

MAR 19690049: FORT VERMILION

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ECONOMIC MINERALS

FILE REPORT No.

S-AE-026(3)

TEMPLETON EXPLORATION LTD.
XXXXXXXXXXXXXXXXXXXX
CALGARY, ALBERTA

#537 - 320 Seventh Avenue S.W.
Calgary 2, Alberta

April 25, 1969

Inland Chemicals Canada Ltd.
P. O. Box 4183
Station "D"
VANCOUVER 9, British Columbia

Attention: Mr. R. Campbell

Dear Sirs:

Summary Geological Report
Sulphur Prospecting Permits
No's. 19, 25, 26, 27, Alberta

The above-noted Sulphur Prospecting Permits, all located in the general Fort Vermilion area of Alberta, were issued to Inland Chemicals Canada Ltd. Permit No. 19 was effective November 31, 1967 and Permits No's. 25, 26, 27 were effective December 9, 1967.

Location

Permit No. 19 is located along the Mikkwa River, 37 miles southeast of Fort Vermilion. Permits 26 and 27 are located along the Wabasca River, 53 miles and 37 miles respectively south-southeast of Fort Vermilion. Permit 25 is located along the Wentzel River northeast of Fort Vermilion, a distance of 45 miles.

Summary of Exploration

J. C. Sproule and Associates undertook a geological study of the area to evaluate the permits and recommend an exploration program for the various permit area. This study was carried out in November and December 1967 and is summarized in a report "Photomosaic and Field Reconnaissance Study Selected Sulphur Prospecting Permits Fort Vermilion Area, Alberta."

The Sproule study consisted of a study of subsurface information available from wells drilled in the area, a photogeologic study, and a helicopter-assisted field reconnaissance program.

The subsurface and photogeologic study resulted in the mapping of several possible faults along which it was felt that favorable surface sulphur occurrences

might be found. It was postulated that the sulphur encountered on the Madison Permit No. 8, was related to fracturing or faulting which allowed sulphur-bearing gases or fluids to escape from Devonian limestones into the overlying clay and shale deposits. The helicopter-assisted field program visited selected areas on and near the various permit areas. Some indications of underground springs were found on Permits 19, 25 and 26. Auger samples taken at various locations were analyzed. Analysis of samples taken from Permit 25 indicated small sulphur values (5%), while no significant sulphur was detected from other samples on the permit areas.

J. C. Sproule and Associates recommended an evaluation program, involving further air-photo study, field investigation, geochemical studies and a test-hole program.

In February 1968, arrangements were made with Hudson's Bay Oil and Gas Company Limited to analyze surface and near surface samples obtained from shot holes drilled on Hudson's Bay's seismic exploration program in the area. Samples were analyzed on shot holes located on and adjacent to Sulphur Permits 19 and 27. No significant indications of sulphur were detected from these analyses.

In June 1968, Templeton Exploration Ltd. undertook a study of the area on behalf of Inland Chemicals. This study consisted of review of previous information which had become available, and investigation of various exploration methods which might be practical for the area. Various core hole projects being undertaken by others in the area were considered, but rejected on the basis that further surface studies were required prior to planning a drill program. Air photo and subsurface geological interpretations indicated Permit No. 25 presented the best possibilities for commercial sulphur deposits. As a result of this study, it was recommended that Inland Chemicals carry out a further surface geological study with emphasis to be placed on Permit 25.

In August 1968, a surface geological party, air-assisted by airplane and helicopter, carried out ground work primarily in the Wentzel River area on Permit No. 25. Surface locations previously discussed in the Sproule report and other areas primarily along the Wentzel River, were examined and samples taken where there was indication slumping or discoloration of the shales. One sample taken in the same location previously sampled by Sproule, showed sulphur content of up to 10%. However, mapping of this area indicated this to be very thin and very localized. Samples taken at six other locations along the banks of the Wentzel River showed no indications of sulphur. Samples were taken of the sulphur deposit on Madison Sulphur Prospecting Permit No. 8, in order to make direct comparison. These samples on analysis, proved to contain 89% sulphur.

The surface work undertaken by D. T. Cosgrove, Consulting Geologist, is recorded in a report "Geological Field Reconnaissance Study of Inland Chemicals Sulphur Permit No. 25 Wentzel River, Alberta."

Summary and Recommendations

Following is a summary of the results of past work and recommendations for the four permits:

Sulphur Prospecting Permit No. 19

As noted by the Sproule report, there is some evidence that an out-cropping of Devonian limestone occurs on this permit. Airphoto studies also indicate the possible existence of a fault through this permit. Insufficient surface investigation has been carried out on this permit to determine the possibilities.

Sulphur Prospecting Permit No. 25

Surface showings of sulphur have been found and traced along the banks of the Wentzel River. These showing are not of sufficient grade nor are they extensive enough to warrant additional expenditures. It is recommended that this permit be dropped.

Sulphur Prospecting Permit No. 26

No indications of sulphur have been noted on this permit. It should be noted that the permit area lies approximately 70 miles southwest of the Madison deposit. Available subsurface information indicates that a minimum of 400 feet of Cretaceous beds overlie the Devonian. Since there are no indications of sulphur in this area, and several deep drill holes would be necessary to explore the permit, it is recommended that this permit be dropped.

Sulphur Prospecting Permit No. 27

No indications of sulphur have been found on the surface either on or within the vicinity of this permit. At least 500 to 600 feet of Cretaceous deposits are expected to overlie the Devonian. Permit No. 27 is located approximately 50 miles southwest of the Madison deposit in an area where no sulphur showings have been reported. Analysis of surface and near surface samples obtained from seismic shot holes on this permit, gave no indication of any significant sulphur content. It is recommended that Sulphur Prospecting Permit No. 27 be dropped.

Yours truly,



C. W. Templeton

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