

MAR 19680075: MIKKWA RIVER

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ECONOMIC MINERALS
FILE REPORT No.
S-AF-080(1)

19680075

REPORT ON FIELD WORK

OF SAMPLING PROGRAM

IN THE

MIKKWA RIVER PROSPECT AREA

OF

ALBERTA, CANADA

FOR

BURN OIL LAND SERVICE

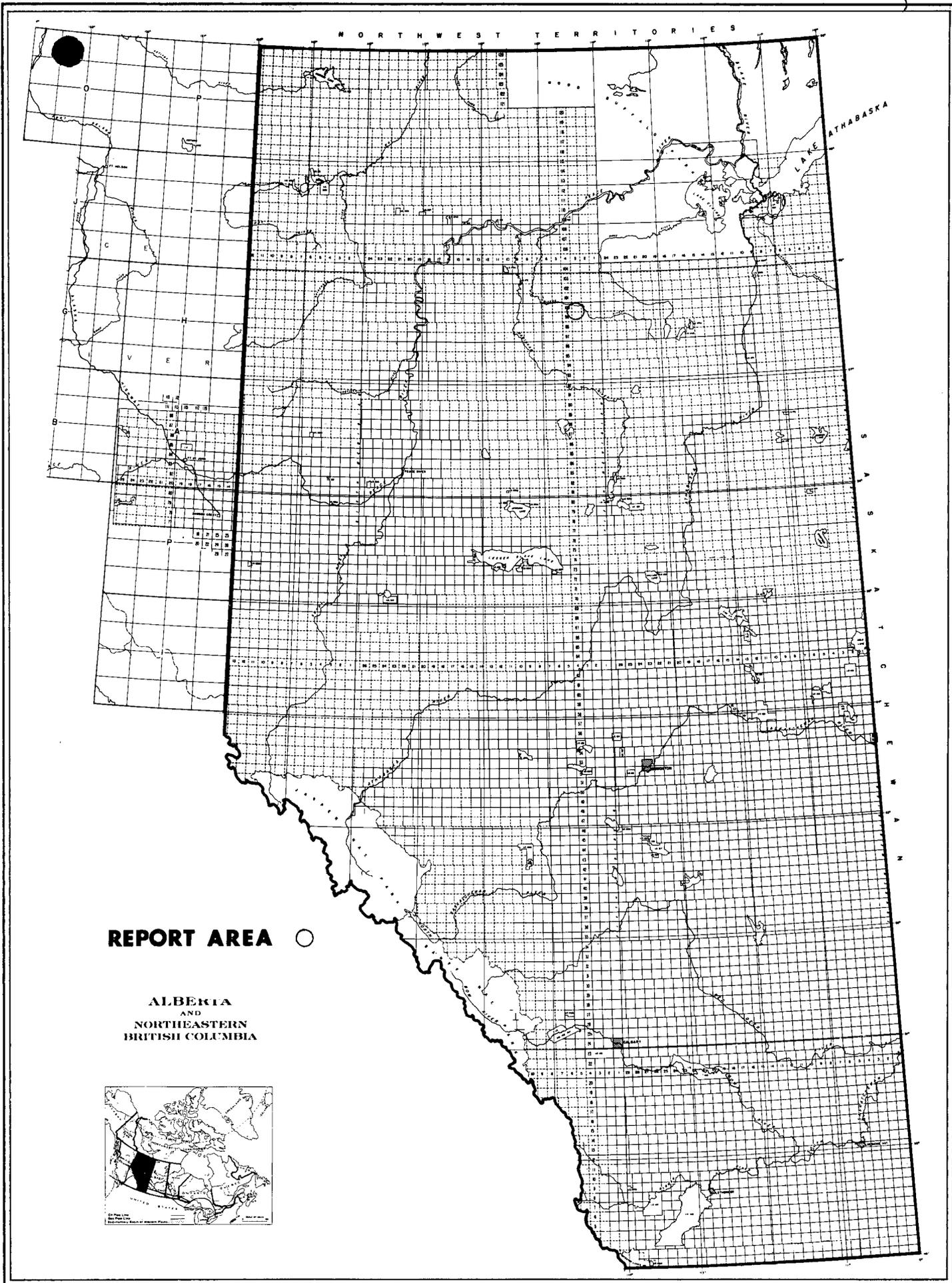
BY

SIGMA EXPLORATIONS LTD.

PROJECT NO. 80

Calgary, Alberta, Canada

December, 1968



REPORT AREA ○

**ALBERTA
AND
NORTHEASTERN
BRITISH COLUMBIA**



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Map No.

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| 1 | BORE HOLE LOCATION & NUMBERS MAP |
|---|----------------------------------|

LOCATION OF AREA

The Sulphur Permit is located in Northern Alberta, Twp. 99, 100 & 101, Rges. 3 & 4, W.5M., approximately 90 miles southeast of the Fort Vermilion settlement, on a broad up-land plain situated between the prominent Birch Mountains to the east and the Buffalo Head Hills to the west. Permit number 80 slopes gently to the northwest with an elevation of some 1600 feet observed in the southeast corner of the Permit area decreasing to an average elevation of 1400 feet to the northwest. Thus about 200 feet of relief is present over the Permit. The entire area covered by Permit 80 is cut by the Mikkwa River which flows into the area at the southeast corner and out at the northwest corner. The general drainage pattern is to the northwest with all small creeks draining into the larger Mikkwa River system.

Forest cover over most of the prospect area grades from light to medium with some stands of potentially commercial timber observed at the southeast corner of the Permit and along certain areas of the Mikkwa. As no line cutting of any sort was conducted on this Permit during the survey no destruction of timber or other forest cover was necessary.

Access

Access to the area was gained by the use of a Bell G-2 Helicopter exclusively. Although some old seismic trails were

observed leading to the area, great difficulty would have been experienced in attempting to travel these lines with any wheeled or tracked equipment at present. Because of the innumerable creek crossings found on these lines which are washed out, it would have been necessary to do a reconstruction of the snow bridges by bulldozing trees and snow into the creeks before the lines could be used for access.

The area is very remote and no activity of seismic crews or drilling were observed anywhere near the Permit area. It might also be noted that no usable airstrips are available for fixed-wing aircraft within 40 miles of the Permit.

Weather

Weather conditions encountered during the survey were severe, with high temperatures during the day only reaching -30° below zero and the lows at night at $40-45^{\circ}$ below. Deep snow was encountered over the entire Permit area and deep frost conditions existed in the ground where any moisture content was present in the soil.

No cloud or falling snow was encountered while flying to and from the prospect, however ice crystals and ground-haze tended to limit visibility to 5-10 miles.

FIELD OPERATIONS

Field operations were commenced on the prospect on December 13, 1968 and concluded on December 14, 1968. During

this period a total of 12 surface samples were taken from various locations on Permit 80 and studies were made of the area regarding surface topography and drainage patterns. Further to this long stretches of the Mikkwa River were traversed by foot, where cut-bank conditions gave good indications of the near surface geology.

No bulldozers or track-mounted drills were utilized in this program because of the remoteness of the area, and thus no lines were cut or holes drilled in the Permit. Attempts were made to manually drill through the frost at certain areas near an abandoned drilling location, however this method of sampling proved impossible because of the presence of 18-20 inches of frost in the surface soil.

Because of the expense of having the helicopter on stand-by while working in the area it was considered more prudent to utilize the aircraft almost exclusively in exploring the river rather than attempt any sort of a drilling program along existing seismic cut lines.

Mapping control was maintained by identifiable features along the Mikkwa River and also by existing cut lines found west and south of the river.

Sampling

As it was not possible to drill holes into the overburden, it was decided to only take one sample per location

and attempt to resolve the presence or absence of commercial deposits of sulphur in this Permit by chemical analysis of the surface soil conditions. A total of 12 samples were taken over the Permit area with 9 of these samples being collected at various points along the Mikkwa River bank, and 3 surface samples were taken on the flat muskeg plain south and west of the river.

The list of the assay values for the sulphur content of the samples is included in the back of this report.

Surveying

No vertical control was carried over the Permit area and all horizontal control was taken from prominent geographical features along the Mikkwa River, and also from existing seismic lines found in the area. All sample locations are considered to be quite accurate however, as the Mikkwa River shows many easily identifiable features along its water course, and close agreement was observed in the location of the seismic cut lines on Forestry maps and the features of the river. It is thus considered that all sample locations plotted are accurate horizontally to within plus or minus 300 feet of the location shown.

Sample locations were also permanently marked by blazing trees a few feet from the cut line or river and marking the location on the tree with ink pen and metal tapes nailed to the tree. Thus each of the sample locations can be easily re-established for future reference.

RESULTS & RECOMMENDATIONS

A review of the results of the assays for the twelve areas tested in Permit number 80 disclose that only minute quantities of elemental sulphur are present in Permit number 80. However, it should be noted that only a very general survey was possible, and therefore the area should not be completely condemned by the information available.

However, it must also be noted that the Permit lies in a very remote section of the Province and is separated from any existing access roads, railroads, etc. by many miles of very inhospitable muskeg. At present it would be only possible to reach the prospect during winter months by extensive bulldozing and snow plowing to construct a very rudimentary access road.

Because of the lack of elemental sulphur shown in the assays, as well as the remote location of Permit number 80 to existing transportation at this time, it would be recommended that this Sulphur Permit be released back to the Government of Alberta as it is not considered economically feasible to attempt additional work in such a remote area from the evidence indicated by this survey.

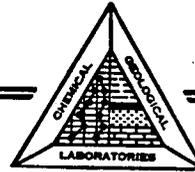
Respectfully submitted,


J. D. Fowlie, Supervisor

Approved 

W. N. Rabey, P. Eng.

CHEMICAL & GEOLOGICAL LABORATORIES LTD.



14240 - 115 Avenue, Edmonton, Alberta
4605 - 12th Street N.E., Calgary, Alberta

Dec. 20, 1968

Report: C68-4431

Mr. J. Fowlie
c/o Sigma Explorations
309 - 8th Ave. S.W.
Calgary, Alberta

12 samples for elemental sulphur

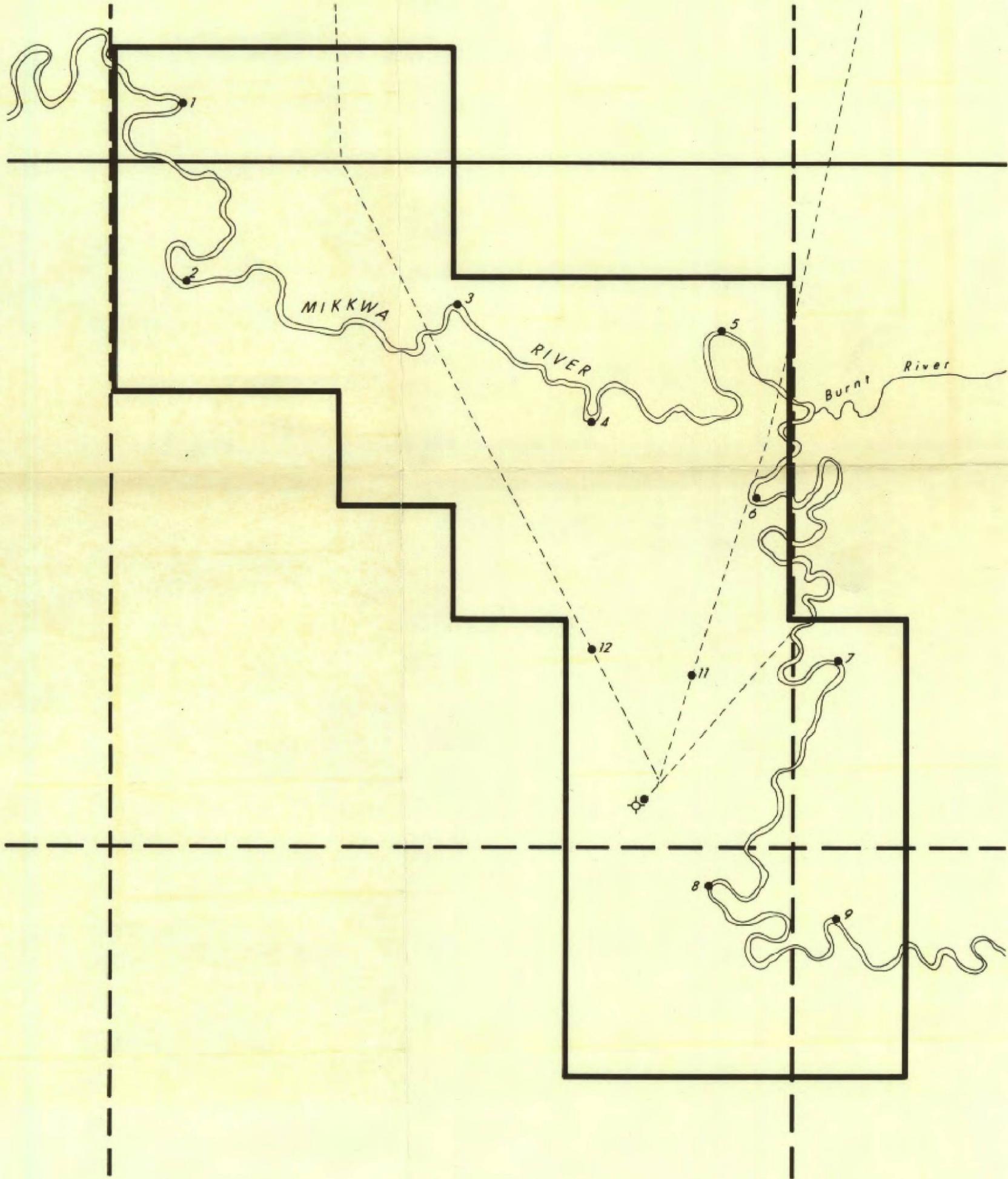
| Sample # | % elemental sulphur ondry sample |
|----------|-------------------------------------|
|----------|-------------------------------------|

| | |
|---------|-------|
| 80 - 1 | trace |
| 80 - 2 | trace |
| 80 - 3 | 0.16 |
| 80 - 4 | trace |
| 80 - 5 | trace |
| 80 - 6 | 0.56 |
| 80 - 7 | 0.81 |
| 80 - 8 | 1.35 |
| 80 - 9 | trace |
| 80 - 10 | trace |
| 80 - 11 | trace |
| 80 - 12 | trace |



Rge. 4

W.5 M.



Twp. 100

Twp. 99

• SURFACE SAMPLE POINTS - Dec. 16/68



SIGMA EXPLORATIONS LTD.

309 8th Ave. SW. Calgary, Alberta Phone 254-7865

**SULPHUR EXPLORATION PROGRAM
PERMIT No. 80**

SCALE: 1" - 1 Mile

DEC / 1968

*2700801
1-21-68
1-21-68*

SULPHUR PROSPECTING PERMIT No. 80

BURNOIL LAND SERVICE LTD.,
4608 — 15th. STREET S.W.,
CALGARY, ALBERTA.

DATE OF ISSUE — JANUARY 8, 1968
AREA — 19,840 ACRES.

TP. 101

TP. 100

TP. 99

R. 4

R. 3

R. 2 W. 5 M.

84 G/9-10