

REPORT ON  
GEOLOGICAL SURVEY

by  
D.A. Bending

on the  
MOLLY BLUE CLAIM

NTS 93M/14W

127°25'W 55°44'N  
situated on Goathead Creek  
in the Omineca Mining Division

owned by  
TEXASGULF CANADA LTD.

work by  
TEXASGULF INC.

June 1981

Vancouver, B.C.

## TABLE OF CONTENTS

	<u>PAGE</u>
INTRODUCTION	1
Location, Access, Terrain and Climate	
History	3
Property Status	3
Summary of Work Completed	5
Geological survey	5
Work Distribution	5
GEOLOGY	5
Property Geology	6
Structure	7
BIBLIOGRAPHY	8

## APPENDICES

Appendix A	Hornfels analyses
Appendix B	Statement of Qualification
Appendix C	Statement of Expenditure

LIST OF FIGURES

<u>Fig. No.</u>	<u>Title</u>	<u>Scale</u>	<u>Page</u>
1	Location Map	1:250,000	2
2	Claim Location Map	1:50,000	4
3	Geology Map	1:2,500	in pocket

TABLE

Table 1	Summary of Mineralogy and Orientation of Veins and Dykes	follows p. 6
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## INTRODUCTION

On September 13 and 14, 1980, my assistant and I examined the molybdenite showings covered by the Molly Blue and Silver Fox claims. Several areas normally covered by snow and ice were exposed by recent melting. Although most of the area was examined, attention was concentrated on the northeast end of the cirque, where a faulted quartz-molybdenite vein system was observed.

### Location, Access, Terrain and Climate

The prospect is located at the Atna Range, near the headwaters of Goathead Creek. Figure 1 shows the property location.

Direct access to the property is by chartered helicopter from Smithers, 125 km to the south. Hazelton, which is the nearest supply centre, lies 58 km south of the property. Equipment and supplies can be trucked to the abandoned village of Kisgegas, and hence 15 km northeast to the property.

Regional topography is characterized by isolated peaks separated by broad, wooded valleys. The higher peaks, above 2000 metres, are surrounded by ice and snow fields. Relief on the property is moderate to extreme. The showings occur in a north facing cirque between elevations of 1500 and 1600 metres. Tree line is about 200 metres below the mineralized exposures.

The region has a cool temperate climate with moderate rainfall. Much of the property is covered by a small glacier. Snow, on and peripheral to this glacier, persists until late summer. Although sporadic snowfall can occur at higher elevations during most of the summer, accumulation of snow does not begin until October.

Kisgegas Peak

KISGEGAS PEAK  
MO PROSPECT



★ MT. THOMLINSON  
MO PROSPECT

Mt  
Thomlinson

Scale 1 : 250,000

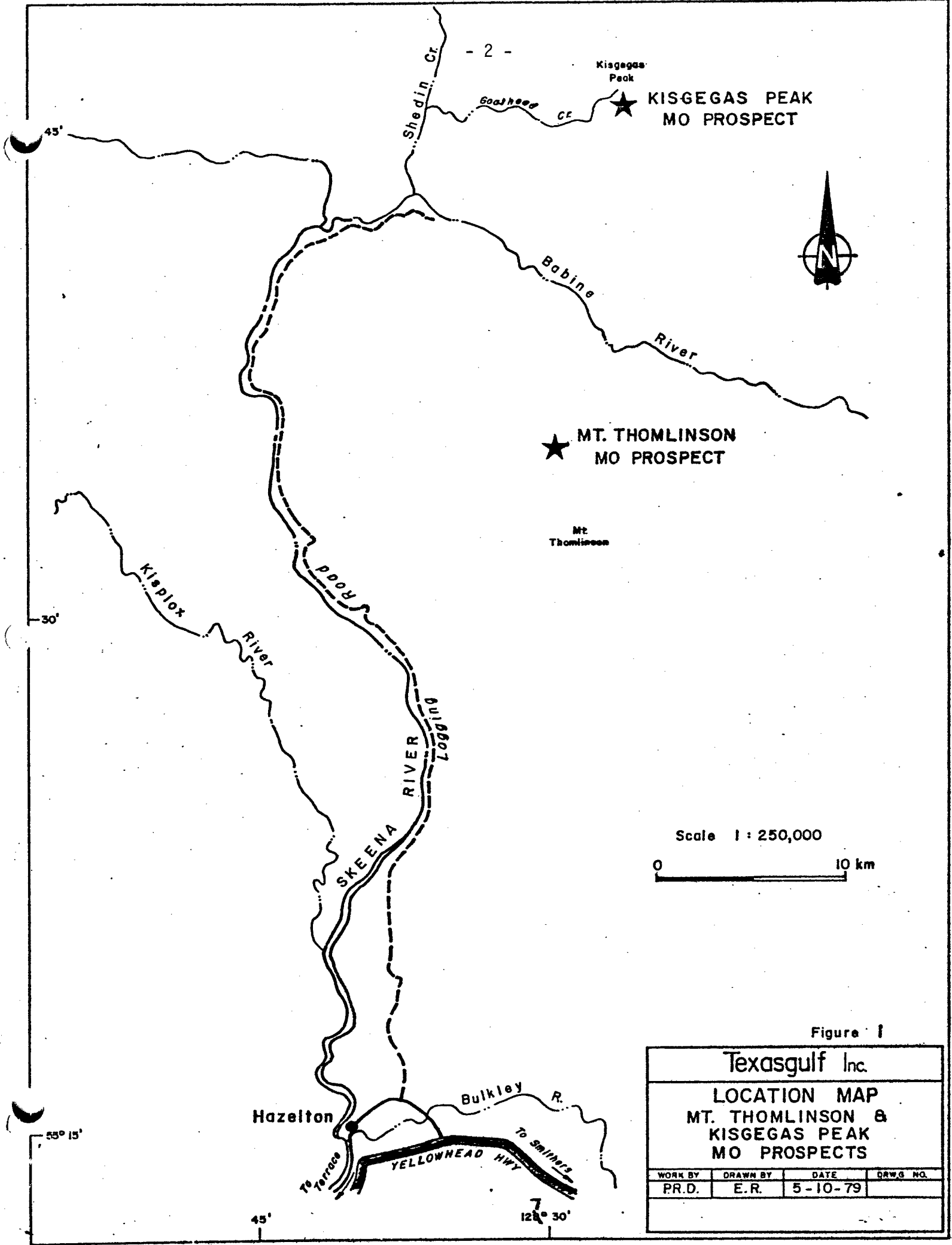


Figure 1

Texasgulf Inc.

LOCATION MAP  
MT. THOMLINSON &  
KISGEGAS PEAK  
MO PROSPECTS

WORK BY	DRAWN BY	DATE	DRWG NO.
PR.D.	E.R.	5-10-79	



## History

The history of the property has been reviewed by DeLancey (1979). The property, originally known as the Ole Group, was held by Canex in the early 1960's. Initial exploration was focused on low-grade Mo-Cu mineralization in rusty hornfels adjacent to a granitic stock. Canex allowed the ground to lapse in 1963. Amax personnel observed higher grade Mo mineralization in the granodiorite stock and scheelite in adjacent skarns. The Fog and Frost claims were staked to cover these occurrences.

During 1964, 1965 and 1966, Amax carried out programmes of geological mapping, trenching, chip sampling and a 453 metre hole. Although the upper part of the hole was reported to contain molybdenite, the overall results were apparently not encouraging enough to warrant further work, and the property was allowed to lapse.

In 1977, John Bot, an independent prospector from Smithers staked the Molly Blue Claim (figure 2). He optioned the property to Texasgulf on May 16, 1979.

P.R. DeLancey spent four days on the property in August, 1979. He produced a sketch map of the geology on a scale of 1:5,000, reported the style of the molybdenite and scheelite occurrences, and noted the presence of high grade  $\text{MoS}_2$  in float near the toe of the glacier (location shown in Figure 3). This was considered a new discovery, the source of which is apparently concealed by the glacier. He proposed a drill hole (see Figure 3) to test the apparent source of the mineralized float at the foot of the glacier. The Silver Fox Claim (4 units) was staked to cover the northeast end of the property.

The general retreat of snow and ice provided better exposure than that previously available. The presence of Amax's sample location markings on rock faces three to five metres above the ice indicates a significant retreat of the glacier in the intervening fifteen years.

## Property Status

The mineral occurrences are covered by the Molly Blue and Silver Fox Claims shown on Figure 2. The Molly Blue Claim was transferred to

Kisgegas  
△  
Peak



SILVER FOX CLAIM

Snow & Ice

93M/14W

93M/11W

55°45'

Goat head Cr.

MOLLY BLUE CLAIM

Ridge line

Scale 1 : 50,000



Figure 2

Texasgulf Inc.

**CLAIM LOCATION MAP**  
**KISGEGAS Mo PROSPECT**

WORK BY	DRAWN BY	DATE	DRWG NO.
P.R.D.	E.R.	8-10-79	

— 127°30'

Texasgulf Canada according to terms of the option agreement signed on May 16, 1979 (Bill of Sale, September 27, 1979). The Silver Fox Claim is covered by terms of the option concerning peripheral ground.

Following work filed in 1980, the Silver Fox Claim is in good standing until September 11, 1982. The Molly Blue Claim is due to lapse June 24, 1981. The geological work documented in this report will be filed for assessment credit on the Molly Blue and Silver Fox Claims.

#### Summary of Work Completed

##### Geological survey

Work done in 1980 consisted of two days of geological mapping during which four samples were taken for analysis. Mapping was carried out on a 1:5,000 scale map blown up from a 1:50,000 scale topographic map; the data was transferred to a 1:2,500 topographic map previously prepared by McElhanney Surveying.

##### Work Distribution

Work was carried out on the Molly Blue and Silver Fox claims.

#### GEOLOGY

##### Regional Geology

The local geology has been discussed by Schroeter (date uncertain, presumed to have been written about 1977), Bot (1977) and DeLancey (1979). Some broad aspects of the regional setting have been considered by Carter (1976). The Atna Range is underlain mainly by argillites, siltstones and minor carbonates of the Jura-Cretaceous Bowser Lake Group. Molybdenite and lesser tungsten mineralization is associated with Upper Cretaceous granodiorite stocks (Bulkley Intrusions) which cut the sedimentary sequences.



### Property Geology

The geology of the property, compiled from data by Schroeter (1977?), DeLancey (1979), and 1980 work is shown in Figure 3. The known mineralization is localized within and peripheral to the northeast end of a pear-shaped granodiorite stock approximately 1800 x 650 metres. Pyrite, with lesser chalcopyrite and molybdenite, occur in hornfelsed argillites near the eastern contact. Scheelite occurs in pyritic garnet-epidote skarn in some limy beds. Molybdenite, chalcopyrite and pyrite occur in a weak quartz stockwork and disseminated in the granodiorite. The quartz stockwork occurs near the toe of, and along spurs peripheral to a small glacier. Schroeter (1977?) indicated that the stockwork might continue beneath the glacier. DeLancey (1979) noted high grade  $\text{MoS}_2$  mineralization west of the toe of the glacier and suggested it was probably derived from beneath the ice.

Schroeter described three varieties of quartz veins and four varieties of dykes. The mineralogy and orientation of these veins and dykes are summarized in Table 1. Potash metasomatism is associated with molybdenite mineralization in early quartz veins and fractures. Molybdenite occurs in all three varieties of quartz veins. Pyrite, chalcopyrite, stibnite, orthoclase, gypsum and fluorite occur in various combinations in the veins. Each of the four types of dykes (aplite, granodiorite, mafic-rich granodiorite and diabase) and each variety of quartz veins, has a discrete setting within the paragenetic sequence. Each of the three vein types appears to represent a separate period of molybdenite mineralization. Argillic alteration and finely disseminated molybdenite are localized along some minor shears near the southwest margin of the cirque. Four character samples of pyritic hornfels were analyzed for gold, silver and tungsten. The values, listed in Appendix B, were uniformly low.

Table 1. Summary of Mineralogy and Orientation of Veins and Dykes.

Veins

<u>Types</u>	<u>Mineralogy</u>	<u>Alteration</u>	<u>Orientation</u>
1. Early Quartz Veins 1 cm.	(Quartz), molybdenite, pyrite, chalcopyrite. May be 'dry' with no quartz.	Potash feldspathization	ND*
2. Main Quartz Vein Stockwork. 1-5 cm.	Vuggy quartz, K-spar, pyrite, (calcite, molybdenite, sphalerite, chalcopyrite, gypsum, fluorite).	K-spar haloes 1.5 cm into rock.	055°/70° NW prominent, other significant sets.
3. Large Quartz Veins; 2.5 -60 cm.	Vuggy, pyrite, molybdenite, chalcopyrite, stibnite.	ND; some K-spar rinds.	055°, 70° NW

Dykes

1. Aplite contemporaneous and later than main Quartz vein stockwork	Granular to quartz eye porphyries, quartz, K-spar (biotite, MoS <sub>2</sub> , FeS <sub>2</sub> )	-	050°, 70° NW
2. Granodiorite- 7 m	Similar to main stock but with larger quartz eyes. Disseminated pyrite (malachite).	-	055°/55° NW
3. Mafic-rich granodiorite 2.5 cm-1.5 m	Dark grey, 10% white feldspar phenocrysts, ground mass of 15% biotite, 10% quartz, 70% white feldspar	-	Random
4. Diabase (post-veining)	50% fine plagioclase, 45% mafics, 5% pyrite.	-	Trend northeast dip steeply northwest.

\* No data available at the time of writing.

## Structure

Table 1 summarizes the structural and mineralogic characteristics of the various vein, dyke and fracture types based on data from Schroeter (1977?), DeLancey (1979) and personal observations in 1980.

The dominant structural trend is Az 050°-060°, with a steep northwest dip. Mineralized veins and fractures have been measured at Az 055°/70° northwest; Az 050°/30°-50° northwest, and Az 310-330°, with a steep southwesterly dip.

The fault observed along the eastern margin of the cirque trends Az 050° and dips 40° northwest. The surface of the glacier is subparallel to and roughly coincident with the fault plane. The fault is subparallel and may be complimentary to some mineralized veins and fracture surfaces. It is apparently related to the structural framework of the stockwork, but clearly displaces the mineralized zone as exposed at the northeast end of the property.

*Dave A Bending*  
D.A. Bending

*G. R. Peatfield*  
24/06/81

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6 pages.

CARTER, N.C., 1976. "Regional Setting of Porphyry Deposits in West-  
central British Columbia: CIM Special Volume 15, Porphyry Deposits  
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DeLANCEY, P.R., 1979. Report on the Kisgegas Molybdenum Prospect  
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SCHROETER, T., 1977. (assumed date - precise date unknown). "Molly  
Blue (93M13E)". Unpublished description of property, 4 pages.

APPENDIX A  
Hornfels Analyses

To: Telegulf, Inc.

REPORT NO. 1654

PAGE No. 1

**BONDAR-CLEGG & COMPANY LTD.**

DATE: October 30, 1980

701 - 1281 West Georgia Street  
Vancouver, B.C. V6E 3J7

Samples submitted: October 14, 1980  
Results completed: October 30, 1980

**CERTIFICATE OF ASSAY**

**PROJECT: 77 BENDING**

I hereby certify that the following are the results of assays made by us upon the herein described ore samples.

MARKED	GOLD		SILVER		W						
	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent
5626	<0.002		<0.02		0.01						
5627	<0.002		0.02		0.01						
5628	<0.002		0.13		0.03						
5629	<0.002		0.13		<0.01						

  
Registered Assayer, Province of British Columbia

APPENDIX B

Statement of Qualification

STATEMENT OF QUALIFICATION

D.A. Bending - Geologist

D.A. Bending holds a B.Sc. degree in Geology from the University of Oregon (1976), and is presently completing an M.Sc. degree at the University of Toronto. He has been employed by Texasgulf since May 1, 1980, based in Vancouver.

G. R. Peatfield  
24/06/81



APPENDIX C

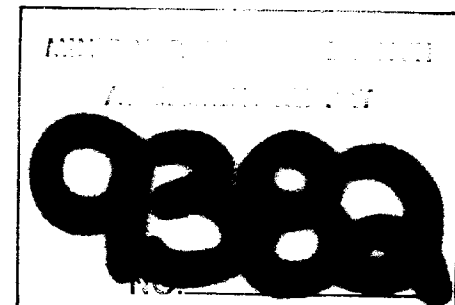
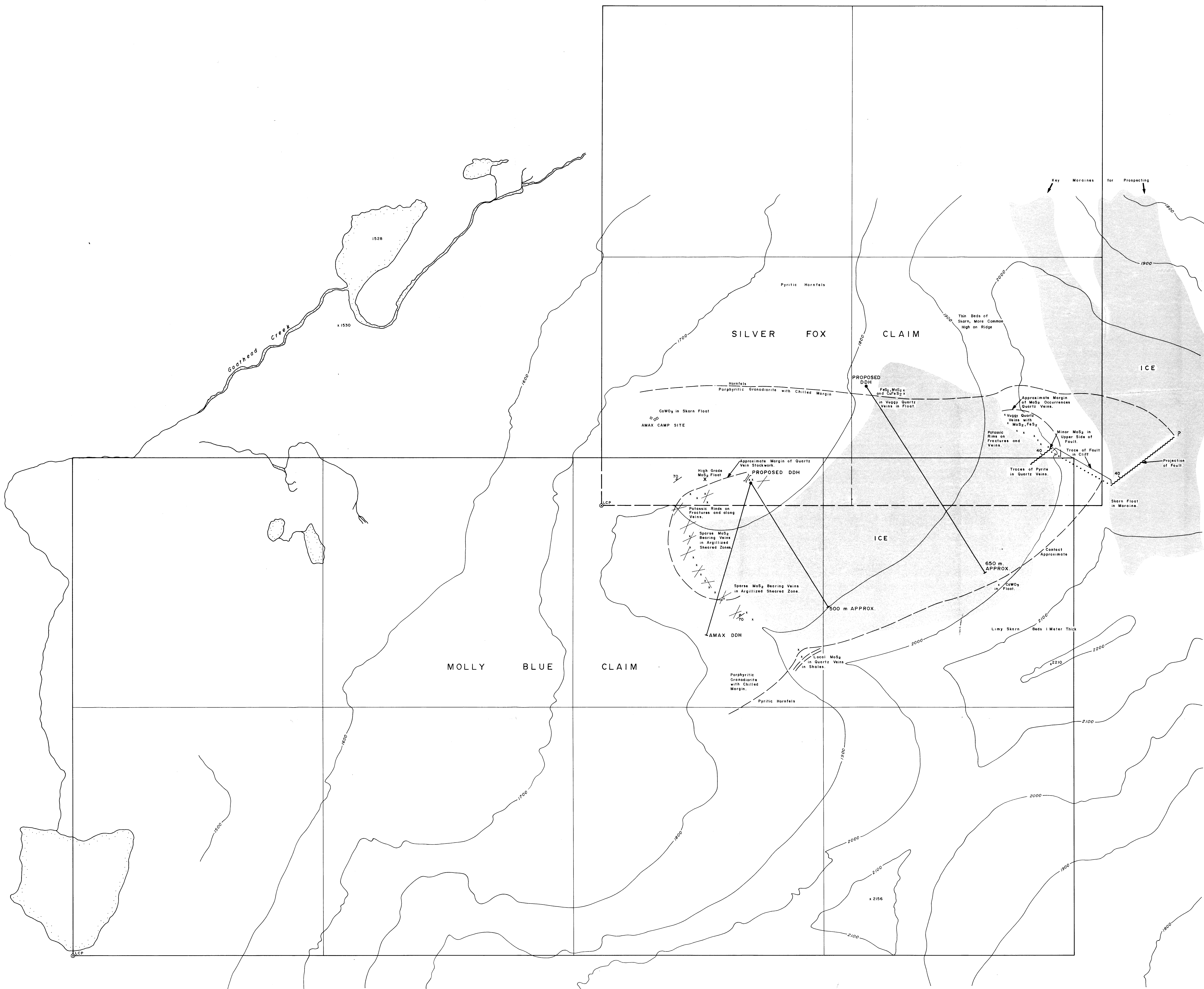
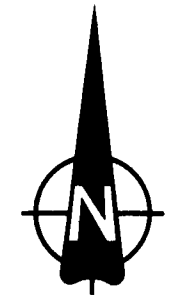
Statement of Expenditure

STATEMENT OF EXPENDITURES

SALARIES AND FRINGE BENEFITS, TEXASGULF INC.

D.A. Bending - Geologist Sept. 13, 14 - 2 days @ \$120	240.00	
J.W. Leigh - Assistant Sept 13,14 - 2 days @ \$35	<u>70.00</u>	
	310.00	310.00
 <u>ROOM AND BOARD</u>		
4 man-days @ \$50		200.00
 <u>HELICOPTER SUPPORT</u>		
Texasgulf BELL 47-SOLOY 2 hrs @ \$285		570.00
 <u>ANALYSES</u>		
4 assays for Au, Ag, WO <sub>3</sub> @ \$18.50		74.00
 <u>REPORT PREPARATION</u>		
D.A. Bending 1 day @ 120	120.00	
Secretarial, reproductions, etc	50.00	
Drafting (contract)	<u>174.00</u>	
	344.00	<u>344.00</u>
		<u>1,498.00</u>

*G.R. Beaffield*  
*24/06/81*



Texasgulf Inc.

**KISGEGAS Mo (W)**  
**PROPERTY GEOLOGY**

WORK BY	DRAWN BY	DATE	DRWG NO.
D.A.B., PRD.	D.A.B. TM.	APRIL 1981	

Scale in Metres