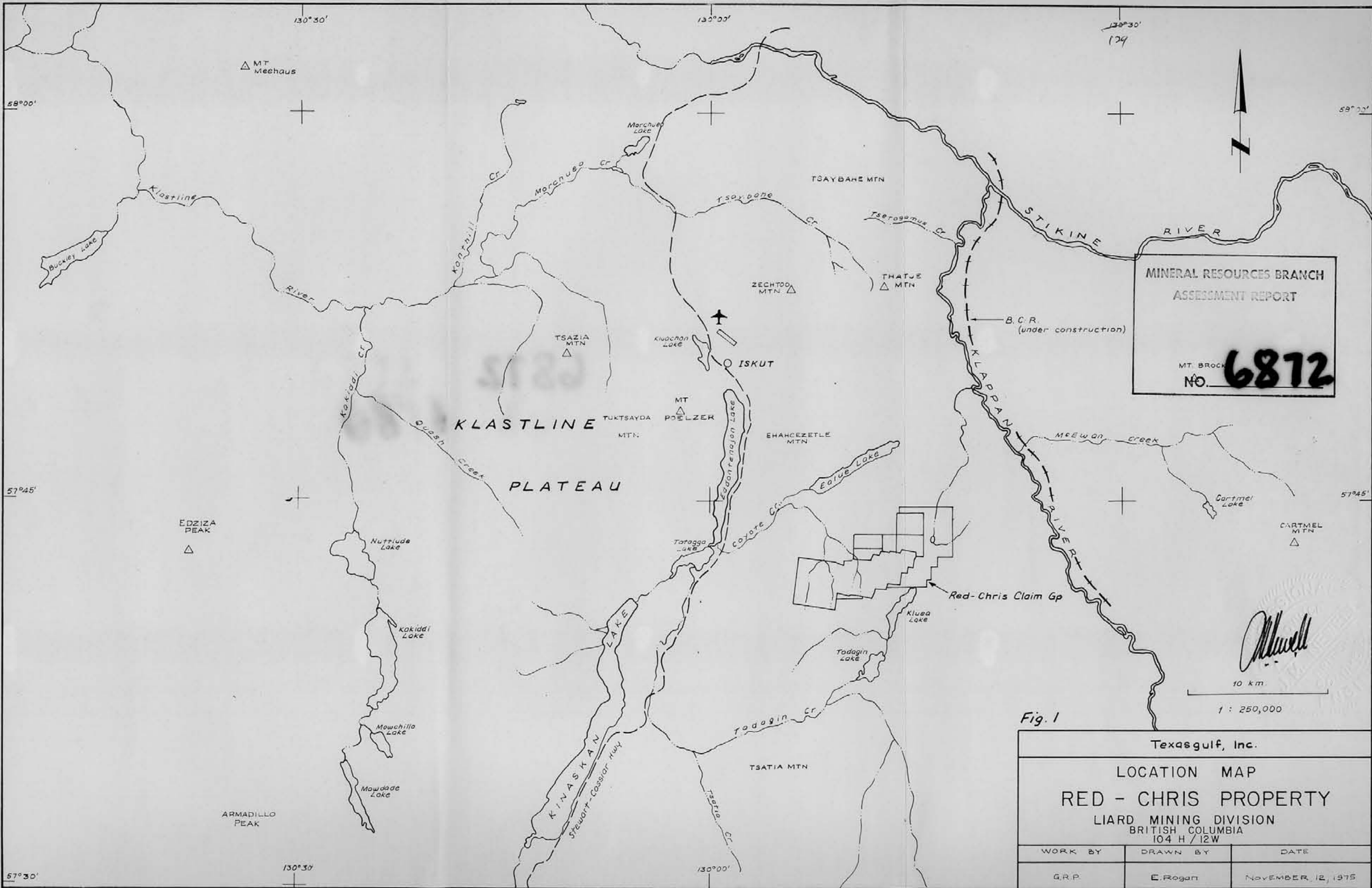
The Red-Chris property, comprising 241 mineral claims, fractions and MGS units, is located northwest of Kluea Lake, some 20 km southeast of Iskut Village at approximately latitude 57°45'N, longitude 129°45'W (see Location Map: Fig. 1 and Property Claim Map, Fig. 2).

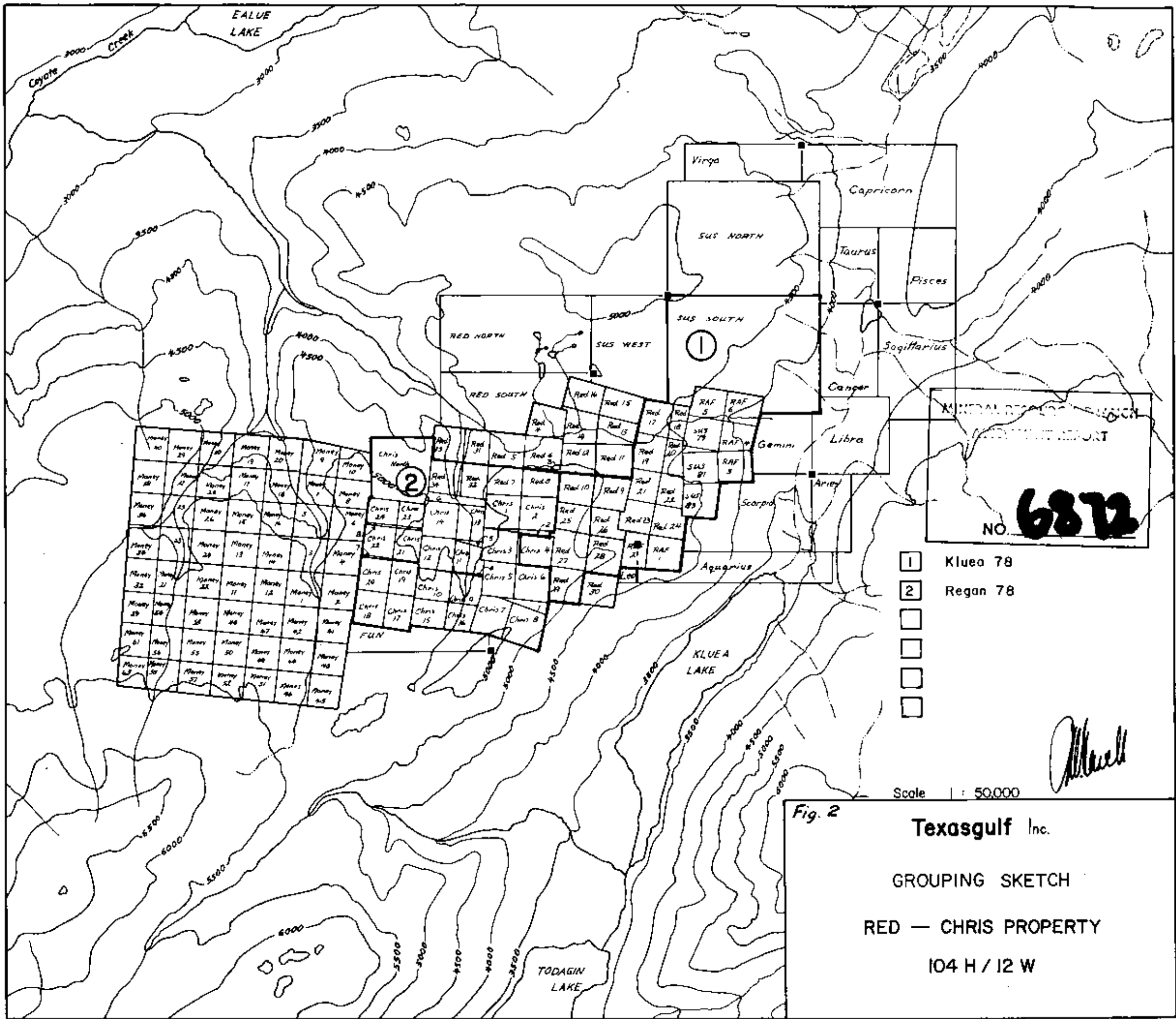
Access is by helicopter from the Stewart-Cassiar Highway at Tatogga Lake or Eddontenajon, or by bulldozer trail leading southward from the B.C. Railway access road west of Ealue Lake. This trail is passable for tracked vehicles only.

### HISTORICAL OUTLINE

Mineral showings have been known for many years in the area lying between Kluea and Ealue Lakes. The present phase of exploration activity on these prospects began in 1969, when Great Plains Development Company of Canada Ltd. located the Chris and Money claims. Programmes of geological mapping, geochemical soil sampling, magnetic and induced polarization surveys, followed by trenching and diamond drilling, totalling 1230 metres in ten holes, were completed by Great Plains during the period 1969-1972.

The Red and Sus claims were located by Silver Standard Mines Ltd. in 1970. Geological, geochemical and geophysical surveys, followed by bulldozer trenching were completed in 1971.





MINERAL RIGHTS SEARCH  
 REPORT  
 NO. **6872**

- ① Kluea 78
- ② Regan 78
- 
- 
- 
- 
- 

Scale | : 50,000

*McNeill*

**Fig. 2**  
**Texasgulf Inc.**  
 GROUPING SKETCH  
 RED — CHRIS PROPERTY  
 104 H / 12 W

Ecstall Mining Ltd., now Texasgulf Canada Ltd., became interested in Silver Standard's property in 1973. An option agreement was negotiated and a percussion drilling programme, totalling approximately 900 metres in 14 holes, was completed.

Initial results were encouraging and a more thorough exploration programme was proposed. In 1974, an agreement was negotiated with Great Plains whereby the Chris and Money claims were pooled with the Silver Standard and Ecstall holdings. During the period 1974-76 further geological, geochemical and geophysical surveys were undertaken and a total of 67 diamond drill holes and 30 percussion drill holes were completed, aggregating 12,265 metres and 2,280 metres respectively.

As a result of this work, two zones of significant copper-gold mineralization were outlined; the broad, low-grade Main Zone and the much smaller, but higher grade East Zone. Commercial production from these zones was not feasible under economic conditions prevailing in 1976, but it was apparent that the potential of the property would be enhanced if the tonnage of higher grade material, accessible to open pit mining, could be increased. To this end, a programme of bedrock surface geochemical sampling was completed over the Main Zone in 1977 in an attempt to define higher grade zones at the sub-outcrop. Anomalies defined by this work were tested by the 1978 drilling programme forming the subject of this report.

#### 1978 DIAMOND DRILLING PROGRAMME

Results of the 1978 diamond drilling programme were disappointing. No high grade mineralization, comparable in tenor to the East Zone, was intersected.

Geological and assay data are summarized in the drill logs included as Appendix A of this report.

Drill hole collar locations relative to claim boundaries and previous

38,000 E

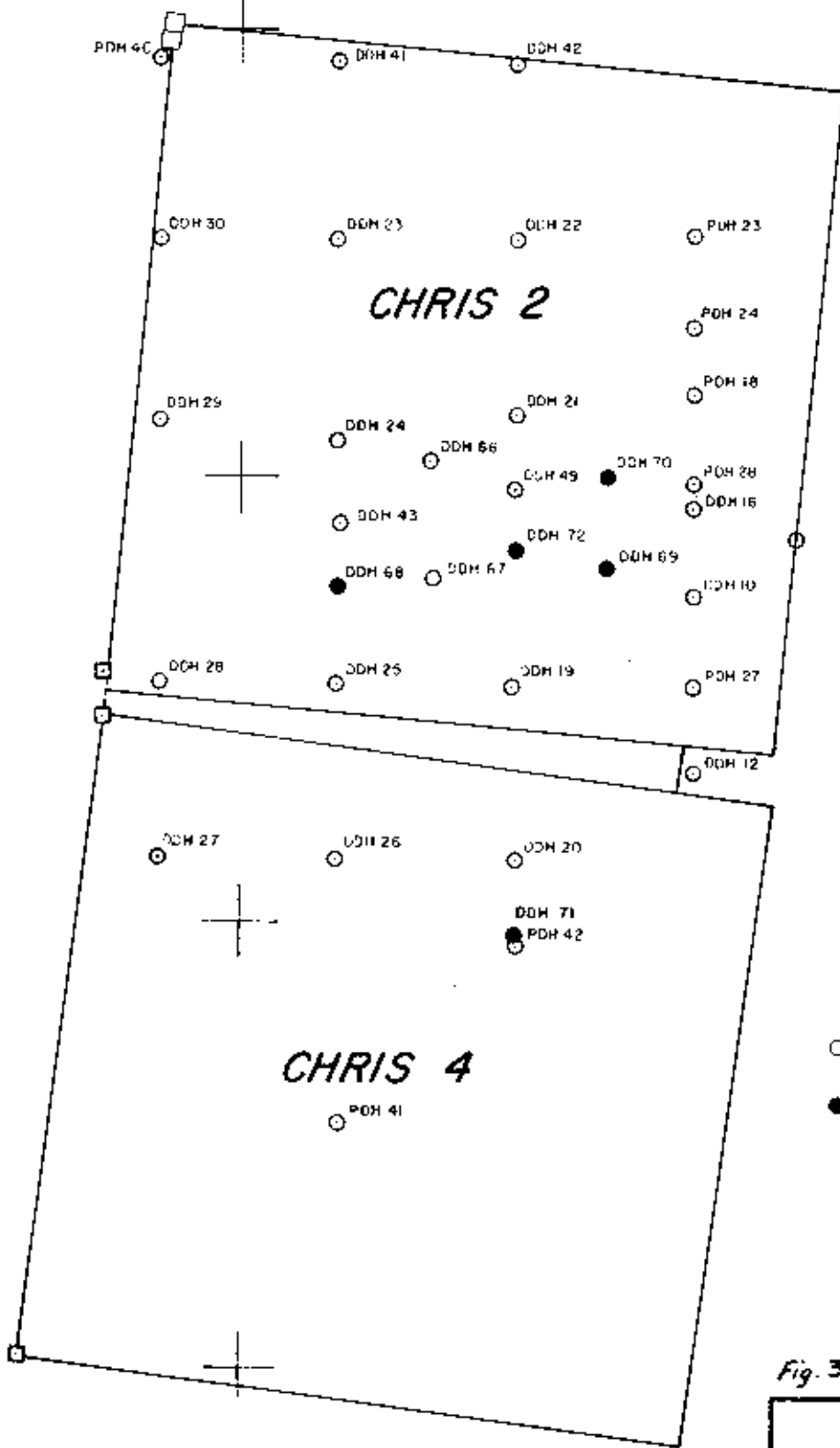
40,000 E

257,000 N

256,000 N

255,000 N

254,000 N



- Holes drilled prior to 1978
- 1978 drill holes

*McNeill*

Fig. 3

<b>Texasgulf Inc.</b>			
<b>RED - CHRIS CLAIMS DRILL HOLE LOCATIONS</b>			
WORK BY	DRAWN BY	DATE	DRWG. NO.
	E.R.	11 - 7 - '78	
Scale in Feet			

drill sites are shown on the Drill Hole Location Plan (Fig. 3) following page 2. It should be noted that core was logged in Imperial units, to conform with data obtained prior to metrification.

All core, from this and previous drilling programmes, is stored at the camp site, on the property.

#### CONCLUSIONS

1. The new data obtained in 1978 do not alter earlier geological interpretations in any significant way, however they do indicate that higher grade mineralization intersected at depth in earlier drilling on the Main Zone, cannot be projected upwards to the sub-outcrop.
2. The estimated tonnage of mineralized material available to open pit mining on the Main Zone, has been reduced by approximately 4%, the average grade remains unchanged and the stripping ratio has become slightly less favorable.
3. The Red-Chris Property remains a significant copper resource, but cannot be considered an ore reserve under prevailing economic conditions.



J.M. Newell, P.Eng.



BIBLIOGRAPHY

- Chaplin R.E.     Assessment Report 3202 1971  
Report on Induced Polarization Survey,  
Red & SUS Mineral Claims
- Forsythe, J.R.   Assessment Report 5741 1975  
Report on Geophysical Surveys, Percussion & Diamond  
Drilling, Chris, SUS and Red Mineral Claims
- Forsythe, J.R.   Assessment Report 6489 1977  
Report on Geochemical Bedrock Surface Sampling and  
Induced Polarization Surveys, Red, SUS, Chris &  
Money Mineral Claims.
- Forsythe, J.R.   Assessment Report 5297 1974  
and  
Peatfield, G.R.   Report on Percussion & Diamond Drilling,  
Chris, Red & Cougar Mineral Claims
- Leitch, C.H.B.   Assessment Report 6111 1976  
and  
Newell, J.M.     Report on Diamond Drilling  
Red & Chris Mineral Claims
- McAusland, J.H. Assessment Report 3044 1970  
Report on Geochemical Soil Sampling  
Survey, SUS Mineral Claims
- Panteleyev A.    "Chris, Red, SUS, Windy Property," Geology  
in British Columbia," B.C.M.M. 1975.  
  
"Red-Chris Deposit"  
Geological Fieldwork, B.C.M.M. 1976.
- Reynolds, N.W.   Assessment Report 2164 1969  
Report on Geochemical Soil Sampling  
Survey, Money Mineral Claims  
  
Assessment Report 2165 1969  
Report on Geological Survey,  
Money Mineral Claims.
- Seraphim, R.H.   "Structural Settings: Porphyry Deposits of the  
and  
Hollister, V.F.   Canadian Cordillera". C.I.M. Special Volume 15, 1976.

APPENDIX A

DIAMOND DRILL LOGS  
Holes 68-C78 to 72-C78

PROPERTY: CHRIS  
 LOCATION: L302 E, 255,775 N

# TEXASGULF INC. DRILL HOLE LOG

AZIM: 180° ELEV:  
 DIP: -45° LENGTH: 307'  
 CORE SIZE: 80

T23 DIP TEST

STARTED: JUNE 4<sup>th</sup> 1978 5: P.M.  
 COMPLETED: JUNE 5<sup>th</sup> 1978 10:30 A.M.  
 PURPOSE: To test a 6600 ppm. Cu geochemistry overburden result for mineralization at shallow depths.  
 CORE RECOVERY: Excellent

FOOTAGE	READING	CORRECT	FOOTAGE	READING	CORRECT
307'	38'	31'			

CLAIM NO:  
 SECTION: L302 E  
 LOGGED BY: H.R. SCHMITT  
 DATE LOGGED: JUNE 5 - JUNE 7 1978  
 DRILLING CO: D.W. CORTES ENTERPRISES LTD.  
 ASSAYED BY: BONDAR - CLEGG LTD.

TEXTURE, ALTER'N, MINERALIZATION, ETC.	GRAPH. GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS	
			FROM	TO				Cu	Au
		Hole collared and drilled through overburden to about 12.5'							
		BOX 1 : 12.5 - 35.9 feet.							
Very finely disseminated pyrite 15' and sp. more abundant with hematite pyrite, decreases near 20'		From 12.5' to 13.0 hole collared in pale grey white speckled pyritic senescent ho-fspar intrusive, changing to moderately hematitic, darker zone at 13.0' to 16.4'. Some former very alt <sup>is</sup> (?) brax? near 19'. Trace gte vning, some with wispy hem, tr. cpy. H6' Fspar 1-3mm bluish green laths in pale grey to yellow-buff mx often with very fine pyrite, hematite. Limonite - oxidized fractures to ~ 10' depth.	12.5	20	90%	0.25%	1326	0.23	0.002
Very finely dissem. pyr, also hematite concentrated. Tr. cpy.		20.1' to ~ 24.5' consists of a moderately fractured light grey white, pyritic intensely alt <sup>is</sup> intr., appearance of pale yellow-buff mx. near 25'. Brkr in fault with carbonaceous mx, tr. cpy.	20	30	85%	0.2%	1327	0.34	0.002

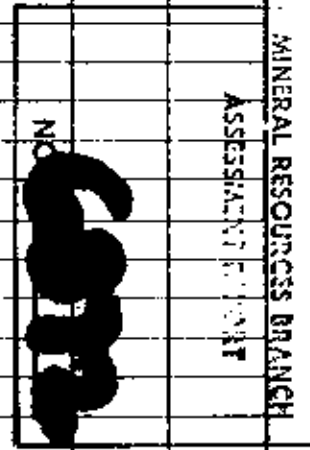
TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS	
			FROM	TO				Cu	Au
Minor py. tr. cpy. locally		24.5' to 27' consists of a greyish highly alt <sup>d</sup> phase with banding, containing wk. gr veining and pyrite blotches. Stringers Tr. cpy.							
gr veining wk. with minor py. cpy.	30	Past fault at 27' rock assumes a pale buff to greyish green mass color with few gr veins tr. cpy. some pyr. chl. on fractures, also wk carbonate veining. wk. dissem. hem. near 30'. Alt <sup>d</sup> essentially destroyed original rock texture.							
Moderate gr. vein with sericitic carbonate overprint. cpy. vein ~ 1-3mm wide minor cpy. usually very fine.	35	27' to end of box, pale yellow buff with grey to bluish green (partly destroyed) hb, fipar. KAl to 3mm, wk. to mod. gr streak, but thin veins with blotchy yellow alt <sup>d</sup> after. Tr. hem., cpy. locally to .5% (?).	30'	40'	99%	0.25%	1328	0.67	0.002
		<u>BOX 2 35.9' to 58.6'</u>							
Minor pyr. str. & with tr. cpy. in gr. vein.	40	Box starts continuing in very alt <sup>d</sup> mod-wkly gr. vein, intr. with patchy yellow alt <sup>d</sup> . Dark patches with fine pyr. also have minor cpy. Slight increase in gr veining to 40' with minor hem.							
Pyrite in stringers and dissem., cpy. mostly in gr. veins.	45	From about 40' to 48.9', the core is mainly a light greyish-green wkly. gr. and carbonate vein phase with sporadic hem. pyrite increases in abundance to about 10% but occurs as speckled blotches of very fine material, often with tr. cpy. near gr. veins.	40'	50'	99.5%	0.1%	1329	0.25	0.002
Dissem. hem., pyr. tr. cpy. Pyr. etc. on fracture. gr. vns. decrease to 56'.	50	From 48.9' to about 52' the amt. of pyr., carb. and gr. veining decreases and the rock appears a pale yellowish-green with numerous (1-3%) hematite speckles, rare gr. vns with cpy., pale yellow brown (trachytoid) alt <sup>d</sup> hls. at about 40-50' to core axis.							
	55	51.8' to 55.8' Starts with ~6" of moderate 40-50' gr. veining (1-3mm wide vults), but decreases, in an orange-brown colored phase with 1-5% hem. speckles. Green sericitic blotches appear towards the end.							
Very wk. min. and veining.	60	55.8' to 58.6' at end of box consists of same rock, only a pale yellow-green-grey highly alt <sup>d</sup> zone with few hem. speckles, and little veining of any type. Minor hem. in carbonate veining.	50'	60'	99.5%	0.1%	1330	0.20	<0.002

No. 68 C78  
 TEXASGULF INC.

TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS					
			FROM	TO				Cu	Au				
Wk grt carb. vms. 60		<u>BOX 3 58.6' to 81.7'</u>											
Tr. cpy. ~ 5% py		Starts same as end of last box, grt vms & carbonate units increase gradually to ~61', similarly py. cpy increase in vms. Minor hem.											
Tr. black mineral covd		61 to 65.2' Moderate to locally intense sthkw of grt vms, E abund.											
32 sph. in gr vms.		cpy. x-cut by later pyr str x-cut by later carb units. Rock pale yellow-grey sericitic all <sup>s</sup> py. also hem. specks & tr. cpy in cracks.	60'	70'	99.5%	0.4%	1331	0.41		0.009			
Cpy locally 2%	65	65.2 to ~71.0' moderate grt sthkw, general lack of carbonate vms. rock is more yellowish with greyish greenish py. str. & with cpy. grt vms with black mineral (ferrous) rosettes not uncommon.											
Cpy in grt vms also dissem. Texas riverite		hem increases.											
	70												
		<u>71.0' (after fault) to ~77.5'</u> consists of moderate to intense grt sthkw vms in an orange-brown hematitic (after magnetite) mottled to fsp py. almost no carb units. Good cpy. min. locally to 3% (?) in whitish grt (carb?) units in centers of grt vms. These later x-cut and sometimes offset up to 1cm by pyr. stringers on fault. Cpy also to minor extent on fractures. Sthkw decreases around 77.5'.	70'	80'	99%	0.45%	1332	0.33		0.014			
grt vms sthkw cpy in vms and dissem.	75												
		<u>77.5' to end of box.</u> rock changes quickly to a speckled greyish-hematitic then to greyish green massive, unoxid phase with parallel striated pyr. str. however erratic good cpy min. dissem and in greyish blotches, often assoc. with hem.											
Pyr str. parallel to cu. minor cpy.	80	Continues into next box.											
		<u>BOX 4 81.7' to 103.9'</u>											
grt vms and siliceous bands, cpy. py.	85	About 82' grt vms sthkw increases to weak to moderate intensity with very very fine dissem. cpy. py. locally to 10%. Rock generally greyish buff, takes on a banded appearance in areas where grt vms. are more siliceous parallel zones. E. with hem (83'-85'). Sthkw decreases at 87', although abundant dissem. py. continues in highly all <sup>s</sup> rock to about 96'. This rock is generally light greyish buff with ghostly whitish fsp. xal relicts. Pyrite is locally up to 20% and does contain very fine dissem. cpy. although grade difficult to estimate. Certainly py:cpy at least 25:1. Although grt vms. rare the rock is generally siliceous and highly sericitic.	80'	90'	99.8%	0.4%	1333	0.32		0.002			
much fine dissem. py with v. fine gr. cpy.	90												
	95												

MINERAL REPORT NO. 1333

TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS			
			FROM	TO				Cu	Au		
96 Moderate dissem py and cpy also. E Siliceous zones.		From 96' to the end of the box at 103.9' the rock is generally uniform in appearance, a light grayish to buff, slightly mottled looking, siliceous and pyritic phase, with a pale yellowish buff matrix in places. Veins generally lacking, but abundant dissem. pyrite (8-20%) with erratic but pervasive, very fine dissem. cpy, generally in grt zones (veins that didn't quite make it?). Lack of hematite and very little carbonate material.	90	100	99.9%	0.25%	1334	0.16	0.002		
100 Whitish carbonate xls mostly barren, some occupying former grt vns spaces(?) plus min cpy.		<u>BOX 5 103.9' - 127.3'</u> From 103.9' to 117.6' the color is mainly a light to moderately light grayish-green, becoming more buff colored towards 117'. There are generally no grt vns, although carb. vns do exist erratically, a minor amt with cpy min., some rare siliceous-py-cpy zones. On the whole, rock very well alt <sup>d</sup> , pyrite locally to 20%, with pervasive but difficult to discern mixture of cpy grains within.	100	110	99.9%	0.2%	1335	0.19	0.003		
110 Dissem. py & very fine cpy.											
115 Hematitic rock, dissem. py & cpy. Magnetite mostly → spec/hem. Section 117.6-125' grades = .5-.7% Cu.		117.6' to about 123' consists of an orange-brown variegated, mottled, hematitic phase of alt <sup>d</sup> ls. f. spar py. Rare, skinny grt vns exist with conspicuous cpy. X-cut often by py stringers. Rock looks possibly brecc <sup>d</sup> in places but intense alt <sup>d</sup> largely obscures textures. Spec. oft. after magnetite. Pale greenish f. sp. calc may be surrounded by whitish ghostly rims in an orange brown f. gr. mtk. Cpy min locally to 2% over several inches.	110	120	99.5%	0.2%	1336	0.33	0.002		
125 Weak - mod gr vns 100-90' with cpy.		123' to 127.3' at box end varies little from previous section except the color is more greenish, less mottled and less orange, hematite drop off except for 125.5' to 126.5' where it is ~ 15-20%, and here is a short 2' section of moderate grt vns streak with cpy. Streak decreases after hem. zone.	120	130	99.9%	0.2%	1337	0.25	0.002		
130											



TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH. GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS					
			FROM	TO				Cu	Au				
		<u>BOX 6 127.3' to 150.5'</u>											
130 qtz viny, clastic but not really brecciated, contains cpy in vns, tr in mtk		127.3' to 134.5' generally mottled buff grey to grey-green siliceous with med-intense qtz in streak near end, beginning has 1955 qtz vns but more hematitic blotches with disseminated cpy.	130	140	100%	0.25%	1338	0.31	0.002				
135 Weak qtz viny, minor cpy speckled hem.		134.5' to 140.8' the rock changes to a creamy buff to pale orange-green phase, locally with hem/magn concentrations. Wk qtz streak with pervasive minor cpy mineralization.											
140		140.8' to 142.1' contains a darker greenish mod. int phase of intrusive with sparse, almost hairline qtz vns with cpy. Some magn then E. disseminated cpy.											
145 Weak qtz viny, increase in disseminated hem to 20% locally, "bleached" qtz-hem vns with good cpy min.		At 142.1' this phases into a blocky, subangular light greenish grey to greenish yellow to grey-hem-green rock, with numerous indistinct qtz vns/zones with cpy finely disseminated in vns and near hem scattered nearby.	140	150	99.9%	0.25%	1339	0.39	0.002				
150		From 146.5' to end of box the rock again changes to a darker greenish-orange (grey-buff blotches rarely) moderately hematitic and weak to moderately parallel veined (qtz) weakly mineralised phase. a 6" zone of streaking (JUN) at 148.2' may be a reactivated fault?, has good cpy min.											
		<u>BOX 7 150.5' - 173.8'</u>											
155 Barren Carb. vns. Wk viny and min.		Hematitic zone continues at end of last box to large (1") barren carbonate vns. at 154.8'.											
160 Good qtz vns (2 mil) 160 streak with minor cpy min.		After 154.8' to ~160' the rock seems to remain the same but without the hematitic orange-brown coloration, instead it is more light greenish grey with more darker and lighter patches depending on amt of hematite present. Wk qtz viny becomes moderately intensive near 160.	150	160	100%	0.3%	1340	0.36	0.002				
165		Good qtz streak with ~15% hem continues to about 162', has good pervasive but very fine cpy lpy disseminated. Py-cpy ~ 5%.											

MINERAL RESEARCH ASSOCIATION  
 NOTED

TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS				
			FROM	TO				Cu	Au			
165 Weak gr vein, tr. dissemin cpy in hem zones and gr vns	165	From 162' to end of box, there is weak gr vein intensity, with occasional carbonate veining, and occasional pyrite stringers. Alteration is generally weak/moderate to strong and largely obscures the original textures although AS and fischer phenol are visible as patchy relicts of greenish white to pale brownish-pink (sericite). Colour varies from light green-grey to pale orange-brown green, often appearing blotchy or patchy in several inch long segments.	160	170	100%	0.12%	1341	0.26				
170 Carbonate veining and gr veining relict. Cpy min decreases. Py decreases also	170	There is very little mineralization. Cpy is mostly dissemin in orange (hem) alt <sup>2</sup> phase and adjacent green-grey zones, also dissemin in gr veins in these zones. Pyr. stringers & dissemin is ubiquitous.	170	180	99.9%	<0.1%	1342	0.16		<0.002		
180	180	<u>BOX 8 173.8' - 196.4'</u> 173.8 to 178.7 continues as before with gr vns decreasing in abundance. Cpy min. usually relict, assoc. with hem speckles. Carbonate veining increases to minor shear at 180.5'										
185 Carb. vns Gen. BR. salt with cpy	185	180.5' to about 190.5' continues in a dominantly pale greenish-grey alt <sup>2</sup> phase with a 2-3' zone of fracturing and carbonate vein block in the middle at ~185'. Rare gr vns and little hem or pyr. coincident with tr. cpy.	180	190	99.5%	<0.1%	1343	0.18				
190 Weak to mod. gr veining with dissemin cpy	190	After 190.5' there is a renewed intensity in gr veining and cpy min. there is also a change from predominantly green-greyish colored rock to an orange-green then orange-brown colored alt <sup>2</sup> phase. Hem speckles and vns increase as do pyrite stringers. Continued to end of box.										
195 Weak gr veining with sparse cpy	195	<u>BOX 9 196.4' - 219.0'</u> Box 9 continues in much the same orange-green weak to moderate gr vns rock, to about 206' where it phases out. Overall gr vns appear generally parallel with s.w. angles of 40°-60°. Greenish-grey patches in core (2mm) are due to kinetic alt <sup>2</sup> around fil. or concentrations of dissemin. pyr.	190	200	100%	0.2%	1344	0.18				
200	200											







TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPHIC GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS				
			FROM	TO				Cu	Au			
235 Moderate grt vein (2mm- 1cm) stauk, 1cm, minor cpy.		From 235' to 240.9' there is a section of orange-brownish-green altered, moderately grt vein stock-worked barite alt'd hb-fsp ppy with minor cpy. Py also in grt veins and on fractures.	230	240	100%	0.20%	1348	0.15				
240 Variable 40-70° contact		Cpy. min. appears to increase slowly until contact at 240.9' with a relatively barren medium green colored speckled hb-fsp ppy grey-green sbs and pale green-white fspars are set in a mtx of aphanitic light greenish-white grey material, very milky alt's. The rock is strongly magnetic, and lacks almost all veining and mineralization.										
245		<u>BOX 11 243.0' - 265.2'</u>	240	250	100%	<.1%	1349	0.04				
Barren phase ppy Very minor pyrite no cpy.		This entire box consists of subtle varying shades of greenish to (pinkish) green-grey buff, weakly alt's "barren-phase" hb-fsp ppy. There is an occasional grt and carbonate vnt but these were not observed to contain cpy.										
255	no-fsp	Hornblende are generally euhedral 1-4mm laths exhibiting a trachytic texture locally, and milky altered to a mixture of sericite-magnetite and possibly chlorite. Fe spars are euhedral whitish-green phenocrysts to 3mm randomly oriented. Mtx is generally an aphanitic greenish grey.	250	260	100%	<.1%	1350	0.03				
260	Barren											
265		<u>BOX 12 265.2' to 288.8'</u>	260	270	100%	<.1%	1351	0.02				
270		Continues in moderately fca, greenish-yellow-grey "barren" hb-fsp ppy. a few carbonate vnts and grt vnts, but nothing of significance. At 269' this changes gradually into a more altered "barren" phase.										

MINERAL RESOURCES BRANCH  
 ASSESSMENT  
 DIST

TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH. GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS					
			FROM	TO				Cu	Au				
270'													
275'		At 269' the porphyritic rock changes into a lighter greenish-grey to pale brownish-pink-green grey phase. It is characterized by decrease in magnetic character, increase in pyrite and gr. volts (still sparse), and pale brownish-pink trachtyrid + 4ma. Sienite hornblendes. Feldspars are indistinct glossy relicts. Hb. often have pyrite grain trains through the vol, parallel to c-axis. Continues to end of box.	270	280	100%	<.1%	1352	0.02					
280'													
285'			280	290	100%	<.1%	1353	0.02					
		Box 13 288.8' - 307.0 E.O.H.											
290'		This box contains in the same rock as above, with slightly varying shades of buff to pale green alteration, pyrite stringers increase marginally, as do carbonate volts. Essentially unmineralized throughout its length, even though some zones are weakly silicified.											
295'			290	300	100%	<.1%	1354	0.02					
300'													
305'			300	307	100%	<.1%	1355	0.01					

NO. 13  
 MINERAL RESOURCES BRANCH  
 ASSOCIATED WITH DMR



PROPERTY: *RET-CHRIS OPTION*

LOCATION: *388 E 2558+00 N.*

# TEXASGULF INC.

## DRILL HOLE LOG

HOLE NO. *DDH-69-C-78* PAGE NO. *1*

AZIM: *180°* ELEV: \_\_\_\_\_  
 DIP: *-45* LENGTH: *306'*  
 CORE SIZE: *BQ. 4 1/2" I.D.*

DIP TEST

FOOTAGE	READING	CORRECT	FOOTAGE	READING	CORRECT
<i>306</i>	<i>40°</i>	<i>32.5°</i>			

STARTED: *June 5 1978 3:00 pm*  
 COMPLETED: *June 6 1978 6:00 a.m.*  
 PURPOSE: *Test for higher grade mineralization beneath geochron anomalies on intermediate section*  
 CORE RECOVERY: \_\_\_\_\_

CLAIM NO: \_\_\_\_\_  
 SECTION: *L. 388E.*  
 LOGGED BY: *J.M. NEWELL*  
 DATE LOGGED: *6-7 JUNE 1978*  
 DRILLING CO: *D.W. COATES ENTERPRISES*  
 ASSAYED BY: *BONDAR CIEGG LTD.*

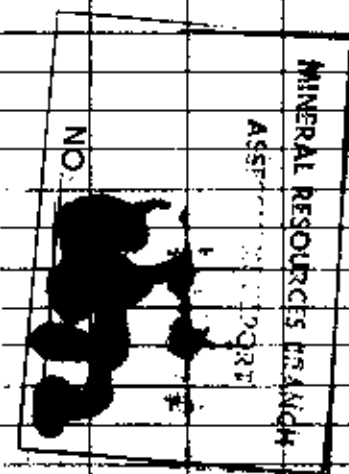
TEXTURE, ALTER'N, MINERALIZATION, ETC.	GRAPH. GEOL.	DESCRIPTION	FOOTAGE		EST. GRADE	SAM. NO.	ASSAYS	
			FROM	TO			Cu	Au
		<i>Hole drilled through overburden to 28.0</i>						
		<i>Box 1 28.0 - 51.5</i>						
<i>wt. glaucous earth minerals by clots after hb. Scattered dissem.</i>		<i>Hornblende Feldspar Porphyry Pale orange buff porphyry speckled with lim. alter mafics. To 35.5' rock is broken with abundant w. dev. gouge, probably a weak fault zone.</i>	<i>28.0</i>	<i>40.0</i>	<i>90%</i>	<i>&lt; 1.</i>	<i>1356</i>	<i>0.05</i>
<i>Strong py (25-30%) in qtz. bz zone</i>		<i>Silicified breccia vein at base of broken section. Below 35.5' rock less broken, limonite stain weakens rapidly, disappearing @ 40'. Porphyry mod alt. hb. still clearly visible though sericitized. Weak fractures developed with preferred orientation @ 50.</i>						<i>0.002</i>
<i>qtz. py. min. clots, occas. sp. Barren carb. m. lks py. dissem. in clots</i>		<i>Fracturing &amp; weak qtz. veining rarely developed.</i>	<i>40.0</i>	<i>45.7</i>	<i>99%</i>	<i>&lt; 1.</i>	<i>1357</i>	<i>0.03</i>
		<i>v. wk 1/4 gouge @ 65' narrow fault bx</i>						

MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
 NO. **6872**

TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS					
			FROM	TO				Cu	Au				
		Alteration a strong increase approaching dike contact.											
Widely spaced carb veins & sp. pyrite		Biotite - Feldspar Porphyry. Archaic gray to buff gray post-ore slate with fresh biotite & wky alk fsp phases. Upper contact creamy buff chill zone.											
		Below 50 linearitic stain appears at first as envelope around carb veins then pervasive. Dike becomes less porphyritic. Lower contact somewhat obscure as rock becomes brecciated.											
		Box 2 51.5 - 72.5											
		Fault Gauge	53.5	60	97.5	0.15	1358	0.05					
Fragmentary py veins but fractures alk py only. Occas gls - py or variate remaining. Fairly dense sp. py. Lower to 59'		Sub-rounded fragments altered purple in weakly lim stained gouge matrix. Upper contact @ 50. Lower contact gradational to strongly fractured Hornblende Feldspar Porphyry. Alteration & fracturing decrease up to 58.0, but slight increase in gls remaining to 51.2. Rock becomes fine grey slightly mottled porphyry with weak veining.								0.002			
		1/4' gauge @ 62' @ 90'											
sparsely veined sub-massive decomposed matrix		40' piece of rock became distinct	60.0	70.0	94	0.15	1359	0.07					
		12' fault gauge @ 90'											
long sparse carb veins		Biotite - Feldspar Porphyry dike, slightly less porphyritic and more variable in colour than dike @ 50'. Much of section buff grey but irregular patches dark greenish grey fresh rock near centre of section lower contact: v. faint gauge											
		Box 3: 72.5 - 95.5											
1-3% py in fine veins & disseminated v. fine		Hornblende Feldspar Porphyry light greenish grey slightly mottled porphyry rock massive and only sparsely fractured.	76.0	80.0	100	0.15	1360	0.09		0.002			

FEDERAL RESOURCES BRANCH  
 ANALYTICAL REPORT  
 NO. 1358

TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS			
			FROM	TO				Cu	Au		
		narrow zone change of veining	80.0	90.0	99.5	0.15	1361	0.12	0.003		
Hardly py. much as line fractures & dissem. sparse sp.		rock becomes more buff in color, but continues essentially same with v. weak fracture development									
	55°										
mod. R. strong sp. in qtz veins	15°	4' dike of Brakite Feldspar replacing @ 55° followed by weakly developed crush zone. Quartz veining stronger adjacent dike									
	25°										
py. sp. much dissem & on frac discontinuous scattered		massive weakly fractured, pale gray mottled porphyry continues v. narrow crush & gouge zone to 92.5' Box 4 95.5' - 117.5'	90.0	100.0	99.0	0.1	1362	0.13	0.004		
	35°										
	35°	narrow gouge zone @ 35°									
	35°	12" dike pale buff almost opaque Brakite Feldspar Feeph @ 35° followed by zone of broken core and narrow fault gouge in 38'									
slight increase qtz veining mainly pyritic	38°										
	45°	increasing alteration, rock becomes more and more tend to be obliterated, but fracturing continues weak									
sparse sulphide min continues through fault zone	45°	Zone of fault gouge and crushed rock. Upper contact approx 45°. Strong to intense alteration	120.0	110.0	99.0	2.1	1363	0.13			
	45°										
v. sparse essentially mineralized on one side to dissem.	45°	Below fault zone rock becomes pale buff gray in color. Alteration mod-weak. Feldspar remains but mafics obliterated. Occasional well developed qtz-sulphide veins very widely spaced, continuing to end of Box 4.									

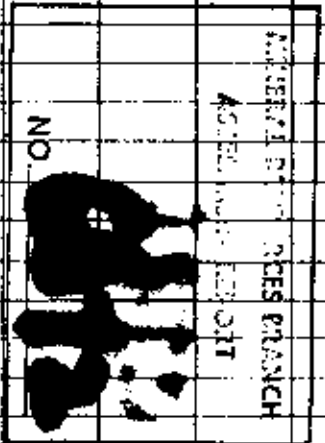


TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH GEOL.	DESCRIPTION	FOOTAGE		REC'D	EST. GRADE	SAM. NO.	ASSAYS			
			FROM	TO				Cu	Au		
			110.0	120.0	100.0	<1	1364	0.13	0.004		
wt. py. mac. concs sp. observed		<u>Box 5: 117.5 - 140.0</u> Hole continues in buff-grey mottled porphyry with very wide spaced quartz veins and generally sparse fracturing.									
wt. med. py.			120.0	130.0	100.0	0.1	1365	0.11			
Strong med. coarse py. staining, qtz veins cut by late py. stringers increasing sp. with py. tab. in inclusions and dissem.		fracturing increases, occurs hematite veinlets and irregular siliceous patches to 128'									
		131.5 fairly abrupt but nevertheless indistinct contact to (?) Barren Porphyry hematite feldspar porphyry. Rock much fresher and darker buff to greenish grey. Texture more distinct. Hematites altered to chlorite, partially replaced by pyritic aggregates. Fracturing very sparse. Occasional patches paler slightly more altered rocks, but sharp contacts lacking.	130.0	140.0	100.0	<1	1366	0.13			
py. mac. continuous on face fractures sp. concs present											
same zone mod. fine py. sp. veins cut by very coarse py. in.		wt. crush zone to 138 For 2-3' wt. becomes pinkish-buff & with fractured doubtful whether this section is true barren phase.									
		<u>Box 6: 140.0 - 162.0</u>	140.0	150.0	100.0	<1	1367	0.13	0.004		
py. mac. on face widely spaced fractures. Rare sp.		Box continues in dark hematite feldspar porphyry as in previous box. Very little quartz or carbonate veining. Subtle colour variations quite common.									

NATIONAL BUREAU OF GEOLOGICAL SURVEY  
 WASHINGTON, D.C. 20540  
 BRANCH



TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS				
			FROM	TO				Ag	Au			
strong py. mat ep. on qtz veins	155	locally strong qtz veining @ 2-35°	150.0	160.0	99.5	< 1.	1368	0.13				
Most min. cont as fine grained fractures but few dashes of dissem py-ep almost throughout	155	Rock continues quite fresh, massive and unfractured. Hb phenocrysts well preserved and altered to chlorite. Abundant finely dissem magnetite. Crinoidal porphyritic texture v apparent										
	160	Box 7 162.0 - 184.0	160.0	170.0	100.0	< 1.	1369	0.08				
crystic fractures, continue dissem sulphides v sparse	165	qtz veining almost perpendicular to hole.										
	170	as wt bleaching associated with carb veining.										
	170	immediately below 170 rock markedly less porphyritic for short section. Suggestion of irregular banding and slight increase in alteration, though matrix remain well preserved.	170.0	180.0	100.0	< 1.	1370	0.13		0.003		
min. remains mainly py. but not ep on qtz vms.	175	slight increase in qtz veining often @ shallow angle to hole.										
1-3% dissem py throughout, often replacing Hb. phen.	180											



TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS				
			FROM	TO				Cu	Au			
py dissec throughout concretion forming small chalc. & magnet py sp. mass & blebs and thin & curved sp		Box 8: 184.0 - 206.0 hornblende-felds por. Porphyry, typically fairly dark with crowded porphyritic texture, chloritized hornblendes and calc. & weak fracturing continuous in this box.	180.0	190.0	99%	<1	1371	0.18				
qtz veins very coarse sp. but mineralization diminishing, pyrite at least 25:1		At 190.0 alteration abruptly increases contact is a fine gr. py veinlet. Rock now pale grey buff. Texture preserved but mafic conspicuity altered to sericite. Qtz veining increases to weak-mod stockwork. Alteration increasing down hole, rock becomes pale creamy grey, mafic obliterated & fsp. strongly sericitized. Qtz veining decreases in strength below 195 but rock cut by network of fine mineralized fractures.	190.0	200.0	99.5%	1?	1372	0.23	0.010			
py stringers become much sparser, calc dissem py-sp common		1/4" gauge zone Pale grey slightly mottled porphyry continues, but lacks qtz veining. Fine pyrite fractures continue weakly developed.	200.0	210.0	99.5%	1	1373	0.11	0.002			
mod sp in fault zone @ 206		Box 9: 206.0 - 230.0 healed fault zone (?) ground core, followed by 5" wk crush breccia w carb veining. Below fault zone pyritic fractures increase and qtz veining reappears, largely in one direction but approaching mod stock intensity to narrow gauge @ 210. Below 210 fractures essentially pyritic.										
sp. sp. int. mod py in qtz veinlets.			210.0	220.0	100.0	1	1374	0.19	0.007			
sp. increases in bx section but fractures below essentially pyritic		Alteration increasing in (?) healed breccia zone. Faintly discernable fragments of qtz vein stockwork. Younger carb veins. Grading downwards to well fractured rock with occasional qtz vns. Wk to mod stock development below 217.5 continuing to 223.0. Spars irregular discontinuous hem stringers.										
HK stock - mainly pyritic, sparse sp												

INTERNATIONAL MINING BRANCH

TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS	
			FROM	TO				Cu	Au
alt veins carry and cp. but overprinted by py content which increases as zone widens		irregular qtz. vns and patches qtz flooding	220.0	230.0	100.0	0.35	1375	0.45	0.008
thin massive cp fractures only		138. stock zoning continues to sharp irregular contact with less altered, darker, greenish grey Barron Phase Hornblende Feldspar porphyry with rounded texture. Fracturing very sparse.	230.0	240.0	100.0	<.1	1376	0.05	
Simple qtz py. vein with calc. envelope by on fine fractures		Box 10: 230.0 - 252.0							
very sparsely disseminated cp on qtz-ben vein		Dark Barron Phase Porphyry continues. Hornblende only slightly altered to chlorite. Rock dull brownish grey in colour							
alt veins carry cp but py dominant like py sparse cp. dissemin.		a 2.35 contact on 40° fracture with pale quartz built and strongly altered Hornblende Feldspar Porphyry. Matrix largely destroyed. Feldspar recrystallized and texture becoming indistinct. Pyrite fringed with hematite. Fractures remain widely separated and very fine	240.0	250.0	99.5	<.1	1377	0.04	0.002
alt py. v. sparse on fine fractures and dissemin.									
stock m. az. essentially pyritic		Strong qtz on stockwork developed for approx 12"							
v. sparse py. m. az.									
course py on alt. vns. fine fractures remain pyritic. occas. v. fine cp.		late carbonate veins displace pyrite stringers. Noticeable increase in fracturing. No stockwork developed. Fairly close spaced pyritic fractures. Rock remains as before							

NOT  
 ASSESSMENT  
 MINERAL PRODUCTION BRANCH

TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS				
			FROM	TO				CU	AU			
Fair py sp. minz. in glz with minor siliceous and predominantly pyrite	115	Box 11: 252.0 - 276.0 Hole continues in buff-grey porphyry as previous box	250.0	260.0	99	0.1	1378	0.05				
generally weak py minz except in areas glz in which sp. present	115	Fracturing very weak. Irregular patches pale pink hematitic alteration of <del>glz</del> sp.	260.0	270.0	99	0.15	1379	0.04	0.002			
shaded with minor siliceous py but some fine sp. also present	265	@ 265.5 alteration increases with pale creamy grey in colour. Mod to strong glz vein stockwork developed over 3' section. Veins show preferred orientation										
generally weak py minz with occasional siliceous in glz areas	270	Below 270' veining decreases sharply.	270.0	280.0	99.5	<1	1380	0.04	0.002			
py sp. in glz carb. siliceous	275	Box 12: 276.0 - 299.7 Hole continues in buff-grey porphyry as before. Fracturing generally weak.										
to dissemi by sparse sp.	280		280.0	291.4	99.5	0.1	1381	0.03	0.002			
increased sp. in glz. in zones, sometimes quite coarse grained	285	@ 284 fracture density increases, intermittent strong glz vein development but generally with preferred orientation @ 45-55° to core. Fine pyrite veinlets also abundant.										
	285	Fracture density decreases sharply.										



MINERAL RESOURCES BRANCH

TEXTURE, ALTER <sup>n</sup> MINERALIZATION, ETC.	GRAPH GEOLOG.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS					
			FROM	TO				Cu	Au				
	60'	"Birds Eye" Dike... Dull grey-green post-ore dike with sparse calc veins and rare fine carbonate veins. Contact in to" with first few inches v. fine ground & pale buff in color.											
	299.7'	Box 13: 299.7 - 306											
	300'	"Birds Eye" Dike continues lower contact brecciated and veined with calcite.											
Ex-posed when dissem. next in purity develop gtz was	302.5'	Hornblende Feldspar Biotite. Med. altered pale greenish grey periphery Hornblende completely sericitized but clearly discernible. Strongly veined with carbonate immediately below dike & weak gtz in development.	302.5	306.0	100	0.15	1392	0.02	0.002				
	306'	End of Hole											



PROPERTY: RED - CHRIS  
 LOCATION: L 2560 N 3 L 388 E

# TEXASGULF INC.

2240 - 02 DDH 70 C78 1

## DRILL HOLE LOG

AZIM: 180° ELEV:  
 DIP: -45° LENGTH: 267'  
 CORE SIZE: 80

### DIP TEST

FOOTAGE	READING	CORRECT	FOOTAGE	READING	CORRECT
267'	40°	32.5°			

STARTED: JUNE 6<sup>th</sup> 10:45 a.m.  
 COMPLETED: JUNE 6<sup>th</sup> 10:30 p.m.  
 PURPOSE: To test for westward extension of 170+ mineralisation intersected in DDH 10  
 CORE RECOVERY: Generally excellent.

CLAIM NO:  
 SECTION: L388E  
 LOGGED BY: H.R. SCHMITT  
 DATE LOGGED: JUNE 7<sup>th</sup> - JUNE 8<sup>th</sup> 1973  
 DRILLING CO: D.W. COATES LTD  
 ASSAYED BY: BENTON - CLAY LTD.

TEXTURE, ALTER'N, MINERALIZATION, ETC.	GRAPH. GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS	
			FROM	TO				Cu	Au
		Hole collared and drilled to 28' in overburden.							
		<u>Box 1 28.0' - 49.5'</u>							
Weak to med. qtz vn stock minor cpy		28' to 37.5' consists of gneiss highly altered and moderately weathered to fine ppv with moderate qtz veins stockwork intensity. Pyrite on fract. and in qtz vns predominates although cpy is very finely disseminated in veins also. Some qtz-pyrite veins have minor cpy and tr. bp. the latter insignificant though. Alteration largely obscured textures of ppv.	28'	40'	80%	0.2%	1383	0.26	0.004
Altered to strong qtz vn stock minor cpy, tr. some.		37.5' to about 45' continues in a less weathered but still strongly altered moderately qtz vn stock zone with minor cpy, tr. bp.							

MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
 NO. 6872

TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPHIC GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS			
			FROM	TO				Cu	Au		
45		From 45' S end of box to 49.5' we rock becomes weakly veined and is a greenish-grey (brown) speckled phase with weak alteration. H2S are relatively fresh. Cpy common, weakly or not at all in stringers or hor.	40	50	40%	0.35%	1384	0.36	0.006		
50		<u>Box 2 49.5' - 60.8'</u>									
55	Low-moderate Qtz to streak with trsp.	Same rock type and alteration continues to ~ 51' where Qtz in streakwork increases to low moderate intensity for a few feet to ~ 55.5'. Cpy is absent throughout. Rock tends to show a more grayish-pink with quite grayish 'spots' with sparse cpy.	50	60	92%	0.3%	1385	0.28	0.004		
60	High Sulfidation Minor Hem.	After 55.5' the alteration changes 100%, and becomes more pink with brownish-pink sericitic sh near the end. A weakly siliceous zone exists after 65' - 67' with minor cpy. Occasional Qtz with carry over of trsp. cpy. The zone from 5-8' is weakly and only rare pale blue surrounding stringers.									
65	Siliceous zone High Sulfidation		60	70	96%	0.15%	1386	0.20	0.007		
70		<u>Box 3 60.8' - 91.0'</u>									
75	Sp. zone	60.8' to just B or B2 is about the same. The rock is a Qtz-free speckled with fine-grained pinkish-brown siliceous alteration and quite pale greenish-white slip matrix. There are traces of heavy brown copper secondary alteration locally. The Qtz veining is generally sparse, although some veins are up to 2cm wide. Light stringers occupy most of fractures and also around pits. No Biot (or other) inclusions do not appear to be a true mineral. Cpy is ubiquitous, as are chlorite and almost absent in quartz veins. Carbonate veins are rare.	70	80	98.5%	0.2%	1387	0.19	0.005		
80											

NO. [REDACTED]  
 ASSESSMENT FILE 07B  
 MINERAL RESOURCES BRANCH

TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH. GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS			
			FROM	TO				Cu	As		
		From 82 to 87' the rock remains - same, although secondary minerals become part of the matrix instead of being separate. After 87' to end of box at 91.0' the rock changes to a particular phase - matrix granular phase with occasional bluish colored spots at 88' and locally at secondary color. Cpy is common. In 3' units, also not uncommonly with fine stringers. Cpy generally - 15-25%	80	90	99%	0.25%	1398	0.22	0.007		
85 Blue-gray to steel with minor cpy.											
Secondary 3' zone thin str.											
		30X 4 91.0' - 114.1'									
		From 91.0 to 92.0' continued in same, bluish, very siliceous and partly more but part at 92-93' Cpy ~ 1%									
		After 93' rock changes to a pale greenish-grey highly siliceous phase with some cpy and rock matrix. Numerous small pyrite spots are not well developed. Cpy is fair in general. No iron pyrite.	90	100	99%	0.25%	1399	0.17	0.005		
85 Blue-gray to steel with minor cpy.											
		92.5' to 102.5' consists of a fairly siliceous (Si) brecciated matrix with some small pyrite spots in a pale greenish-grey matrix.									
		102.5' to 107' is siliceous greenish-grey. The matrix is moderate, well grained/siliceous, with abundant fine iron pyrite.									
		After the contact zone at 107' it remains more or less the same except for more granular character in abundance and the rock phase into a pale greenish-grey. In 3' units, also not uncommonly with fine stringers. Cpy generally - 15-25%	100	110	99.5%	0.1%	1400	0.30	0.005		
85 Cyan zone											
		Contact at 114' with pale greenish-grey phase with moderate cpy. Contact at 114' to 115' granular - siliceous matrix.									
		Contact at 115'									

MINING  
 AND  
 GEOLOGICAL  
 DEPARTMENT  
 1-17  
 1958









TEXTURE, ALTER'N MINERALIZATION, ETC. 220	GRAPH GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS					
			FROM	TO				Cu	Au				
		protoclin-green alt <sup>10</sup> . This could be a type of sericite or kaolinitic clay. Also appearing is the black unidentifed alt <sup>10</sup> mineral (hydrous??) seen prev. on this property & Great.											
Weak qtz in development in sp. some py 225 with moly sp.	X	Qtz veins are few but generally contain a bit of spy. Textures of the original rock are almost all destroyed but quartz relicts of hb and plug remain. Trace moly and br??	220	230	98%	0.1%	1402	0.06					
230		<u>BOX 10 230.3' - 253.2'</u>											
Occasional qtz or qtz-carbonate vein, ± k-cut by later carbonate vein and pyrite stringers. 235		This box continues in essentially the same type of rock, starting out as a greenish-grey slightly speckled moderately altered phase, becoming relatively textureless near 240'. At about 246' then grading gradually into a crumpled yellow-grey ls-fp ppy. Phaeospyrites are smaller than before, usually less than 2mm and most subhedral.	230	240	100%	4.1%	1403	0.05	-	0.002			
240		Mineralization is generally quite weak, confined to pyrite weakly disseminated or in stringers occupying former fractures. Spy very minor, usually in qtz veins, rarely with pyrite and on fractures. Trace of moly noted.											
245		Black-green patchy 'mottles' are mostly pyrite grain concentrations.	240	250	100%	5.1%	1404	0.06					
Trace carbonate units. 250													
255													

NO

TEXTURE, ALTER'N MINERALIZATION, ETC. <small>255</small>	GRAPH GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS					
			FROM	TO				Cu	Ag				
		<u>Box 11 253.2' - 267.0' E.O.H.</u>											
Qtz v. fine, pyrite str. and minor sph. to trace		Continues in a light olive-yellow grey hematite (5%) crinoid fsp - ls py to about 257-260' where the rock passes into a greenish grey more highly altered phase with increased pyritization and minor fracturing. Toward bottom of hole there is a weak narrow zone of silicification with minor sph and a narrow zone of fracturing with black pyritization(?) and material with pyrite and minor sph.	250'	260'	100%	40.1%	1205	0.06					
									0.002				
			260'	267' E.O.H.	99%	0.1%	1206	0.07					
		End of hole											

NATIONAL RESOURCES BRANCH  
 GEOLOGICAL SURVEY  
 WASHINGTON, D.C.



TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS					
			FROM	TO				Cu	Au				
		37-40' consists of a dark brownish green trachytoid crowded hb-fsp ppy. Also appear also to be moderately siliceous and may contain some chlorite? Since it is only weakly altered to fsp.	30	40	100%	40.1%	1428	0.01					
		40' to end of bar consists of relatively barren light yellowish-green trachytoid hb-fsp crowded ppy punctuated by more highly altered light yellowish-grey (with pinkish-brown conspicuous leucitic hbs) zones. Feldspars remain as greenish-white quartz relicts. Rare pyrite stringers exist.											
Pyrite int.		30X 2 44.5' - 67.4'	40	50	100%	40.1%	1429	0.01					
		Continued in light-yellowish-green alt <sup>h</sup> crowded ppy, grading at 48' into an orange-pink hematitic crowded trachytoid hb-fsp ppy. Hbs are up to 4mm long, altered to a pale yellowish grey sericite. Continue to 51' where the rock changes abruptly (over 2") into a rather uniformly colored light greenish-slate grey with yellowish-white to pinkish brown hornblende. The latter colored hornblende often contain											
Hematitic zone		hematite grains and are also assoc. with pyrite disseminations. This neck to moderate alteration continues to ~ 61.5' where some carbonate veining and weak silicification grades into a strongly silicified zone at 64'.	50	60	100%	40.1%	1430	0.01					
		Silicified zone continues to end of hole but no ppy was observed.											
Coar. with silicification													
		Silicified zone with somewhat parallel pyrite stringers on face.	60	70	100%	40.1%	1431	0.04	0.02				



TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH GEOL.	DESCRIPTION	FOOTAGE		RECY	EST. GRADE	SAM. NO.	ASSAYS					
			FROM	TO				Cu	Ag				
		<u>BOX 3 67.4' - 91.0'</u>											
Moderate silicification, pyrite, tr. cpy.		Box starts in greyish pyritic silicified zone and continues to about 75'. Pyrite occurs as blotches and stringers, often with minor cpy and black alteration material. All original texture of rock obliterated. From 75' to 77.1' silicification and mineralization decreases to 80' fault. After fault the rock remains a greyish green but is only weakly silicified and has less pyrite with only traces of cpy. Continues to 80' fault at 82.1'.	70	80	100%	0.1%	1412	0.11	0.002				
Weakly silicified zone minor py, tr. cpy.		82.1 to 86.2' relatively barren pale green buff to- fine py. alt <sup>d</sup> to pinkish sericite. Numerous hairline (variscite) fractures subparallel to c.a. with black alt <sup>d</sup> material, and minor pyrite.	80	90	100%	0.15%	1413	0.09	0.002				
Moderate then weak silicified zone, str. also cpy str and disseminated cpy.		86.2' to 91.0' starts out in a moderately silicified greyish-green pyritic zone, then decreases in silicification intensity to 91.0'. Pyrite content locally over several inches to 20% with good cpy mineralization. Mineralization also decreases to 91.0'.											
Extensive weak to moderate silicification with minor py and cpy.		<u>BOX 4 91.0' - 113.7'</u>											
		Continues in weak to moderately silicified zone with weak cpy to fault at 97'. Below fault at 97' is a breccia with siliceous grey pyrite (also minor cpy) fragments with whitish grey crumbly mtr. material between fragments.	90	100	90%	0.1%	1414	0.12	0.002				
		Following to 101' is a greyish siliceous and pyrite, altered, intensive, (minor cpy, and tr. moly? observed as well).											
		At 101' a "contact" with below to 103' a pink matrix, variegated greenish-yellow pyritic interlike, intensely alt <sup>d</sup> with no textures remaining. This grades at 103-105'.											

HONAY RANCH



TEXTURE, ALTER'N MINERALIZATION, ETC. 105	GRAPH GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS					
			FROM	TO				Cu		Au			
		into a paler grey green pyritic intrusive. This is not altered as intensely and some pale pinkish-brown qb. quartz relicts remain. Weak qtz vults appear locally as do pyritic fractures with tr. cpy.											
Fracturing and faulting with minor pyrite tr. cpy 110		Rock becomes more grey-speckled to buff-grey-white toward end of box. Faulted Breccia zone at 111'-112' has grey siliceous frag in a whitish kaolinitic-sericitic mtk. Occasional pyrite.	100	110	99%	40.1%	1415	0.08					
		<u>Box 5 113.7' - 137.0'</u>	110	120	99.9%	0.1%	1416	0.13		0.002			
Pyrite through- out box varies from 10% to 20% of rock tr. cpy		This box contains almost uniformly throughout a med-dark greyish-green pyritic quartz sericite alt' intrusive. Some sections may be marginally more silicified, or retain drab, quartz relicts of former xalt but generally, the rock is uniform. Small fault and brecciated zones are interspersed by weak development of vult. Pyrite occurs as vults or stringers, often with a trace of cpy.											
			120	130	99.4%	0.1%	1417	0.19					
		At 135' the rock becomes lighter, grey colored and amt. of pyrite decreases marginally. This continues to end of box where the rock begins to take on a weak buff appearance.											
			130										
			135	140	99.9%	0.1%	1418	0.21					
qtz vult frags & cpy. 140													

NON

140

TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS					
			FROM	TO				Cu		Au			
		<u>Box 6 137.0' - 161.0'</u>											
		137' to 141' is a pale greenish-grey buff with some intensely alt <sup>d</sup> pieces of ho <sup>1</sup> fsp. still visible. Some jte. vln frags. noted with cpy. Mostly a few pyrite str. on frag. and disseminations, tr. cpy, tr. moly in one place.	140	150	100%	0.1%	1419	0.15		0.002			
		At 141' core changes back to a greyish weakly siliceous, pyritic rock similar to most of last box however here there are carbonate vlns present. This continues to carb. note box at 146' where rock following is a lighter grey with substantially less dissem. pyrite and fewer siliceous zones. Rock has a more mottled appearance. Continue to siliceous zone at 152-153' after which the rock is very pyritic, locally to ~ 25% pyrite, continuing to ~ 156' where the amt. of pyrite decreases and the rock is less well altered, showing more of the original features in a med. grey-green mottled shale. This generally continues to end of box at 161.0'.	150	160	100%	0.1%	1520	0.07					
		<u>Box 7 161.0' - 185.0'</u>											
		Continued in same greyish nondescript pyritic rock until 168'-169' where the rock grades into a mottled rock with pale salmon-buff 'fragments' or patches within a green buff matrix. Continues to ~ 172.5' where it grades into the salmon-colored phase almost exclusively till 174.5', then back again into a yellowish-buff to yellow-grey almost barren (of mineralization) phase with occasional salmon colored phases to end of box.	160	170	100%	0.1%	1421	0.07					
		169-175' may have been a highly alt <sup>d</sup> rock prior to brecciation and reheating by siliceous bands or vein-like zones that have py. but lack cpy.											



TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH. GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS						
			FROM	TO				Cu	Ag					
175														
		180' to 185' contains some sections which have obviously been brecciated but are now 'sealed' quite well by qtz vein-like material. Cpy is rare, pyrite ~ 5-8%.	170	180	100%	40.1%	1420	0.03						
180														
		Box B. 185.0' - 207' E.O.H.	180	190	100%	40.1%	1422	0.03						
		Continue in essentially uniform fine-grained pyritic greyish to grey-green siliceous alt <sup>2</sup> intrusive. Rock is almost aphanitic but very siliceous. Dispersing possible intense quartz-kerolite alt <sup>10</sup> with pyrite on fractures. Some barren late calc. vults.												
Occasional calc vults and ppt in fractures or disse.														
		At 200.5' a faulted contact with a lower moderately altered, weakly magnetic AS-fsp ppy. showing excellent trachyoid texture of pink-brown silicified hb. specularite and hematite spots throughout.	190	200	100%	40.1%	1424	0.03						
195														
		Followed by another fault contact at 204' with a lower essentially unaltered green-brown magnetic barren phase ppy. Hb. are weakly altered to chlorite, silicates very distinct also. Minor pyrite only.												
40° faulted contact														
Weakly alt <sup>2</sup> barren some hem. phase			200	207	100% E.O.H.	40.1%	1425	0.02						
40° Fault contact 205'														
Unaltered barren phase														

NO. [REDACTED]  
 GENERAL RESOURCES BRANCH  
 REPORT

ON

PROPERTY: RED-CHRIS OPTION

TEXASGULF INC.

HOLE NO. 1  
DDH 72C-78PAGE NO.  
1

LOCATION: 386E 2558 + 50 N.

## DRILL HOLE LOG

AZIM: 180°

ELEV:

DIP: -45°

LENGTH: 197'

T2E DIP TEST

CORE SIZE: 80

STARTED: June 7 5:00 pm

COMPLETED: June 8 1:00 am

PURPOSE: To test geochem anomaly above  
deep intersection 1% mineralization

CORE RECOVERY:

FOOTAGE	READING	CORRECT	FOOTAGE	READING	CORRECT
197'	41°	33.5°			

CLAIM NO:

SECTION: L. 386 E

LOGGED BY: J.M. NEWELL

DATE LOGGED: 8 JUNE 1978

DRILLING CO: D.W. COATES ENTERPRISES LTD.

ASSAYED BY: BONDAR CLEGG LTD.

TEXTURE, ALTER'N, MINERALIZATION, ETC.	GRAPH. GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS	
			FROM	TO				Cu	Fu
		Hole drilled through overburden to 16'							
		Box 1: 16.0 - 32.0	11.0	30.0	95%	0.2?	1426	0.15	0.003
Med-strong dissem py-sp sparse qtz vns shw mod minz		Hornblende Feldspar Porphyry Mod to strong phyllic alteration at collar. Hornblende sensitized but still clearly discernible Weak limonite stain for first 1-2" Wk qtz vein development							
Heavy sulphides in fault gouge		Qtz veined gouge zone @ 20" Wk stockwork vein development locally. Fine fractures more abundant							
Strong fine sulphides in fault zone		Well developed gouge & crush breccia zone. Appreciable qtz vein material incorporated in fault but weakening below. Below fault alteration becomes stronger, sensitized hornblendes become indistinct and rock becomes mottled porphyry. Qtz vein intensity increases to weak to mod stockwork. Occas. late carbonate veins.	30.0	40.0	99%	0.25	1427	0.14	0.003
W fine sulphides in qtz veins & on hair fractures Py-sp prob goetes Box 5.1									



TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH. GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS					
			FROM	TO				Cu	Au				
well min. G 36-5													
below which mainly fine scale breccias in some of and occasional spec br		Stockwork veins. Rock becomes more creamy-white + siliceous but texture remains preserved with siliceous matrix visible.											
below 40.0 ft increases with g.v. density, & fine heavy py. sp. in thin gouge. Fine disseminated sulph. inclusions.	40.0	Box 2: 38.0 - 60.0	40.0	50.0	99.5%	0.23	1428	0.16	0.003				
		Continuing in creamy grey altered porphyry with variable & patchy weak stockwork development.											
		Rock is finely brecciated @ 60' to some areas and strongly altered to extent texture almost obliterated.											
4 1/2' shak. with mar. 2 1/2' py. sp. Applicable fine disseminated sulph.		Short section, strong qtz veining, interrupted by minor fault. Below fault vein up to 2" wide well mineralized.											
		at gauge.	50.0	60.0	99.0	0.2	1429	0.10	0.002				
fine py. sp. disseminated in very fine matrix.		Somewhat breccia core in strongly altered porphyry. Some fractures sub-parallel to hole. Quartz veining only weakly developed.											
Abundant fine py. sp. in gangue material.	55.0	gouge & breccia core over approx 1' followed by weakly developed crush breccia with irregular slip surfaces coated with fine sulphides.											
		Below fault, rock becomes more massive. Though remaining strongly altered, areas fine qtz-carb. stringers. Gtz veins rare.											
fine sp. py. disseminated on some fractures.	60.0	Box 3: 60.0 - 83.0	60.0	70.0	99.0	0.1	1430	0.03	0.002				
		Irregular fine slips coated with grey sulphide thin gouge. Rock has a "crushed" look about it, as if on the point of structural failure.											
Secondary finely disseminated and on some mainly of	65.0												

MINERAL RESOURCES BRANCH  
ASPECT

TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS					
			FROM	TO				Cu	Au				
	75	Abundant irregular sulphidic slips sub-parallel to hole. Rock intensely altered.	70.0	80.0	99.0	0.15	1431	0.02	0.002				
fine disse. ca associated w coarse py. difficult to estimate grade.	75	Below weak fault gouge, strongly altered grayish-white porphyry, with alteration decussing & texture becoming recognizable at about 74.											
finely disse. py-ca 2-5%	75	Below 76 alteration averages approx with 12-18" pervasive silicification, followed by mottled porphyry, similar to above. Occasional fine carb. veinlets.											
	80												
		Box 4: 83.0 - 114.0	80.0	90.0	99.5	0.1	1432	0.02	0.002				
wt-mat disse. py-sp. mat becoming med. strong in silverbed zones	85	This box continues as before, fairly uniform pale gray to grayish white mottled porphyry with negligible quartz vein development. Short sections show incipient crushing and gouge development.											
		patchy silicification											
	90												
			90.0	100.0	68%	0.15	1433	0.07	0.002				
wt. py sparse ca. disse. & ca fine fractures	95	incipient crackle breccia with veinlets unidentified block mineral											
	100	Approx 75' core lost between 97 and 107. Assumed to be all below 97' block.											
	100		100.0	110.0	45%	0.75	1434	0.36	0.003				

NO

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT

TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS	
			FROM	TO				Cu.	Ag.
		insipient coarse breccia, patchy irregular silicification							
strongly dissem sp-py in silicified zone	100	Core ground below 107 block in pervasive silicification. Streakwork qtz veins remain visible.							
sparse dissem silicified	105	Below fault zone intense phyllic alteration in slightly crushed zone. Irregular qtz veining @ 111' continuing as healed "breccia" at stockwork & silicified porphyry.	110.0	120.0	99	0.25	1435	0.13	0.002
fairly dissem sp-py with less sp than section to 110'	115	Box 5 119.0 - 136.6. Below west fault intense phyllic alteration with relatively few qtz veins. Rock slightly crackled to 118'							
wt dissem py, sparse sp becoming weaker downwards	120	Very uniform pale grey med. K. strongly altered porphyry with very little veining beyond wk fault zone at 120' extends to end of box	120.0	130.0	100	0.1	1436	0.03	0.002
Fine pyrite dissem and/or inclusions fracture fairly evenly distributed throughout section	25	silicified. gangue zone(?)							
	130	Sparsely fine carb. veining	130.0	140.0	99.5	<1	1437	0.02	
wt dissem py, sparse sp. throughout	135								
	135	Box 6 136.6 - 159.5. Similar v. uniform pale grey altered porphyry continues							

NO  
 ORIGINAL RESOL. OF BRANCH  
 ASSESSMENT  
 1977





TEXTURE, ALTER'N MINERALIZATION, ETC.	GRAPH GEOL.	DESCRIPTION	FOOTAGE		REC'Y	EST. GRADE	SAM. NO.	ASSAYS					
			FROM	TO				Gr	Ag				
strong & fine disseminated pyrite to zone	120	Porphyry Breccia: angular to sub angular related fragments											
		below breccia zone porphyry becomes more mottled and more buff in colour											
fine disseminated sulphide calcareous	130	Weak crush zone	180.0	190.0	100	0.2	1442	0.14					
		Box 8: 182.5 - 197.0											
		3" dikelet on buff calcareous mat - prob high-temperature porphyry											
strong stockwork zone in stock zone. Disseminated pyrite more continuous below	185	strong stockwork of rather irregular quartz veins. Rock remains grey & buff-grey in colour. No significant increase in phylite alteration. Stockwork zone dies very quickly.											
			190.0	197.0	99	2.1	1443	0.07					
		Biotite for porphyry (?) Fine grained creamy buff, waxy, periphytic material. No biotite chlorite - possibly too narrow for their development. Contact is irregular. Narrow zone of silicification above & below.											
weak disseminated pyrite or somewhat stringer at dike contacts.	195	Hot ends in buff-grey mottled porphyry											
	197	End of Hole											

AMERICAN RESOURCES BRANCH  
 4555 S. W. 10th St  
 OKLAHOMA CITY, OKLA. 73109  
 NO. 100

APPENDIX B

STATEMENT OF EXPENDITURES

STATEMENT OF EXPENDITURES  
1978 Drilling Programme  
RED-CHRIS PROPERTY

	<u>Total Cost</u>	<u>Cost per Metre</u>
<u>DIAMOND DRILLING</u>		
391.4 m. BQ dilling as per invoice D.W. Coates Enterprises Ltd.	\$25,653.18	\$65.54
<u>SUPERVISION, CORE LOGGING, ASSAYS ETC.</u>		
<u>Salaries &amp; Benefits, Tg Staff</u>		
during period May 27-June 15, 1978.		
H.R. Schmitt, B.Sc. 15 days @ \$50	750.00	
G.N. Mannard, 16 days @ \$32.50	520.00	
J.M. Newell, P.Eng. 3 days @ \$170	510.00	
	1,780.00	1,780.00      4.55
<u>Room &amp; Board</u>		
78 man-days @ \$25	1,950.00	4.98
<u>Assays</u>		
118 Cu assays @ \$4.50	531.00	
70 Au assays @ \$5.00	350.00	
47 Compositing charges @ \$0.50	23.50	
	904.50	904.50      2.31
<u>Site Clean-up: Casual Labour</u>		
C. Abou- June 9	36.00	
G. Abou- June 9	36.00	
	72.00	72.00      0.18
<u>LOGISTICAL SUPPORT</u>		
<u>Tg Bell 206-B helicopter</u>		
25.2 hours @ \$300	7,560.00	
Vehicle, including gasoline	409.44	
Miscellaneous travel & communications	500.00	
	8,469.44	8,469.44      21.64
<u>REPORT PREPARATION</u>		
	550.00	1.41
TOTAL COST	\$39,379.12	\$100.61
<u>COST DISTRIBUTION</u>		
Chris 2 Mineral Claim    328.3 m.	\$33,030.57	
Chris 4 Mineral Claim    63.1 m.	6,348.55	

APPENDIX C

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

H.R. Schmitt, B.Sc.

H.R. Schmitt obtained his B.Sc. degree in geology from the University of British Columbia in 1977. While attending university, he was employed by Texasgulf during the 1975-76 summer field seasons. Since graduation he has again been employed by Texasgulf during the 1977-78 field seasons.

Over the period 1975-1977, Mr. Schmitt has obtained broad experience of the geology of Stikine District porphyry-copper gold deposits and he is highly competent to carry out the core-logging duties assigned to him on this project.

G.N. Mannard

G.N. Mannard has completed one year towards his degree in geology at Queen's University, Kingston. He has been employed by Texasgulf Inc. as a junior field assistant during the 1977 and 1978 field seasons.

He is competent to carry out the core-splitting duties assigned to him on this project.



J.M. Newell