

9435

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DIAMOND DRILLING REPORT

for

Red 1 Group, Sulphurets Property

Mineral Claims: Red River, Red River 2 - 7, Tedray 12

Skeena Mining Division

104B/8E

56° 30' N, 130° 15' E

Claims owned by: Granduc Mines, Limited (NPL) and

Esso Resources Canada Limited

Operated by: Esso Minerals Canada

600 - 1281 West Georgia Street

Vancouver, B.C. V6E 3J7

Report by: Dane A. Bridge

Submitted: June 30, 1981

TABLE OF CONTENTS

INTRODUCTION	1.
LOCATION	1.
ACCESS	1.
SULPHURETS PROPERTY LOCATION MAP	2.
LOCATION MAP OF RED 1 GROUP CLAIMS	3.
CLAIMS	4.
GEOLOGY AND MINERALIZATION	5.
DRILLING	5.
SUMMARY OF COSTS	7.
COST STATEMENT, DDH 17, FOR WORK APPLIED TO RED RIVER 2 AND 3 MINERAL CLAIMS	9.
COST STATEMENT FOR WORK APPLIED TO RED RIVER MINERAL CLAIM	10.
STATEMENT OF QUALIFICATIONS	11.
APPENDIX, DETAILED DRILL LOG (10 pages)	

MAP

DRILL HOLE LOCATION MAP

IN POCKET

## INTRODUCTION

This report documents diamond drilling for gold and silver mineralization in the south eastern portion of the Sulphurets property.

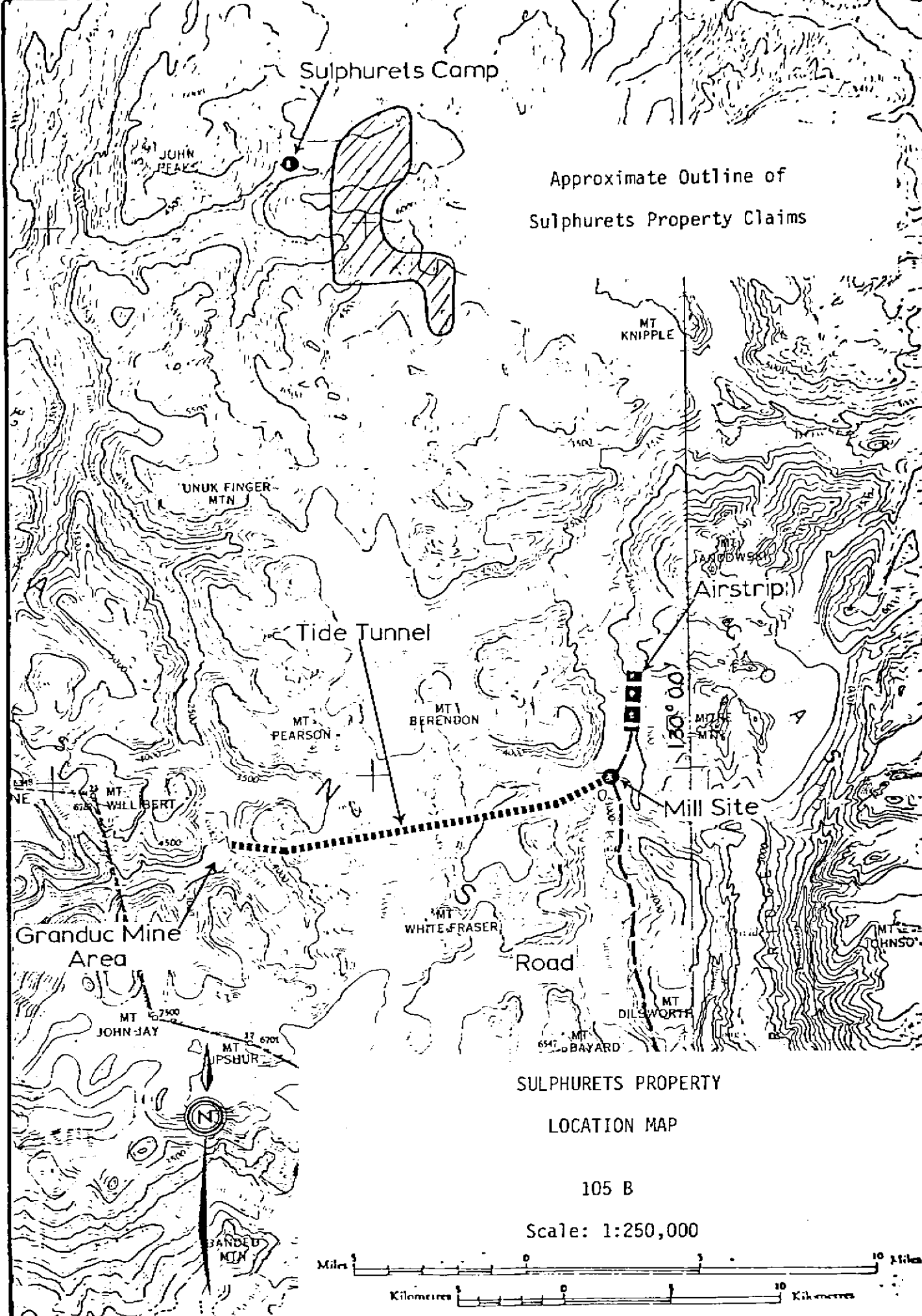
## LOCATION

The Sulphurets property is located approximately 65 km north west of Stewart, B.C. and 20 km north of the Granduc Mine. It is at the headwaters of Mitchell and Sulphurets Creeks. The property is centered at  $56^{\circ} 30' N$  and  $130^{\circ} 15' E$ . It covers parts of 104B 18E, 8W, 9E, 9W.

The Red 1 Group mineral claims are in the vicinity of Brucejack Lake on 104B/8E. Brucejack Lake drains into the east arm of the Sulphurets Glacier.

## ACCESS

Access to the property is by helicopter from the Esso exploration camp located on the north side of Mitchell Creek about 200 m east of McTagg Creek.



Sulphurets Camp

Approximate Outline of  
Sulphurets Property Claims

MT KNIPPLE

UNUK FINGER  
MTN

Airstrip

Tide Tunnel

MT PEARSON

MT BERENDON

Mill Site

Granduc Mine  
Area

MT WHITE FRASER

Road

MT JOHN JAY

MT UPSHUR

MT BAYARD

MT DILSWORTH

MT JOHNSTON

SULPHURETS PROPERTY

LOCATION MAP

105 B

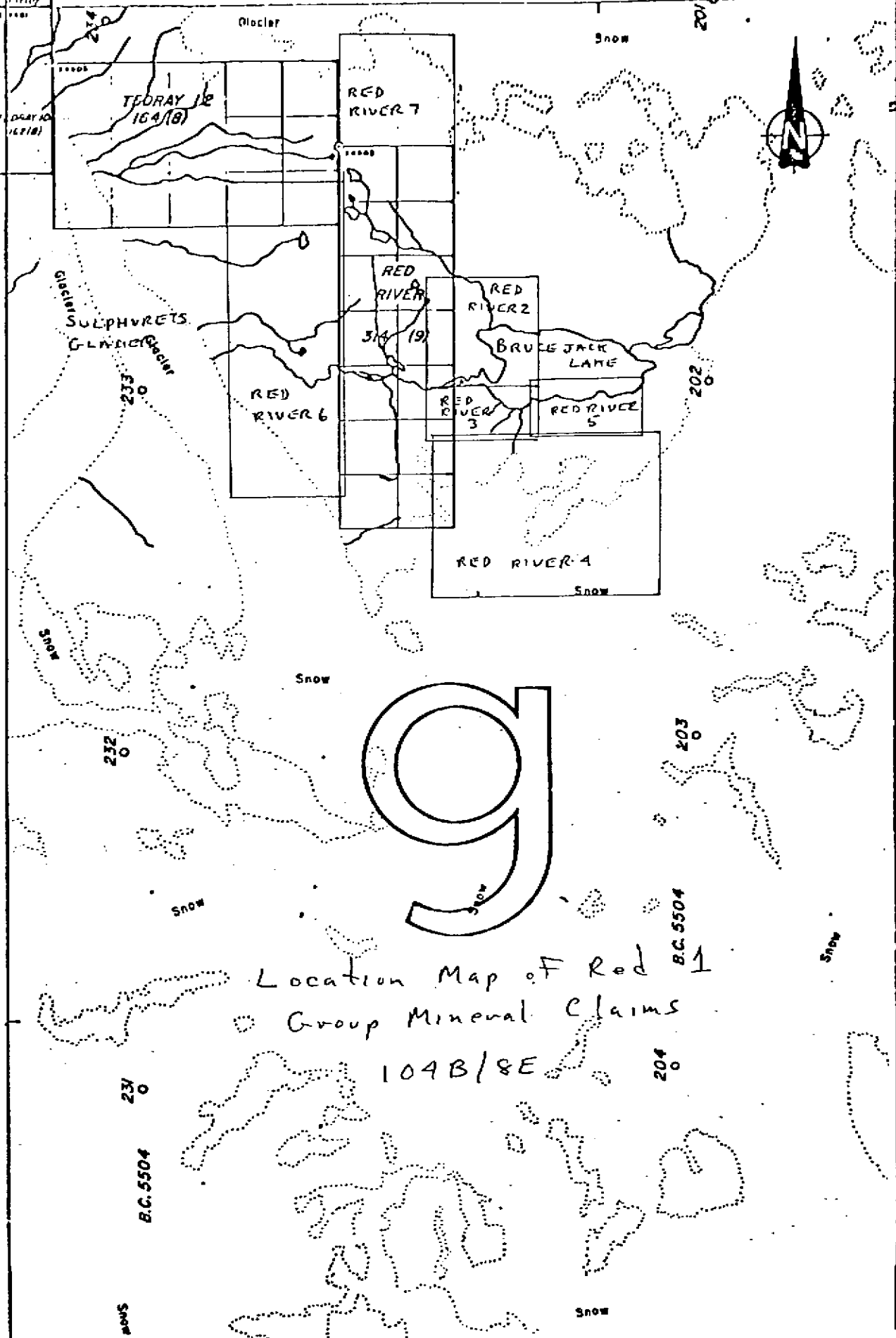
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56°30'  
TEDRAY 9  
161(B)  
(L0040)

M 104B/8E

130°15'  
10°  
(5116)



g

Location Map of Red 1

Group Mineral Claims

104B/8E

CLAIMS

The Sulphurets property consists of 222 units including 3 fractional claims and 6 two-post claims. The claims are held by Granduc Mines, Limited (NPL), Esso Resources Canada Limited and Sidney F. Ross. The property is being operated by Esso Minerals Canada under option from Granduc and S. Ross.

The Red 1 Group consists of:

Red River		14 units	record no	314
" "	2	4 "	" "	2555
" "	3	2 "	" "	2556
" "	4	12 "	" "	2650
" "	5	2 "	" "	2651
" "	6	12 "	tag "	72855
" "	7	4 "	tag "	72856
Tedray	12	15 "	record "	164

## GEOLOGY AND MINERALIZATION

The claim area is underlain by rocks of the Lower Jurassic Unuk River Formation. The Brucejack Fault and associated splay faults cut across the claims in north-south to north-westerly directions. The fault system is bounded on the east by rocks of the Middle Jurassic Betty Creek Formation.

The Unuk River Formation consists of volcanic breccia, crystal and lithic tuff, conglomerate, sandstone, siltstone, limestone, chert and minor coal. Volcanic epiclastic and flow rocks and minor sedimentary rocks are the common lithologies on the claims. Zones of intense shearing with sericite and/or clay mineral alteration, minor pyritization and quartz veining with barite and calcite are common. Locally some of the quartz veins and areas of sheared and altered rocks contain minor to very high values in gold and silver.

## DRILLING

This report discusses DDH 17 which was drilled to a length of 487 feet (148.4m) to test a quartz-barite-calcite vein containing small amounts of visible argentite and native gold. Gold was only detected in polished section.

The hole intersected sericite or clay mineral altered volcanic tuffs and crystal tuff. The rock was moderately, foliated and randomly veined by quartz, lesser barite and minor clacite. Very minor amounts of sphalerite, galena, pyrite, molybdenite, chalcoppyrite and probably argentite occur in the veins.

The following are the significant sections in DDH 17 with values in grams per tonne:

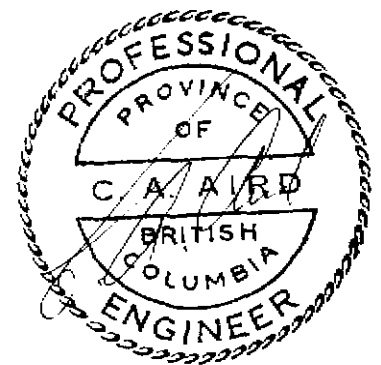
24.0 - 27.0 m, 1.65 Au, 237.59 Ag

66.0 - 69.0 m, 2.33 Au, 27.77 Ag

81.0 - 84.0 m, 0.93 Au, 62.40 Ag

Detailed drill logs are in the appendix.

The core is stored at the Esso Exploration camp.





SUMMARY OF COSTS

1. Fuel costs are costs of fuel plus helicopter transportation to camp or fuel cache area.
2. The mobilization demobilization costs for the drill are proportioned according to the footage of each hole as part of the 6000 feet of planned drilling. The total cost is estimated as follows:

Mob-demob as per contract	\$6,875.00
Mob, labour 193 hrs. at \$19.00	3,667.00
Mob, helicopter 6.4 hrs. at \$385	2,464.00
Mob, helicopter 7.6 hrs. at \$525.00	3,990.00
Estimated demob, labour 80 hrs. at \$19.00	1,520.00
Estimated demob, helicopters, same as for Mob.	6,454.00
Total mob-demob cost	24,970.00

3. Helicopter costs are for the contract rate plus fuel consumed:

206B, \$300/hr. + \$85/hr. for fuel	\$385/hr.
206L-1, \$400/hr + \$125/hr for fuel	525/hr.

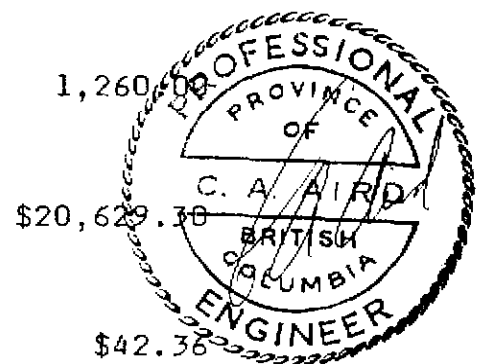
4. Camp costs are estimated as follows:

Total camp cost \$75,000. Camp to be used for 100 days per season over 3 years. Daily cost is then \$250. Groceries plus delivery cost approximately \$4200/month or \$140/day. Total room and board costs are  $\$250 + \$140 = \$390/\text{day}$ . There are normally 14 men in camp so cost per man per day is \$28.00

5. Camp support costs are \$252/day based on one cook at \$65/day, one first aid attendant at \$75/day, and room and board at \$28/day for cook, first aid attendant, helicopter and helicopter engineer.

Cost statement, DDH 17, for work applied to Red River 2 and 3 mineral claims:

DDH	17, 487 ft.(148.44 m)	
Dates Drilled	September 10 - 14, 1980	
Group	Red 1	
Claim	Red River 2	
Drilling	487 ft. @ \$17.50/Ft.	\$8,522.50
Labour	126 hr. @ \$19.00/hr	2,394.00
Fuel	153 gal @ \$ 3.60/gal.	550.80
Survey Instrument	4 days @ \$25/day	100.00
Core Boxes	20 at \$5/ea.	100.00
Helicopter	11.2 hr. at \$385/hr.	4,312.00
	4.0 hr. @ \$525/hr.	2,100.00
Geologist and Assistant	5 days at \$90 avg/day	450.00
Room and Board 6 men	5 days @ \$28.00/day	840.00
Camp Support Costs	5 days @ \$252/day	1,260.00
	TOTAL	\$20,629.30
Total drilling cost per feet:		\$42.36
Total drilling cost per metre:		\$138.97



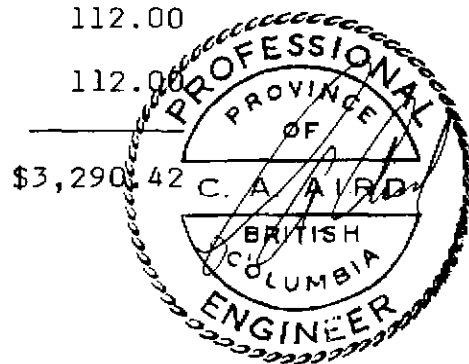
## Cost Statement for Work Applied to Red River Mineral Claim:

Work Dates            September 16 - 17, 1980  
 Group                 Red 1  
 Claim                 Red River

Geologist and Assistant (logging and splitting core from DDH 17) 2 days at \$90 avg./day	\$180.00
Assays 41 @ \$8.75	358.75
1 @ \$12.00	12.00
1 @ \$15.25	15.25
4 @ \$18.50	74.00
2 @ \$21.75	43.50
Air Freight, assay samples, 500 lb at \$0.54/lb	270.00
Demob of drill from DDH 17 to Whitehorse, 6.92% of \$24,970.00	1,727.92

(The mob-demob cost is claimed on only 415 feet of DDH 17 because the drilling beyond 415 feet exceeded the planned 6000 feet for which the mob-demob cost was calculated.)

Helicopter, assay samples to Stewart, 1 hr at \$385/hr	\$385.00
Room and Board, 2 men, 2 days @ \$28/day	112.00
Room and Board, 4 men, 1 day @ \$28/day	112.00
<b>TOTAL</b>	<b>\$3,290.42</b>



STATEMENT OF QUALIFICATIONS

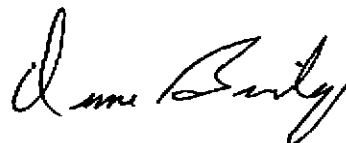
I, Larry J. Ferguson, hereby certify that I received my B.Sc. Honours in 1974 from Carleton University and my M.Sc. in 1977 from the University of Western Ontario. I have been practicing as a geologist for 7 years.



L. J. Ferguson

STATEMENT OF QUALIFICATIONS

I, Dane A. Bridge, hereby certify that I received my B.Sc. Honours in 1969 and M.Sc. in 1972 from the University of Manitoba. I have been practicing as a geologist for 12 years.



D. A. Bridge

IMPERIAL OIL LIMITED  
MINERALS SECTION  
DRILL LOG

PROJECT <i>Sulphurets 2153</i>		GROUND ELEV.
HOLE NO. <i>17</i>		BEARING <i>215</i>
LOCATION <i>Brucejack Lake</i> <i>42m at 040° from Shoueing</i>		DIP <i>-45°</i>
LOGGED BY <i>L. Ferguson Geologist</i>		TOTAL LENGTH <i>148.44m</i>
DATE <i>Sept. 13, 1980</i>		HORIZONTAL PROJECT
CONTRACTOR <i>Arctic</i>		VERTICAL PROJECT
CORE SIZE <i>BQ</i>		ALTERATION SCALE
DATE STARTED <i>September 11 (drill/start Sept. 12 AM)</i>		absent slight moderate intense
DATE COMPLETED <i>September 13 (8 PM)</i>		TOTAL SULPHIDE SCALE
DIP TESTS		traces only < 1% 1% - 3% 3% - 10% > 10%
Depth	Dip	AZ. on G.T.H.
<i>145.39</i>	<i>-30</i>	<i>208</i>
<i>114.91</i>	<i>-31</i>	<i>214</i>
<i>84.43</i>	<i>-33</i>	<i>216</i>
<i>53.95</i>	<i>-35</i>	<i>217</i>
<i>23.23</i>	<i>-40</i>	<i>222</i>
COMMENTS		LEGEND

17

PAGE 1 OF 10

PROJECT:

MOLE NO. 17

DEPTH (METRES)	%Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION			
				0-4.27 Overburden: 3.76-4.27 cored				
5				<p><del>W. 277</del></p> <p>Altered 4.27-198.44: Altered Volcanic Tuff / light grey / light green, intensely sericitized with fine to medium grained; quartz veins common; to sericite but also may be a result of some chlorite; moderate foliation common; fine grained qtz-feldspar; quartz veins and veins common throughout; quartz veins typically contain more pyrite - often in thin grey or grey layers in a granular host; small sericitic spots common; thin secondary contact veins; <sup>work a minor feature</sup></p>				
10				<p>4.27-10.4: oxidized qtz veins and fractures; throughout</p> <p>8.6: locally bleached; small porphyry clasts?</p> <p>9.3-10.5: altered feldspar rich crystalline abundant white feldspar (&lt; 2mm) in sericite</p> <p>11.8: rich host; probable relict f. effacesius texture</p>				
15				<p>4.27-17.5: patchy grey py-rich zonation common;</p> <p>Veining very variable and irregular in orientation throughout; sericitization of f. effacesius material pervasive; relict f. effacesius? material common throughout</p>				
20				<p>20.55-20.85: barite-qtz vein.</p>				
25				<p>23.13: 1cm veinlet barite core, qtz on outside edges of veinlet.</p> <p>24.7: relict f. effacesius? sericitized in a sericitic host; possibly f. effacesius?</p>				
30								

Foliation 55°/A

Contact 45°/64/A

Foliation 45°/A

Foliation 45°/A



	MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	SAMPLE INTERVAL	SAMPLE WIDTH	ASSAY NUMBER	% COMPOSITE ASSAYS			COMPOSITE ASSAYS	
						Cu	Mo	Zn		Av
5	427-11844: disseminated py only sulphide except where noted; overall 3 to 10%; locally as bursts <1% in green sections and 20-25% in the grey partings		4.27	1.73	1845				.002	.09
	layers; veins usually 2-10% sulphide although host within adjacent to veins are strongly pyritized; quartz calcite barite veins locally contain minor cpy, gal, sphalerite and possible telluride?; most mineralized veins parallel		6.0	3.0	1846				.001	.10
10	foliation; at least some or perhaps all of the telluride might be sphalerite and galena; the telluride locally occurs as wires and fine grains in hardening cracks in py veins. It is soft, silver luster, with a black streak.		9.0	3.0	1847				.001	.09
			12.0	3.0	1848				.002	.10
15			15.0	3.0	1849				.002	.11
			18.0	3.0	1850	.001		.09	.001	.12 .03
20	20.55-20.85: thin trace fine grained cpy and galena with waxy patches telluride black soft, silver luster) near upper contact		21.0	3.0	1851				.010	.21
25	23.13: 1cm veinlet with minor cpy and telluride occurring as little shivers in the veinlet; veinlet parallel foliation; possibly sphalerite;		24.0	3.0	1852				.048	6.93
			27.0	3.0	1853				.001	.14
30	27.44: 1/2cm sh-barite veinlet rich in sphalerite occurring as shivers along hair-line fractures py-rich matrix along veinlet; veinlet parallel foliation;		30.0							

DEPTH (METRES)	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION			
				-32.7:				
				32.51 py-sericite spotting; clusters of fine py in a gray sericite host				
		Foliation 50-55°/A		32.5-34.4: abundant tiny white feldspars oriented parallel foliation				
35				34.0-34.75: brecciated qtz veining; fragments of vein host stretched; locally py-rich groundmass, orientation irregular (20-50°/A)				
		Foliation 57°/A		37.8-40.2: intense milky white qtz veining with local calcite; wispy sericite patches of host common				
40								
				42.5-44.8: intense qtz veining				
45		Shear 50-60°/A		45.8: 66cm shear zone; mud and crushed material				
		55°/A Foliation		50.5-54.5: gray less sericitized, more qtz of foliation zone; gradational boundaries				
				52.65: altered fine grained clastic?? detritus				
55				57.0				
		55°/A Foliation						
60				59.8-75.6: strong qtz veining				





MINERALIZATION DESCRIPTION	TOTAL SULPHIDE	SAMPLE INTERVAL	SAMPLE WIDTH	ASSAY NUMBER	% ELEMENTS			COMPOSITE ASSAYS	
					Cu	Mo	Zn	Au	Ag
59.8-69.4 locally minor to trace amounts of black telluride or sphalerite associated with quartz veins		63.0	3.0	1864				.004	.39
		66.0	3.0	1865				.003	.30
68.6-69.0 = strong sphalerite mineralization with or without pyrite occurring in patches & fractures within the quartz vein; quartz vein subparallel to foliation; <del>etc.</del>		69.0	3.0	1866	.008		.08	.068	.81 .02
		72.0	3.0	1867				.011	.51
			3.0	1868				.005	1.12
		75.0							
			3.0	1869				.001	.17
		78.0							
			3.0	1870				.002	.12
80.9-82.0: minor <del>py</del> gal locally with the barite and quartz veins locally strong sphalerite mineralization in fractures and possible forms <del>etc.</del> mag; probably pale sphalerite locally <del>etc.</del> especially at 81.2 and 81.96;		81.0	3.0	1871	.036		.17	.027	1.82 .09
		84.0							
			3.0	1872				.005	.28
		87.0							
			3.0	1873				.002	.10
		90.0							

*JA*

DEPTH (METRES)	%Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION			
95				93.05-93.18: Qtz vein, <del>fr</del>				
105				104.65-113.1: less altd. congl. tuff; more qtz, feldspat. but still green and strongly sericitized; rich in fine grained feldspat. which is slightly coarser sericitized material; variation in altn is quick but gradational.				
115				113.8-114.8: strong qtz veining; some sericitic shears, probably; well fractured				
120								



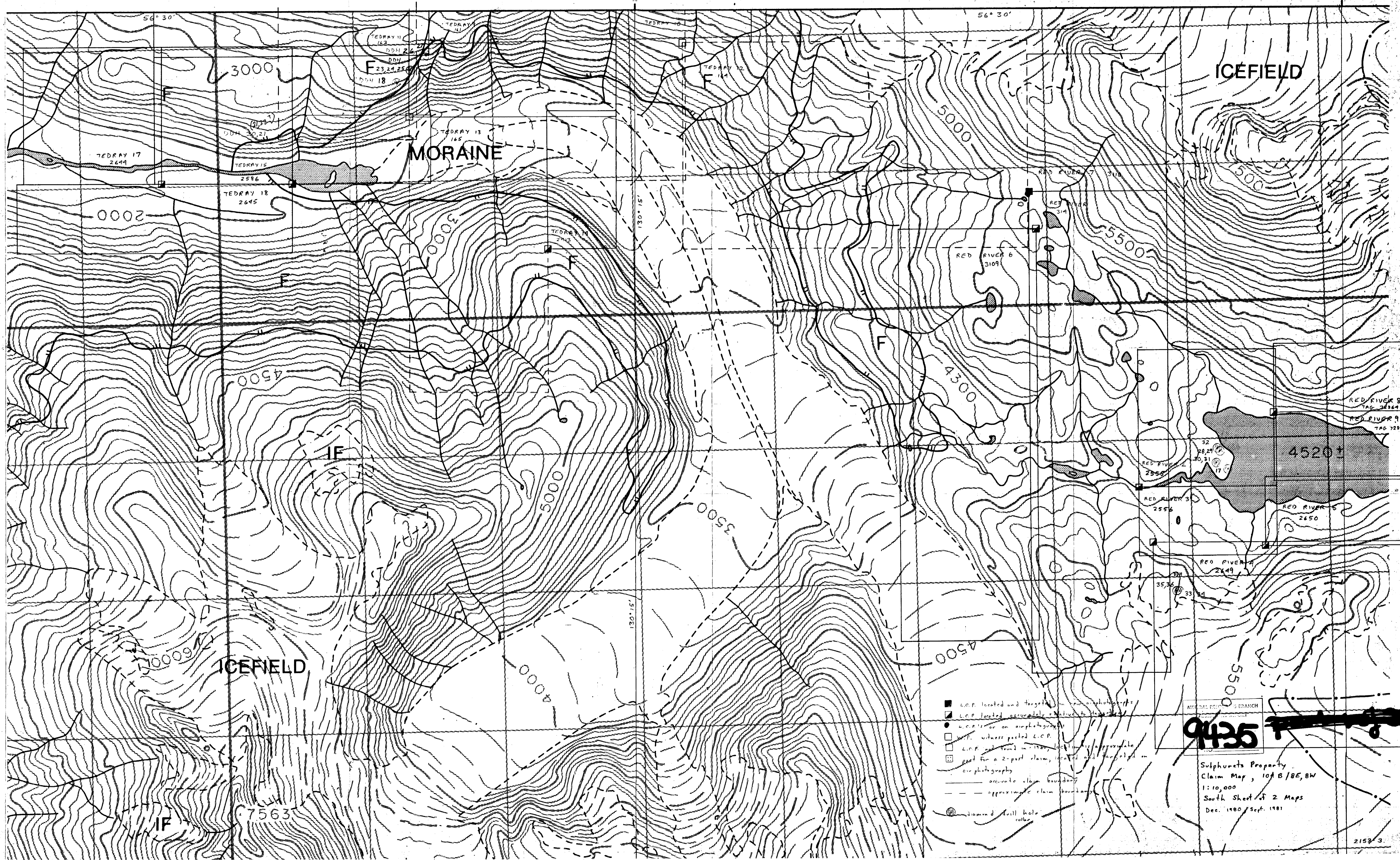
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DEPTH (METRES)	% Core Recy	LITHOLOGY	STRUCTURE	GEOLOGICAL DESCRIPTION	ALTERATION			
125								
130				130.9: 2cm mud seam; shear 31.0, 131.06: py seams 131.1-131.4: finely bedded sequence of sericitized siltstone?				
135		75% / A		134.9: bedding contact?				
140				138.7-139.3: crushed and granulated locally; shearing probable.				
145				140.0-141.2: strong qtz veining; probable precipitation; intense sericite locally and strong pyritization locally, 143.5-143.75: qtz vein with white barite				





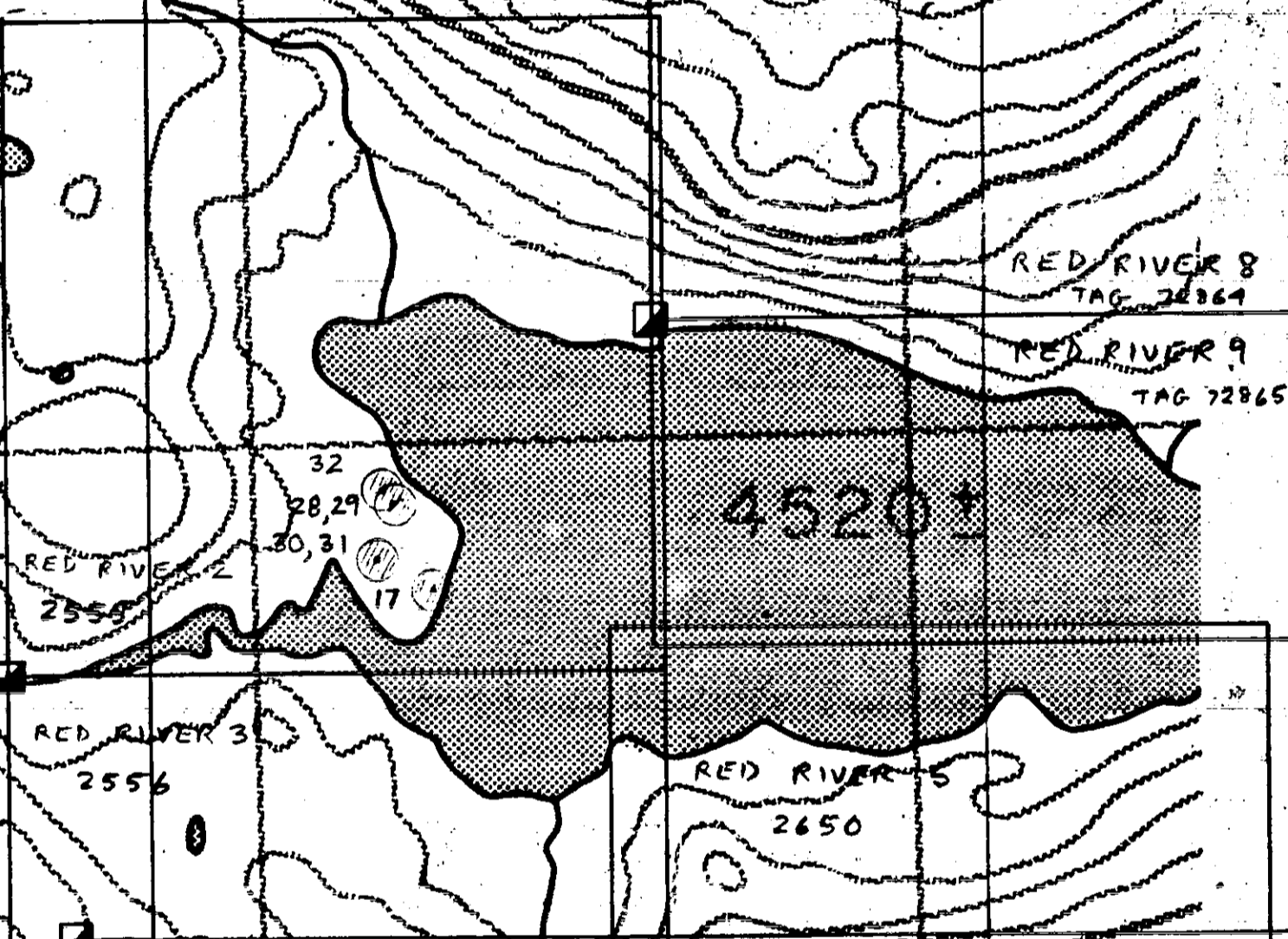




MORaine

ICEFIELD

ICEFIELD



- L.C.P. located and targeted in aerial photography
- L.C.P. located accurately in aerial photography
- L.C.P. located on an aerophotogram
- L.C.P. witness posted L.C.P.
- L.C.P. not found in 1980, but target of appropriate post for a 2-part claim, located and targeted in aerophotography
- accurate claim boundary
- - - approximate claim boundary
- ⊙ diamond drill hole collar

MINERAL DEVELOPMENT BRANCH  
**9435**

Sulphurets Property  
 Claim Map, 10A B/BE, BW  
 1:10,000  
 South Sheet of 2 Maps  
 Dec. 1980/Sept. 1981