MAR 19680039: WENTZEL RIVER

Received date: Dec 31, 1968

Public release date: Jan 01, 1970

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ECONOMIC MINERALS FILE REPORT NO. S-AF-6244(1)

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ECONOMIC MINERALS FILE REPORT No. S-AE-024(1)

REPORT ON FIELD WORK

OF CORE DRILLING

IN THE

WENTZEL RIVER SULPHUR PROSPECT AREA

OF

ALBERTA, CANADA

FOR

BRITISH AMERICAN OIL COMPANY

BY

SIGMA EXPLORATIONS LTD.

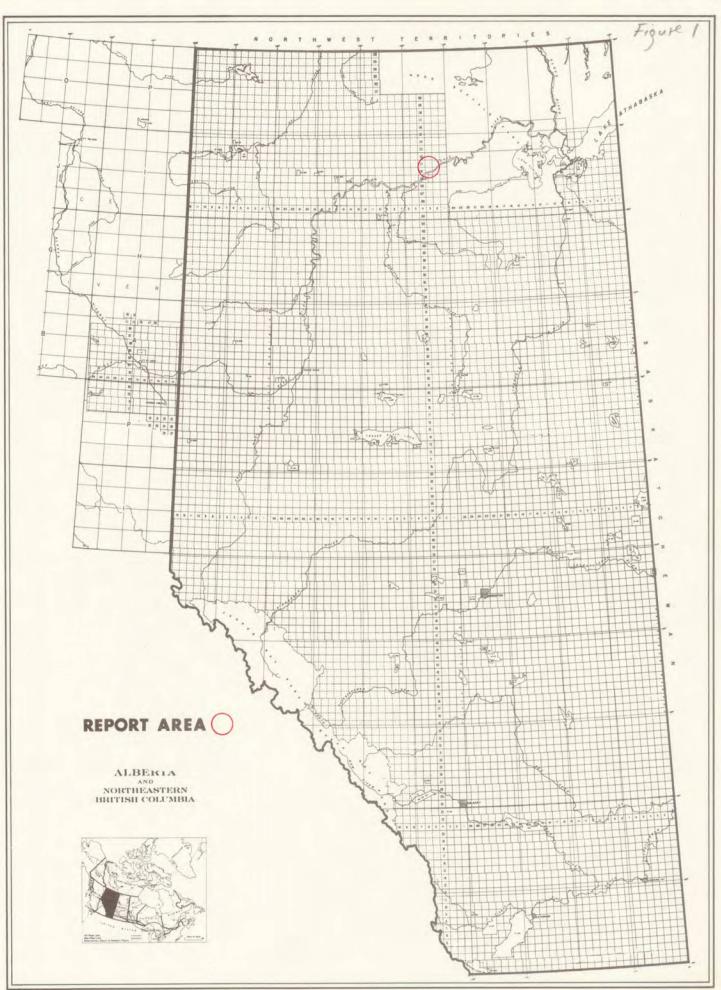
PROJECT NO. 24

Calgary, Alberta, Canada

April, 1968

Interim Report Only

INDEXING DOCUMENT NO. 700328



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1	BORE	HOLE	LOCATION A	S NUMBE	IRS MAP
2	MAP	SHOWIN	G INITIAL	ASSAY	VALUES

LOCATION OF AREA

The Sulphur Permit is located in Northern Alberta, Twp. 110 and 111, Rge. 2 to 4 W.5M., approximately six miles north of the Fox Lake Indian Reserve No. 126, 18 miles west of Wood Buffalo National Park and 55 miles east northeast of the Village of Fort Vermilion.

Topography

Permit Number 24 is located on a series of broad terraces, north of the Peace River. The average surface elevation of the area is approximately 1100 feet above sea level and no severe elevation changes were encountered over the area.

The general drainage pattern is toward the south southeast with the Wentzel River draining the west portion of the permit, Waldo Creek draining the east portion and Rennie Creek draining the central part of the area. All the streams flow south into the Peace River.

Forest cover throughout most of the prospect area graded from very light to medium with some heavy stands of spruce occurring in the northwest portion of the permit, particularly along the Wentzel River. Very little muskeg or swamp was encountered on any of the lines and no commercial timber was destroyed in line cutting operation.

Access

Access to the area was gained by a graded road running east from High Level along the north bank of the Peace River. This route is east of the Fort Smith road and is maintained both winter and summer by the Swanson Lumber Company over which logging trucks operate some nine months of the year. All small creeks have culverts built under the road and two log bridges cross the Lawrence River and the Wentzel River. From a point tan miles west of the Lawrence the highway is maintained and operated by the Alberta Department of Highways and steel bridges are in place over major streams and rivers.

No airstrips were located in close proximity to the camp and all supplies had to be brought in by truck. This presented some problems during the last few days of operation, when unseasonably high temperatures thawed the frost out of the road.

Weather

The weather conditions encountered during the field operation were unseasonably warm with day temperatures of $\pm 40^{\circ}$ to $\pm 50^{\circ}$ general in the area. During the latter stages of the program care had to be taken that no permanent damage was done to the main access road. On March 26 the decision was made that further work in the area would damage existing road and trails and operations were suspended until after spring break-up.

FIELD OPERATIONS

Field operations were commenced on the permit on March 19, 1968, and concluded March 26, 1968. During this period a total of 5022 feet of core drilling were completed and some 56 miles of line cleaned or cleared by bulldozers.

Bulldozer operations were started on March 19 using two bulldozers: a Caterpillar D-7-E and a Caterpillar D-6-C. Two shifts were operated continuously on each machine to clean new lines and snowplow existing lines.

No major problems were encountered except the D-7-E broke through a creek on March 25 and spent some ten hours in the creek before it could be winched out by the other machine.

During this period a total of 31 miles of new line were cut and cleared and 25 miles of existing line were snowplowed. A total of 280 bulldozer hours were utilized on this permit with the bulldozer averaging 7.6 hours per mile of new line cut and 1.6 hours per mile of snowplowing. All new lines that required cutting and cleaning were completed during this time so that no line cutting would be necessary after spring break-up.

Drilling

The Becker Hammer drills EMT-1 and 508 arrived in camp on March 21, 1968, and drilling operations were commenced on March 22. The BMT-1 rig was operated with two shifts 24 hours a day while rig 508 was operated on a single shift basis in daylight hours. The drill program was suspended on March 26.

No known Paleozoic bedrocks were encountered in this area, however, some hard consolidated shales were cored near the centre of the prospect. These shales graded from dark gray to black and were encountered at depths between 35 to 50 feet. A very few of the holes were cut off at shallow depths where the drillers assumed they had struck bedrock, however, these locations were more probably areas where large boulders were encountered because of their random occurrences. Most of the holes contained sands and clays with a few rocks in the clay but no major gravel deposits were encountered generally over the area.

During the period March 22 to March 26 a total of 153 holes were drilled with the average depths being 50 feet in the north and 20 feet over the balance of the prospect. The drillers averaged 360 feet per hour on this prospect including setting up and moving time. No difficulties were encountered in completing holes except where boulders were encountered. In order to complete as much of the program as possible a minimum of time was spent drilling through these boulders.

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Sampling

An average of 13 samples were taken per hole on the 50 foot holes and seven samples were taken on the 20 foot holes. Sampling rates for all holes were at two foot intervals to a depth of ten feet, and at five foot intervals from ten feet to the bottom of the hole. Clean representative samples were obtained from each hole.

Most holes started in sand or sandy brown clay. Very few problems were encountered in getting samples in any of these materials except in some of the water-soaked clays which appeared to stick to the sides of the drill stem and came out of the discharge hose in lengths of five to eight feet. Fortunately, very little of this material was encountered. Results of the assays, the majority of which were taken at the six foot depth, are contained in the back of this report.

Plugging

Holes were plugged with metal Trojan hole plugs or four foot wooden hole plugs in accordance with the required geophysical regulations.

Surveying

No vertical control was carried over the permit area, but horizontal control was maintained by chaining. A transit was used to turn off angles for the new cut lines and to check angles at intersections of existing lines. Control was established from maps made from aerial surveys showing existing seismic cut lines identifiable topographic features on the ground.

Bore hole locations were permanently marked by blazing trees a few feet from the cut-line and marking the hole number on the tree with ink pens and metal tapes nailed to the tree. Thus each of the hole locations could be easily re-established for future references

RESULTS & RECOMMENDATIONS

As this report is only a preliminary report no final conclusions can be drawn from the data until all work has been completed.

Because a second set of assays are required to complete the terms of the present project, it is recommended that a portion of the samples from each hole be batched from the ten foot to twenty foot depth and the mixed sample assayed to determine if increased sulphur values may occur at a greater depth.

At this point a decision could be made regarding doing additional assays in the areas of interest or possibly doing some detailed drilling programs in a few key areas once the crew can be moved back onto the prospect.

Respectfully submitted,

James D. Fowlie Supervisor

Approved:

W. N. Rabey, P. Eng.



OPERATOR: Si Attention: M KIND OF SAMPL	r. L. Marj	ations Ltd. anen of The British American Oi DATE RECEIVED Ap	REPORT NUMBER: C68 1 Company Limited ril 15, 1968	-3563 DATE REPORTED April 24, 1968	
		EMENTAL SULPHUR % by Weight)	SAMPLE DEPTH NUMBER IN FEET	ELEMENTAL SULPHUR (% by Weight)	
24-1-100	6	1.94	24-1-118 6	Trace	
24-1-101	8	0.84	24-1-119 6	0.40	
24-1-102	6	1.88	24-1-120 6	Trace	
24-1-103	6	0.75	24-1-121 6	Trace	· · ·
24-1-104	6	Trace	24-1-122 6	0.48	· ·
24-1-105	6	Trace	24-1-123 6	1.71	• :
24-1-106	6	Trace	24-1-124 6	Trace	
24-1-107	6	0.92	24-2-1 6	Trace	•
24-1-108	6	0.74	24-2-2 6	0.17	
24-1-109	6	1.43	24-2-3 6	Trace	
24-1-110	6	2.47	24-2-4 6	1.00	
24-1-111	6	Trace	24-2-5 6	0.28	•
24-1-112	6	0.74	24-2-6 6	Trace	·
24-1-113	6	2.17	24-2-7 6	2.03	• _ •
24-1-114	6	0.32	24-2-6 6	0.46	•
24-1-115	6	0.31	24-2-9 6	1.09	•
24-1-116	6	2.39	24-2-10 6	Trace	
24-1-117	6	0.47	24-2-11 6	2.69 continued	

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SAMPLE NUMBER	DEPTH IN FEET	ELEMENTAL SULPHUR (% by Weight)	SAMPLE NUMBER	DEPTH IN FEET	ELEMENTAL SULPHUR (% by Weight)
24-2-12	6	Trace	24-2-29	6	2.25
24-2-13	6	1.61	24-3-300	6	1.35
24-2-14	6	0.62	24-3-301	6	0.34
24-2-15	6	1.32	24-3-302	6	2.06
24-2-16	6	0.42	24-3-303	5	1.27
24-2-17	6	1.03	24-3-304	4	2.18
24-2-18	6	0.69	24-3-305	6	1.02
24-2-19	6	Trace	24-3-306	4	0.16
24-2-20	6	0.23	24-3-308	6	2.19
24-2-21	6	1.10	24-3-309	• 6	Trace
24-2-22	6	1.48	24-3-310	6	0.80
24-2-23	6	1.65	24-3-311	6	0.54
24-2-24	· · · ·	Trace	24-3-312	6	0.54
24-2-25	6	0.73	24-3-313	6	1.81
24-2-26	6	1.69	24-3-314	6	Trace
24-2-27	6	0.64	24-3-315	6	0.49
24-2-28	6	2.90	24-3-316	6	0.68

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	SAMPLE NUMBER	DEPTH IN FEET	ELEMENTAL SULPHUR (% by Weight)	SAMPLE NUMBER	DEPTH IN FEET	ELEMENTAL SULP (% by Weight	
	24-3-317	6	Trace	24-3-334	6	Trace	
	24-3-318	6	0.66	24-3-335	_ 6	0.90	
	24-3-319	6	0.65	24-3-336	6	0.40	
	24-3-320	6	2.39	24-3-337	6	Trace	
	24-3-321	6	1.21	24-3-338	6	2,13	
	24-3-322	6	0.53	24-3-339	6	.0.60	
	24-3-323	6	2.09	24-3-340	6	1.50	
	24-3-324	6	0.74	24-3-341	6	Trace	
	24-3-325	6	Trace	24-3-342	6	0.40	
	24-3-326	6	1.12	24-3-343	6	0.87	
	24-3-327	6	0.18	24-3-344	6	0.44	
	24-3-328	6	0.66	24-3-345	6	Trace	
	24-3-329	6	0.64	24-3-346	6	Trace	
		6	Trace	24-3-347	6	0.46	
	24-3-330	6	Trace	24-3-348	6	0.80	
	24-3-331		2.04	24-3-349	6	0.30	
	24-3-332	6		24-3-350	6	Trace	
	24-3-333	6	0.75				continued

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SAMPLE NUMBER	DEPTH IN FEET	ELEMENTAL SULPHUR (% by Weight)	SAMPLE <u>NUMBER</u>	DEPTH IN FEET	ELEMENTAL SULPHUR (% by Weight)	÷
2 4- 4-40 0	6	Trace	24-6-611	6	1.58	•
24-4-401	6	2.43	24-6-612	6	0.76	
24-4-402	6	1.27	24-6-613	6	2.33	
24-4-403	6	1.03	24-6-614	6	1.48	
24-4-404	6	Trace	24-6-615	6	0.62	
24-4-405	6	Trace	24-6-616	6	0.86	
24-6-600	6	1.80	24-6-617	6	1.23	,
24.6-601	6	1.21	24-6-618	6	1.53	
24-6-602	6	1.55	24-6-619	6	0.55	
24-6-603	6	Trace	24-7-700	6	Trace	
24-6-604	6	0.90	24-7-701	6	1.79	
24-6-605	6	Trace	24-7-702	6	1.87	
24-6-606	6	Trace	24-7-703	6	1.81	
24-6-607	6	1.85	24-7-704	6	1.91	
24-6-608	6	0.48	24-7-705	6	Trace	
24-6-609	6	Trace	24-7-706	6	2.67	· · ·
24-6-610	6	Trace	24-7-767	No Sample	e	•

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- Page 5 - CHEMICAL & GEOLOGICAL LABORATORIES LTD.



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SAMPLE DEPTH NUMBER IN FEET	ELEMENTAL SULPHUR (% by_Weight)	SAMPLE NUMBER	DEPTH IN FEET	ELEMENTAL SULPHUR (% by Weight)	
24-7-708	0•42	24-7-715	6	1.29	
24-7-709 25	0.98	24-7-716	4	Trace	
24-7-710 6	2.28	24-7-717	6	0.51	
24-7-711 6	0.43	24-7-718	6	3.16	
24-7-712 10	1.69	24-7-719	6	1.73	
24-7-713 4	Trace	24-7-720	4	0.65	
24-7-714 6	0.60	24-7-721	6	2.00	



14240-115 AVENUE, EDMONTON, ALBERTA

· CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Date Reported: May 16, 1968 Laboratory Report Number: C68-3602

SIGMA EXPLORATIONS LTD. for The British American Oil Company Limited

Kind of Sample: Soil Permit No.: 24

SAMPLE NUMBER	DEPTH IN FEET	ELEMENTAL SULPHUR (% by Weight)
24-1-100	10, 15	Trace
24-1-101	15, 25	1.87
24-1-102	10, 15, 20	0.24
24-1-103	10, 15, 20	0.56
24-2-1	10, 15, 20	2.01
24-2-2	10	2.60
24-2-3	10, 15, 20	2.85
24-2-4	H	2.12
24-2-5	П	0.71
24-2-6	H	1.27
24-2-21	10, 15, 20	Trace
24-2-22	е п.	2.07
24-2-23	II	0.35
24-2-24	n	0.45
24-2-25	"	1.13

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Sigma Explorations Ltd.

Laboratory Report Number: C68-3602

SAMPLE NUMBER	DEPTH IN FEET	ELEMENTAL SULPHUR (% by Weight)
24-7-700	10, 15, 20	Trace
24-7-701	"	2.31
24-7-702	"	Trace
24-7-703	п	2.15
24-7-704	п	1.37
. 24-7-705		2.03
24-7-706	п	1.17
24-7-708	35	1.93
24-7-709	25	0.10
24-4-400	10, 15, 20	3.04
24-4-401	"	1.63
24-4-402	"	Trace
24-4-403	н	2.02
24-4-404	H	Trace
24-4-405	IF	0.45
24-6-600	10, 15, 20	1.05
24-6-601	"	0.83
24-6-602	Ш	0.72
24-6-603	н	1.21
24-6-604	П.	Trace
24-6-605	"	1.46
24-6-606	"	Trace
24-6-607	н	Trace
24-1-104	10, 15, 20	0.86
24-1-105	10, 15	2.48
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Sigma Explorations Ltd.

Laboratory Report Number: C68-3602

SAMPLE NUMBER	DEPTH IN FEET	ELEMENTAL SULPHUR (% by Weight)
. 24-3-346	10, 15, 20	1.83
24-3-347		1.35
24-3-348	П	2.30
24-3-349	u	Trace
24-3-350	п	1.43
.24-6-615	10, 15, .20	1.26
24-6-616	10, 15	2.71
24-6-617	10, 12	0.68
24-6-618	10, 15, 20	0.67
24-6-619-	П	0.68
24-7-718	10, 15	0.55
24-7-719	H	0.29
24-7-720	10	1.31
24-7-721	10, 20	0.28
24-3-341	10, 15, 20	1.27
24-3-342	П	0.63
24-3-343	u	0.34
24-3-344	п	Trace
24-3-345	п	0.30
24-1-113	10, 15, 20	0.10
24-1-114	"	0.90
24-1-115	n	0.70
24-1-116	II	0.69
24-3-325	10, 15, 20	0.59
24-3-326	n	Trace

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Laboratory Report Number: C68-3602

SAMPLE NUMBER	DEPTH IN FEET	ELEMENTAL SULPHUR (% by Weight)
24-3-327	10, 15, 20	1.22
24-3-328	ана — н арана — селото на селото на Селото на селото на се	0.66
24-3-329	H	1.32
24-3-330	II .	0.55
24-3-331	п	1.91
24-3-332	n	0.73
24-2-26	10, 15, 20	2.18
24-2-28	"	1.21
24-2-29	u	1.71
24-1-106	10, 15, 20	Trace
24-1-107	10, 20	1.67.
24-1-108	10, 20	0.80
24-3-300	10, 15, 20	1.16
24-3-301	15, 20	0.41
24-3-302	10, 15, 20	1.27
24-3-303	10, 15	0.30
24-3-304	15, 20	0.40
24-3-305	10, 20	1.52
24-3-306	10, 15, 20	1.03
24-3-308		1.57
24-3-309	"	0.43
24-3-310	10, 15	1.21
24-3-311	10, 15, 20	0.36
24-3-312	10, 15	0.65
24-3-313	10-15	1.87

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SAMPLE NUMBER	DEPTH IN FEET	ELEMENTAL SULPHUR (% by Weight)
24-3-315	10	Trace ·
24-2-15	10, 15, 20	0.37
24-2-17	10, 11	Trace
24-2-18	10, 15, 20	0.73
24-2-19	n.	1.52
24-2-20	10, 20	Trace
24-3-316	10, 15, 20	Trace
24-3-317	10, 20	0.97
24-3-318	10, 15, 20	1.16
24-3-319		Trace
24-3-320	. II	0.84
24-3-322	П	1.74
24-3-323	н	1.33
24-3-324	· II .	Trace
24-7-715	10, 15, 20	Trace
24-7-716	25	0.92
24-7-717	10, 15, 20	1.47
24-1-117	10, 15, 20	1.43
24-1-118	"	Trace
24-1-119	"	1.08
24-1-120	n	1.33
24-1-121	п	1.71
24-1-122	n i i i i i i i i i i i i i i i i i i i	0.72
24-1-123 *	(H	1.19
24-1-124	n	2.82
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Laboratory Report Number: C68-3602

SAMPLE NUMBER	DEPTH IN FEET	ELEMENTAL SULPHUR (% by Weight)
24-2-10	10, 15, 20	1.90
24-2-11	"	1.70
24-2-12	п.	2.11
24-2-13	п	1.74
24-2-14	"	Trace
24-7-710	10, 15, 20	1.79
24-7-711	"	1.07
24-7-712	n	1.19
24-7-713	"	0.39
24-7-713	II	1.30
24-3-333	10, 15, 20	1.10
24-3-334	. "	1.01
24-3-335	"	0.47
24-3-336	· n	1.07 .
24-3-337	"	0.39
24-3-338	n and a state of the state of t	2.17
24-3-339 .	•	Trace
24-3-340	"	1.40
24-6-608	10, 15, 20	0.34
24-6-609	n	1.20
24-6-610	" ut in the second s	Trace
24-1-109	10, 15	1.85
24-1-110	10, 20, 15	0.32
24-1-111	10, 15, 20	1.14
24-6-611	10, 15, 20	Trace
24-6-612	н.	0.20
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Laboratory Report Number: C68-3602

SAMPLE NUMBER	DEPTH IN FEET	ELEMENTAL SULPHUR (% by Weight)
24-6-613	10, 15, 20	Trace
24-6-614	"	Trace
24-2-7	10, 15, 20	0.20
24-2-8	н.	0.29
24-2-9		0.56

Sample Numbers 24-2-16, 24-2-27, 24-3-314, and 24-3-321 do not have samples above 6' depth, hense not analyzed.

19680039

SULPHUR PROSPECTING PERMIT NO. 24

