

1672
PART 3

GEOLOGICAL REPORT

Geological Survey

on

THE CAVZ CLAIMS

CAVZ M.C.'s 1 to 12, 15 to 26,
29 to 40, 45 to 54

Trail Peak, Omineca M.D.
13 miles northeast of Fort Babine
55°, 126° S.E.

by

C.C. McLeod
J. Russell Loudon, P. Eng.

owned by

Texas Gulf Sulphur Company

June 28th to September 15th, 1968

RECEIVED
SEP 30 1968

SMITHERS, R. C.

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#1 Location Map

Following page 1

✓ Geological Map in pocket

Scale: 1"=400'

GEOLOGICAL REPORT

CAVZ Claim Group

SUMMARY

General Statement

This report summarizes the results of geological mapping, completed by Texas Gulf Sulphur Company on the CAVZ claims, Trail Peak, 13 miles northeast of Fort Babine, B.C.

Conclusions

1. Reconnaissance silt sampling in 1967 outlined an anomalous area on Trail Peak which was followed by prospecting. The prospecting showed the area to contain favourable rock types and to be structurally favourable. However, it failed to turn up any copper mineralization. On the strength of the apparent favourable geology and the geochemical silt anomaly, 70 claims were staked. Detailed work in 1968 has shown the favourable geology and structure to exist, however, the detailed work has failed to locate the source of the copper anomaly.
2. Considerable sulphides were observed in the form of pyrite, pyrrhotite, and minor chalcopyrite. Magnetite and hematite were also observed. The chalcopyrite was observed along the north-easterly fault.

INTRODUCTION

Purpose of Project

The purpose of the CAVZ programme was two-fold:

1. To thoroughly investigate the geochemical silt survey anomaly outlined during the 1967 Babine-Shelford Reconnaissance Programme.
2. To obtain a detailed geological map of the area in order to be able to compare the geology of the property with that on known "porphyry copper" type deposits in the area.

Location, Access and Terrain

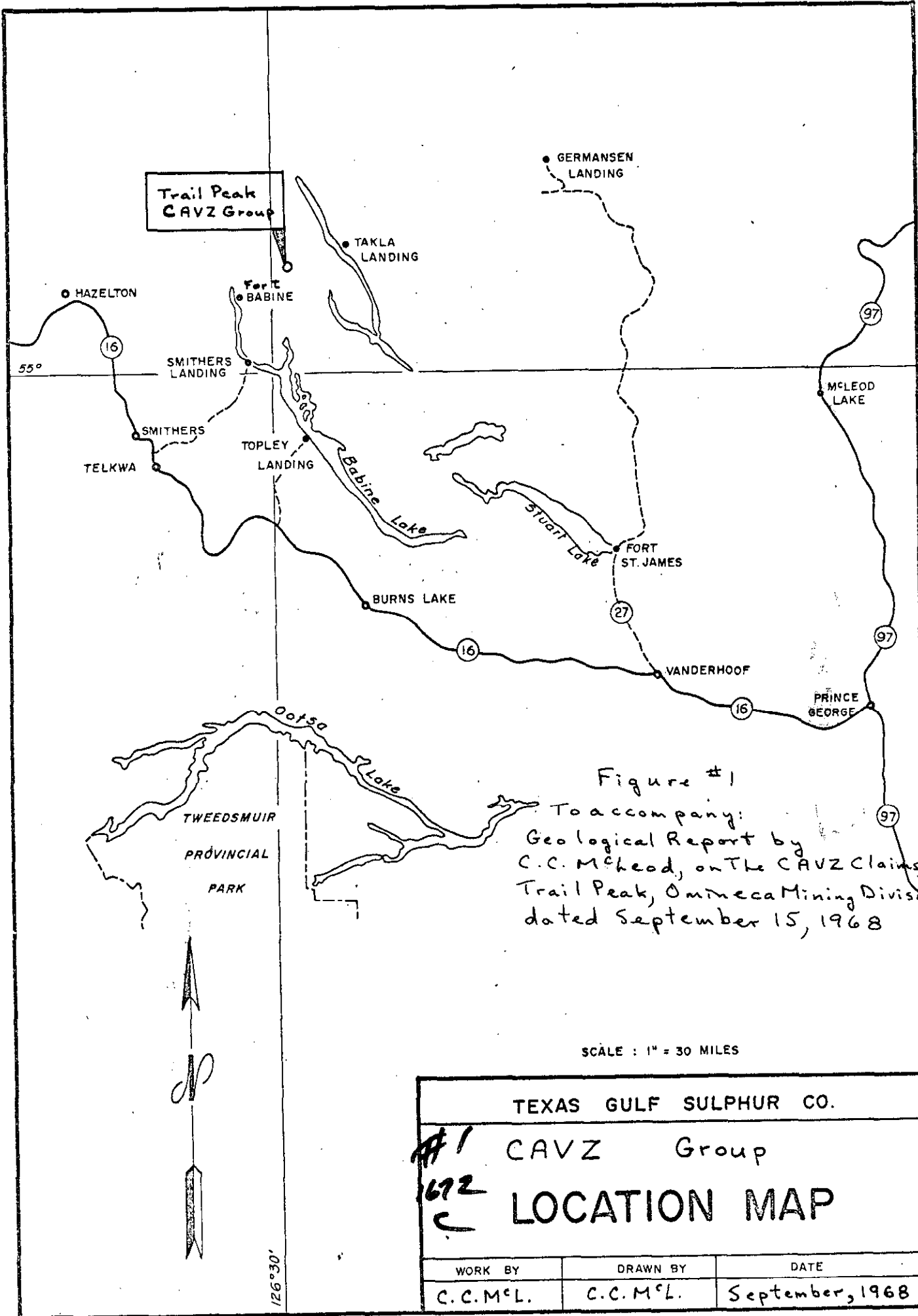
The property is situated on Trail Peak which is 13 miles northeast of Fort Babine at the north end of the west arm of Babine Lake, 55°25' N latitude and 126°20' W longitude.

Access to the property is by helicopter from Smithers where Okanagan Helicopters maintain a base. An old tractor trail from Fort Babine runs to within 200 vertical feet of the peak.

The terrain over the claim group is mostly gentle slopes up to 15° except for creek gullies, which tend to follow the faults, and are therefore extremely steep, up to 45°. The top of the mountain is at 5335 feet and the lowest point on the property is 3500 feet.

Crew

The crew for the project consisted of six men and a cook. Two geologists, 1 geochemical sampler, and 3 line cutters. All work was done off the chained grid.



Trail Peak
CAVZ Group

Figure #1
To accompany:
Geological Report by
C.C. McLeod, on the CAVZ claims
Trail Peak, Omineca Mining Division
dated September 15, 1968

SCALE : 1" = 30 MILES

TEXAS GULF SULPHUR CO.		
CAVZ Group		
LOCATION MAP		
WORK BY	DRAWN BY	DATE
C.C. McL.	C.C. McL.	September, 1968

HAZELTON
16
55°
SMITHERS LANDING
SMITHERS
TELKWA
Fort BABINE
SMITHERS LANDING
TOPLEY LANDING
Babine Lake
TAKLA LANDING
GERMANSEN LANDING
STUART Lake
FORT ST. JAMES
27
BURNS LAKE
16
VANDERHOOF
15
PRINCE GEORGE
97
MCLEOD LAKE
97
97
Ootsa Lake
TWEEDSMUIR PROVINCIAL PARK
126°30'

Field Methods

Geological mapping was controlled by the chained grid, lines 400 feet apart with hundred foot chainages. A final map was prepared showing locations of outcrops. A helicopter was used when in the area to cover the outer reaches of the claim group.

Ownership

The Company's 70 claims were staked by Jean Alix Company, Val D'Or, Quebec. The Company staked 4 fractional claims during the 1968 field season.

GEOLOGY

Regional Setting

The CAVZ group lies within the Middle Division of the Hazelton Group and is of Middle to Upper Jurassic age. The middle division of the Hazelton Group is made up of argillaceous and arenaceous sediments with minor amounts of volcanic tuffs and flows.

The regional structural picture is a series of broad northwest trending anticlines and synclines, the CAVZ group forming a broad syncline.

Property Geology

Lithology

A detailed description of the rock types is appended (see Appendix II).

The Middle Hazelton sediments are composed largely of black argillite (i.e. 344E, 240N) and cherty argillites (i.e. 320E & 300N) with minor interbedded (?) siltstone (i.e. 319E, 254N) and volcanic tuffs (i.e. 284E & 300N). There is also some argillaceous quartzite (i.e. 292E & 312N) and arkosic sandstone (i.e. 272E & 300N) present

in the sequence.

The sediments are cut by a small diorite plug (i.e. 208E & 300N) and numerous porphyry dykes which vary in porphyritic composition; biotite-feldspar (i.e. 356E & 261N), hornblende feldspar (i.e. 292E & 261N), and biotite-hornblende-feldspar (i.e. 300E & 300N).

STRUCTURE

General Statement

The structure with the claim group appears to be quite simple with a few complications because of faulting.

Folding

The only folding evident on the property appears to be part of the regional trend. The regional folding is in the form of a broad syncline with the fold axis trending northwest.

Faulting

The first period of faulting is probably represented by the northwest trending fault. It appears to be a strike-slip fault with displacement of approximately 1900 feet. (Cutting claims CAVZ #2, 17, 18, 20, 35, 37, 40).

The second period of faulting, the east northeasterly fault, appears to be possible a minor thrust fault with the southern half being thrust over the northerly portion. (Cutting claims CAVZ #10, 8, 21, 20, 31, 32).

Besides the two major periods of faulting, there are several minor faults which follow the trends of the two major faults. These faults are most prominent in the northeast quarter. (Claims CAVZ # 38, 49, 51).

ECONOMIC GEOLOGY

General Statement

The CAVZ Group was looked at as a possible large low-grade "porphyry type" copper deposit. To date little copper mineralization has been encountered on surface. However, excessive amounts of pyrite, pyrrhotite, magnetite and hematite have been observed along with minor chalcopyrite.


Insufficient copper mineralization has been observed to explain the geochemical anomalies.

Mode of Occurrence

1. 329E & 286N - Chalcopyrite was found on widely spaced fracture surfaces and disseminated in an outcrop 150 feet in length. The rock was a hornblende-feldspar porphyry.

2. 341E & 252N - Tetrahedrite and bornite were observed in a six inch shear zone in a black argillite. The showing had been trenched approximately ten years ago at the time it was staked by another party.


E. C. McLeod


J. Russell Loudon, P. Eng.

QUALIFICATIONS OF C.C. McLEOD, GEOLOGIST
Texas Gulf Sulphur Company
Vancouver Office

Academic Qualifications

Bachelor of Science, University of British Columbia
1967, in Geology.

Experience

Prior to Graduation:

1. One summer 1963 - geochemical laboratory assistant with United Keno Hill Mines.
2. Twelve months 1964-65 - geological assistant and geochemist with Amax Explorations Inc.
3. One summer 1966 - geologist with Texas Gulf Sulphur Company.

After Graduation:

1. One year as geologist with Texas Gulf Sulphur Company.


C.C. McLeod

APPENDIX II - Rock Descriptions

For the purpose of mapping, 10 major rock types, falling into two main categories, are recognized. These will be discussed in detail below, under the headings of Sedimentary Rocks, and Intrusive Rocks. No stratigraphic sequence is implied by the order in which the rocks are described.

Sedimentary Rocks (Map Units 1 - 6)

Black Argillite (Non-pyritiferous)(Map Unit 1)

These are fine-grained black rocks with no visible sulphides and are non-siliceous with occasional calcite on fractures.

Purple Tuff (Map Unit 2)

This unit is a marine laminar tuff with some fragments up to 2" in diameter, moderate amounts of pyrrhotite were observed within the unit and the pyrrhotite occasionally replaces the fossils. This unit has been silicified near the intrusive but not in the northwest quarter where there is a small bed.

Siltstone (Pyritiferous) (Map Unit 3)

This is a thinly bedded very fine-grained grey-green rock which is usually pyritiferous, up to 2% pyrite.

Argillaceous Quartzite (Pyritiferous) (Map Unit 4)

A medium to fine-grained grey to white siliceous rock which usually contains minor pyrite as disseminations and/or fracture fillings up to 3% pyrite. This unit is interbedded with and often grades into the cherty argillite (Map Unit 5).

Cherty Argillite (Pyritiferous) (Map Unit 5)

This unit is a fine bedded, fine to medium-grained, black to grey, siliceous rock which can contain up to 3.0% pyrite, disseminated

and/or on fractures.

Arkosic Sandstone (Map Unit 6)

This is a fine to medium-grained grey-brown rock which in places has been slightly metamorphosed.

Intrusive Rocks (Map Units 7 - 10)

Biotite-Feldspar Porphyry (Map Unit 7)

The porphyry contains subhedral to euhedral medium to coarse (6 mm to 15 mm), biotite and (6 mm to 20 mm) feldspar phenocrysts. The matrix is aphanitic grey to purple grey and appears to be andesitic in composition.

Hornblende-Feldspar-Porphyry (Map Unit 8)

This unit is a fine to coarse-grained rock with phenocrysts varying from anhedral to euhedral and in size from 2 mm to 20 mm, the feldspar phenocrysts always being largest but often anhedral to subhedral. The matrix is generally a dense grey-green mass.

Biotite-Hornblende-Feldspar Porphyry (Map Unit 9)

This unit is a fine to medium-grained rock with a brown to grey-brown aphanitic texture. The phenocrysts are generally euhedral with the biotite being from 2 mm to 8 mm, the hornblende, from 2 mm to 12 mm, and the feldspar from 4 mm to 16 mm. The feldspar may vary from anhedral to euhedral with 50% being subhedral. The phenocrysts make up approximately 20% of the rock.

Diorite to Monzonite (Map Unit 10)

A black and white speckled rock with a medium to coarse holocrystalline texture. The rock is almost porphyritic at times. The composition is 5% quartz, 30% mafics, biotite and hornblendes and 65% feldspar.

The stock in the northcentral portion of the map area has a narrow contact zone, 100 feet in width, around it. This zone is a siliceous biotite-rich unit.

Canada

Province of British Columbia

To Wit:

In the Matter of

The attached report "Geological Survey of the CAVZ Claims, Trail Peak, Omineca Mining Division" by C.C. McLeod

I, J. Russell Loudon, P. Eng. Vancouver 5

, of 701 - 1281 West Georgia Street

in the Province of British Columbia.

Do Solemnly Declare that I have supervised the work carried out and described in the attached report and that:

- a. The survey was carried out during the period June 28th to August 14th, 1968 by
 - b. C.C. McLeod (geologist) June 28th to August 14th, 1968

48 days @ \$1000/month	\$ 1,500.00
------------------------	-------------
 - R. Olsen (geologist) June 28th to July 28th

31 days @ \$900/month	900.00
-----------------------	--------
 - c. Their living expenses were at the rate of

\$8.00/day/man for a total of 79 days	632.00
---------------------------------------	--------
 - d. Helicopter support costs:

5 hours @ \$140.00/hour	<u>700.00</u>
-------------------------	---------------
- | | |
|--------------|--------------------|
| Total | \$ 3,732.00 |
|--------------|--------------------|

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 Vancouver in the Province of British Columbia.

this 19 day of

Sept. A.D. 19 68

Notary Public in and for the Province of British Columbia
A Commissioner for taking affidavits for British Columbia
Sub-mining Recorder

APPENDIX II

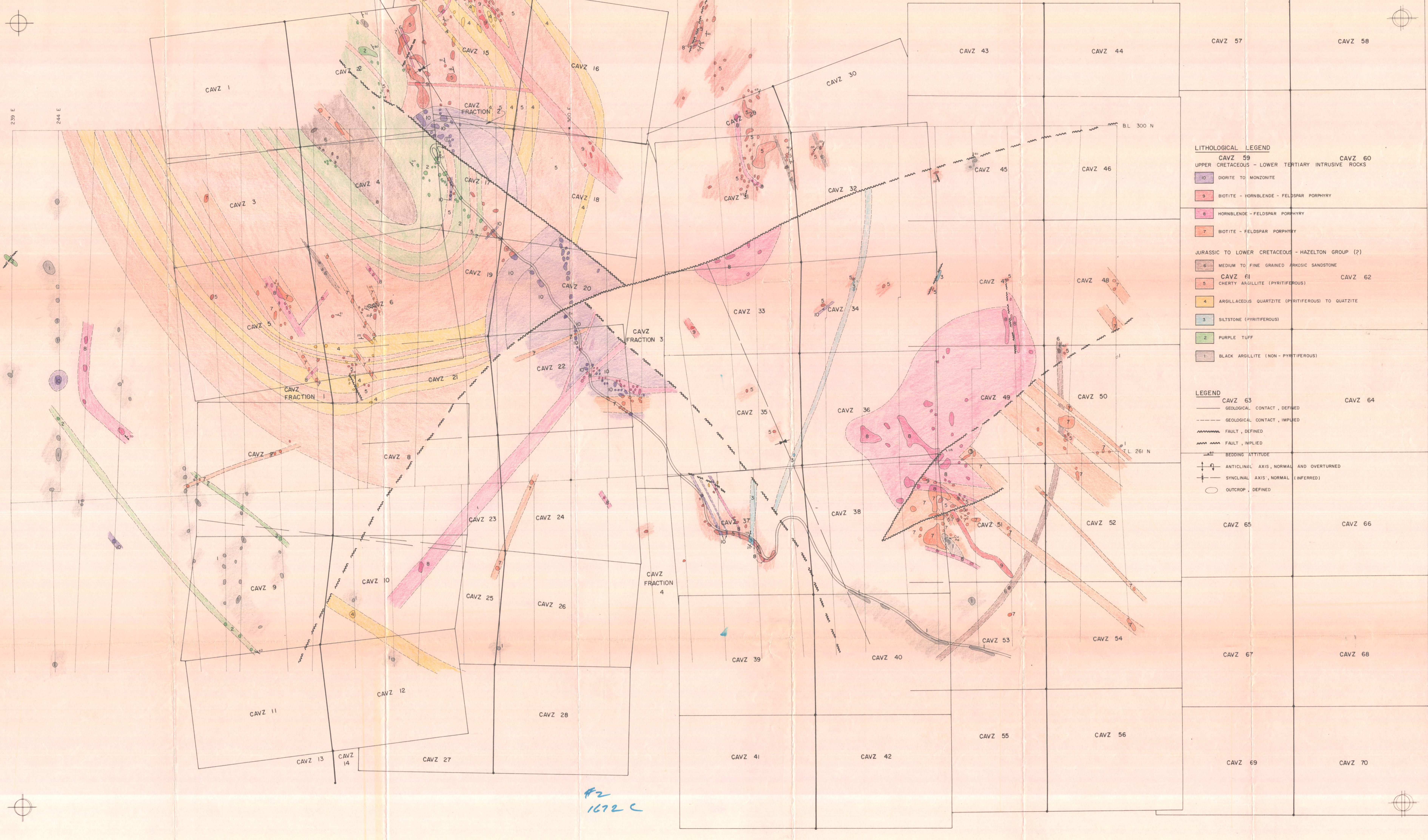
Rock Descriptions

APPENDIX I

Statutory Declaration

and

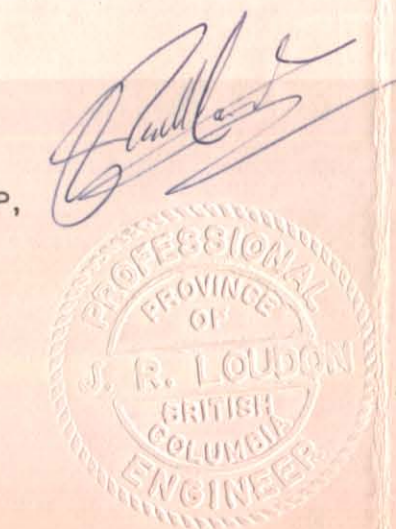
Qualifications of C.C.McLeod



- LITHOLOGICAL LEGEND**
- CAVZ 59
UPPER CRETACEOUS - LOWER TERTIARY INTRUSIVE ROCKS
- 10 DIORITE TO MONZONITE
 - 9 BIOTITE - HORNBLende - FELDSPAR PORPHYRY
 - 8 HORNBLende - FELDSPAR PORPHYRY
 - 7 BIOTITE - FELDSPAR PORPHYRY
- JURASSIC TO LOWER CRETACEOUS - HAZELTON GROUP (?)
- 6 MEDIUM TO FINE GRAINED ARKOSIC SANDSTONE
 - CAVZ 61 CHERTY ARGILLITE (PYRITIFEROUS)
 - CAVZ 62 CHERTY ARGILLITE (PYRITIFEROUS)
 - 4 ARGILLACEOUS QUARTZITE (PYRITIFEROUS) TO QUARTZITE
 - 3 SILTSTONE (PYRITIFEROUS)
 - 2 PURPLE TUFF
 - 1 BLACK ARGILLITE (NON - PYRITIFEROUS)

- LEGEND**
- CAVZ 63
 - GEOLGICAL CONTACT, DEFINED
 - - - GEOLGICAL CONTACT, IMPLIED
 - ~ ~ ~ FAULT, DEFINED
 - - - FAULT, IMPLIED
 - BEDDINGS ATTITUDE
 - ⊕ ANTICLINAL AXIS, NORMAL AND OVERTURNED
 - ⊖ SYNCLINAL AXIS, NORMAL (INFERRED)
 - OUTCROP, DEFINED

TO ACCOMPANY A GEOLOGICAL REPORT
BY C. C. MCLEOD, GEOLOGIST, ON CAVZ GROUP,
ON TRAIL PEAK, OMINECA MINING DIVISION,
DATED SEPTEMBER 15, 1968



SCALE: ONE INCH = 400' 1000 FEET

TEXAS GULF SULPHUR CO.

1672 C PART 3 CAVZ GROUP
GEOLOGICAL MAP ①

WORK BY	DRAWN BY	DATE
C. C. MCLEOD	I. J. von Assum	SEPTEMBER, 1968

1672