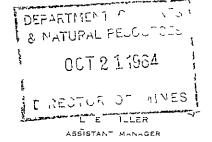
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16c	12-19-35-25	1400	205	
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18	1-4-24-21	1360	226_	
, 14A	16-12-34-29	1410	101	
20	7-21-40-26	7	>	
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SUL CLE COMPANY

CANAD AN PRODUCT ON DIVISION

SOS STHAVE VI PO DRAWER DS SALSOPV, C.BERTA CANADA 20 October 1964



M E AUST N

G E DUNLAP
MANAGER
HANAGER

Department of Mines and Natural Resources, Mines Blanch, Director's Office, 90. - Norquay Building - 401 York Avenue, WINNIPEG 1, Manitoba.

Attention Mr J. S Richards

Dear Sm

Pursuant to my letter cated October 9th, I have just obtained final locations of our test holes which are needed for our "road allowance permit". We have found it difficult to determine locations in advance. Our locations are as follows. These include the first two locations which I have previously given you in my letter of October 9th.

		, , , , , , ,	Ground Elevation	TD
1	Core Hole 13	Lsc 13, Section 20, Township 34, Range 29, WPM	1394 feet	105 ft.
2.	Core Hole 14	Lsd 16, Section II, Township 35, Range 28, WPM	1290 ieet	,75 tt
3.	Core Hole 15	Lsd. 12, Section 6, Townsh.p 35, Range 25, WPM	1660 :eet	355 tt
4	Cole Hole 16 C	Lsd 12, Section 19, Township 35, Range 25, WPM	1400 reet	205 ft.
5.	Core Hole 17	Lsd 15, Section 13, Township 31, Range 23, WPM	1390 feet	233 ft
6	Core Hole 18	Lsa 1, Section 4, Township 24, Range 21, WPM	1360 feet	226 ft.
7	Core Hole 19 A	Lsd 16, Section 12, Township 34, Range 29, WPM	I410 feet	101 it
8		Lsd ?, Section 21, Township 40, Range 26, WPM	2	?
	(We do not have the	ne exact location for this hole as y	et but should	have

it by tomorrow and will torward the information immedia ely)

Sun Cil has not employed explosives in their boring operations in any mannel. We have not bull dozed any roads and have not cut timber. I have been told by our Fleid Supervisor, Mr. R. D. Chaney, that we have not even cut a bush

We are using a Falling CFD-1 Hole Master drill with 2.7/8 inch drill pipe and we are dissling a 5.5/8 inch hole to recover our samples. We are recovering a 2 inch diameter sample in lengths of approximately 5 feet.

We found it necessary to use water as a drilling fluid in all cases in Manitoba. This water is obtained from any nearby creek or road ditch and is carried in a 650 gailon tank on our water truck.

Upon completion of our poring we fill the hole with dilling muc as much as possible. We then insert a 4 foot wooden plug in the 'cie to a depth of 2 feet below the surface. We place a wooden plank approximately 2 inches thick by I foot wide by 2 feet long immediately over the wooder plug and we fill the hole above the plank with dry cement to a depth of at least 6 inches. We fill and tamp the top of the hole using drill cuttings or surface material. We scatter the remainder of our cuttings and level and clear the location and we clean up the entire site so as to return it as nearly to the original state as reasonable. We conduct our operations in a fashion so as to cause minimum inconvenience and no dissatisfaction to anyone

Our drilling contractor is Sedco Exploration Limited, 915 - 42nd Avenue S E , Calgarv, and our Field Supervisor is Mr. R D Chaney who is also Field Supervisor for our Seismograph Department but has been working directly on this operation in the field most of the time.

I should perhaps note that in two instances it-was necessary to drill more than one surface hole due to boulders. However, in each such case these holes were plugged in the fashior described above

While our boring was in operation, our field men noticed a core hole drilling crew which was drilling a hole one mile no thof our Core Hole 13. We attempted to find out for who have were drilling but were unable to do so. The drilling equipment bore a sign "Midwest Drilling" with a Winney address. They appeared to be using an auger to drill the hole while intermittently taking a core.

I trust that this letter will satisfactorily supply the

information you need. As I have advised in the past, we will be supplying you with the results obtained from these holes. I articipate that there will be some delay due to the length of time required to process this material.

Yours very touly

EECss

E. E Cilpert

Production of the contraction of

p. c. to: Mr. M. J. Gobert,
Assistant Deputy Minister.

Dr. J. F.Davies, Chief Geologist.

> Mr. T. Morgan, Chief Mining Recorder.

> Mr. R. H. Junker, Chief Mining Engineer.

RESERVATIONS APPLIED FOR

	Township	Range
Reservation #1	21 ° 21	Pt. 15 Pt. 16
	~ ~~ .	16
	23	17
	24	Pt. 17
	23	Pt. 18
	24	Pt. 18
1	23	Pt. 19
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	26 27	Pt. 22 Pt. 22
	28	Pt. 22 22
	29	22 22
	30 -	P 22
Reservation #2	30	Pt. 22
	31	22
	32	Pt. 22
	33	Pt 22
	30	23
	31	23
	32 `	23
	33	23
	30	24
	31 _	24
Reservation #3	34	23
	35 _	Pt. 23
	36 50	Pt. 23
	32	24
	33	24
	34 35	24
	36	24 Pt. 24
	34	25
	3 5	25 25
-	36	Pt. 25
	36	Pt. 26
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	Township	Range	#3µm €- *-
Reservation #4	32 33 34 35 34 35 34 35 33 34 34	25 25 26 26 27 27 27 27 28 28 29	The same
Reservation #5	39 40 38 39 35 37 38 39 55 36 37 38	26 Pt. 26 27 27 28 28 28 28 29 29 29	
Reservation #6	41 42 40 41 42 43 44 40 44	Pt. 25 Pt. 25 Pt. 26 26 26 26 27 27 27	
Reservation #7	42 43 42 43 44 42 43 44	27 27 28 28 28 29 29	The state of the s
Reservation #8	41 41 39 40 41	27 ₋ - 28 29 29 29	÷ 1

June 21, 1965

Department of Mines & Natural Resources, Mines Branch, Directors, Office, 7, 7, 7, 901 Norquay Building, 401 York Avenue, WINNIPEG 1, Manitoba

Attention Mr. J S. Richards

Dear Sir

Prior to my meeting with you and other members. of your Government I thought that a review of our voluminous files on Oil Shale might be of assistance to you and this would serve also as a report on our activities to date

It is of interest to note that in less than a year of following the various aspects of Oil Shale research in Canada, my office alone has a full filing cabinet drawer filled with reports, studies, correspondence of all types and our various research departments and consultants tell me that they too are building up masses of additional work results

dated July 30, 1964, our first step in evaluation of these reservations was performed before this date though following our earlier discussions with you. Our geological field party spent most of July in Manitoba attempting to relocate the Oil Shale Outcrops reported by Dr. Wickenden in early government reports. They worked north and south from the Ochre River. Our geologists found that many of the reported outcrops had been unearthed by "Trenching" and they were not locateable today. Samples were obtained from as many locations as possible and these samples were sent by air to the Colorado School of Mines at Golden, Colorado for analysis as to the gallons of oil per ton

and as the results were obtained they were plotted on maps constructed for the purpose. The analyses of these outcrop samples were very poor with very uneconomic gallonages per ton ranging from 0 9 to 9 5 g/t. and with only one occurrence of the higher grade. In addition these outcrop samples were felt to have been poorer due to their long weathering in the atmosphere.

Geology we considered the possibility of boring holes at the top of the subcrop to obtain unweathered samples, you will remember my letter of September 12, 1964 and your reply of September 25, 1964, following our meeting in Alberta. As a result I advised on September 29, 1964 that we were planning to proceed with a "boring" program in Manitoba which was more fully detailed in my letters of October 9, October 20, and November 4, 1964

出一个人要人

We encountered many new problems with our "Bore hole" program and as a result of our problems and research to solve these problems I believe that other companies who are about to commence core hole programs will profit greatly because we did a considerable. amount of work with the "Becker Drilling Ltd " and developed a means, of utilizing a Rotary Coring Rig with double pipe using air to lift the core which is then recovered in five foot units You may remember seeing one of the Becker units working at the Great Canadian Oil Sands sight in Alberta at the time of our September visit. This equipment was not available at the time we performed our Manitoba bore hole program, as a result the shale samples we obtained were covered by a thick greasy mud which we found extremely difficult to remove from the shale We found, however, that if it were not removed it lowered the analysis of the shale ! As a result we found it took much longer to clean the shale in our sample laboratory than it took to drill the hole in the field 🍧

Another problem we encountered was the extremely long delay in getting the shale analyses back from the Colorado School of Mines In some cases we flew the cores to Colorado but others were sent by truck and became entangled with customs at the border Most of our Manitoba analyses were received in March of 1965 and these were sent to you with my letter of March 19, 1965, which also enclosed two maps. I find some of our analyses from Manitoba have not yet been received. We are tracing these now

we have devoted considerable effort to establishing other places for analysis "We first attempted to establish an analysis laboratory at the Saskatchewan Research Council and a meeting was held by one of our Richardson Texas research men, Mr. C. Hardy, with Dr. Brad Gunn from Saskatoon at the U.S. Bureau of Mines Laboratory in Laramie, "Wyoming where they studied the methods used there. Sun sent equipment from Texas to Saskatoon as a guide but the Research Council found they could not obtain copies of the equipment soon enough to speed our results. We then learned that the Chemical and Geological Laboratories in Calgary could conduct the proper work and some of our shale samples were sent

there, however, we found the results showed a lower gallon per ton figure than we anticipated so finally we sent the remaining ball of the same cores to Colorado and we found that the results from the Calgary laboratory were lower. As a result we are again sending all samples to the Colorado School of Mines

As we have indicated to you, the results of the analyses on our Manitoba Boring program have given relatively lower gallonage per ton figures than we had hoped for. In fact they are not much higher than the analyses obtained from our surface samples. As a result we have selected the area of our highest gallon per ton analyses and again conducted a boring program using a closer spacing to our holes, the analyses have not all been received but reports to date indicate that the new holes between the older wider spaced holes are confirming the earlier results so that we currently feel that the various analyses, grade slowly and rather consistently from point to point along the subcrop.

of drilling holes still further away from the Subcrop to see if the analyses will be higher but this may mean the drilling of holes to a depth of 1000 to 1300 feet as for example in the Duck Maintain or Porcupine Forest.

Preserve areas:

continuing at present we have put our Richardson Texas Research Laboratory to work on still other aspects of the Oil Shales we have also hired Cameron and Jones who are an Engineering Consulting firm in Denyer, Colorado, specializing in Oil Shale Research

currently preparing Economic studies of the whole project including mining studies, retort studies, and studies of the costs of constructing a full scale plant to produce 50,000 barrels of Oil Shale oil per day. This appears to be the smallest size plant which would be economic to operate. Their first such report was submitted January 29, 1965, further studies were reported February 25, 1965, and their final report utilizing presently known data is anticipated soon. Some of their studies were reported at a meeting of Sun Oil representatives in Dallas during January, these showed that utilizing shale analyzing 16 gallons per ton and in order to build a 50,000 barrel per day plant we would need an outlay of

\$26 Million for Earth Moving and Mining) \$56 Million for Retorting \$20 Million for Hydrogenation \$7-15 Million for a Pipeline per tone would vary from \$1:01 to \$2 22 per barrel if the shale varied from 22 to 10 g/t.

We called upon Cameron and Jones also for assistance in improving our drilling technique and reports were received in this regard on September 23, 1964 and again on February, 25, 1965

reports on various Retorting techniques which might be utilized. On February 12, 1965, they reviewed for us the availability of their portable retort at the same time Cordero Mining, which is a subsidiary of Suns in the Mercury mining business, considered the possibility of altering their portable retort for our purposes

Our Research laboratory at Richardson, Texas commenced "In Situ" research on oil shale in September and October of 1964. They utilized a portion of the cores obtained from the bore holes and reported in late October, 1964 that the shale supported a combustion front at 1050°F and this combustion front moved at 2-02 feet per day and recovered about 70% of the oil in place Mechanical difficulties We planned to conduct Air Injectivity tests during precluded full results our Manitoba core hole program and in this regard we ran suite of 3 logs in two of our Manitoba Bore holes I am enclosing copies of these logs with this report. The logs run, were 1) an. Acoustic, Log,?) a' Gamma, Gamma Density Log 3) a Neutron Log Reports from Colorado had indicated these could be utilized to compute gallons per ton. We have's not run'logs on other holes because we are interested in obtaining the more complete results which can be obtained from the actual cores - we did obtain cores from the same holes where the logs were obtained. Due to engineering problems we were not able to run the Air Injectivity tests though we are still hopeful of doing these in the future.

Retort research commenced at Richardson in October and November of 1964 again utilizing remnants of cores sent to Colorado. In November of 1964 they reported that the oil produced showed an overage Sulfur content of 7 24 wt %. In January 1965. "Richardson" designed and built a small retort and continued to use, the shale remnants from Colorado analysis of our Canadian Shale. We were anxious to produce a sufficient sample of the oil so that our Marcus Hook Pennsylvania Refinery Laboratory could properly analyze the oil for its

refining characteristics. By March we had finally accumulated about a quart of the oil and this was sent to Marcus Hook. We feel we had sepent some \$50,000 for more to produce that one quart sample. The report from Marcus Hook dated March 10, 1965 is as follows:

Retorted Shale Oil
Canadian Colorado
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78-31 ND
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2.74 ' **** ND' ND'
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There was insufficient sample for a complete analysis and during May and June 1965 our Richardson engineers have met with our Marcus Hook engineers to work out a full scale analysis. Marcus Hook will require one and one half (1 5) gallons of Canadian Cil Shale oil so as to allow them to perform a "Screening test" they will break down the sample into its various "fractions" and determine whether these fractions can be used in the refinery. They will determine the proper refining method and determine whether there are any harmful elements in the crude— If preliminary tests indicate that the oil can be utilized they will determine its approximate market value.

generally useable our Richardson Lab will be called upon to produce 100 gallons of the raw oil of approximately two barrels Marcus Hook will "hydrogenate" and study the final product so as to more accurately pin point the value of the final product.

taken to date, have been required to produce one quart of oil, it is obvious that we must build a bigger retort and actually dig out several tons of unweathered oil shale.

confidential meetings with another engineering firm and considered.

building a retort which would analyze 1000 tons of oil shale. This would have required mining enough shale to fill a train load of rail - would cars. Studies showed that the first phase would cost some \$450,000 and the second phase would also cost about \$450,000. This may still be done, however, it will probably follow a satisfactory evaluation of the oil by our Marcus Hook Laboratory.

In order to supply the oil for our Marcus-Hook test our Richardson Laboratory has since January been designing a larger size retort and this is now being built in Richardson; Texas, it will require building a new-laboratory building as well. This retort will be able to handle from several hundred pounds to one ton of shale at a time. We are awaiting dry field conditions to permit determination of the best place to select these larger samples of unweathered shale

Cffice studies of the various results have been carried on in our Calgary Geological Department from the beginning and during April, May and June of 1965 Geological studies have been underway both in Saskatoon, Saskatchewan and in Calgary. One of these studies is being conducted by Mr. Price of the Geological Survey of Canada. He has taken sample cuts of our various samples both in Manitoba and in Saskatchewan and is making Micro foseil studies of the environment of deposition to give what assistance they can in tracking down the location of the richer deposits and where the two petroliferous horizons just meet, and are richest.

fish remains and the "foraminifera" in the speckled shale? This may assist us in our studies.

we have made some studies pertaining to the vegetation covering the Shale outcrop and have found that the "Black Spruce" seem to grow on the Oil Shale outcrop whereas the "Poplar" and Birch" grow on the overlying and underlying outcrops.

Richardson Laboratory engineers at Grand Junction, Colorado, on June 24th, 1965 to visit the "Rifle" and "Colony" Oil Shale plants and to discuss our current plans. Both the Rifle and Colony plants are Pilot projects which are far from becoming commercial in size or immediate plans.

I believe this long letter summarizes most of our field operations in various areas, to date. Some of the information I have given is confidential but I feel it shows that we commenced our field operations early, carried them on through the period when your begovernment permits a full six months delay and that we are proceeding

ahead constantly towards a goal of finding oil shales which are sufficiently rich to economically justify plant construction. As I said in my letter of July 17, 1964, setting out our program of evaluation. The problems associated with our oil shale exploration are entirely new. There is a lot for us to learn but our results to date will. I sincerely feel, aid us in reaching our goal of the construction of the first Canadian Oil Shale extraction plant

ready, at any time, (except hopefully August 1965) to meet with you to assist in formulating the balance of your Oil Shale Regulations.

Iremain

Very truly yours

E E Gilbert

Encl

EEG/gm

Just de S. Till ?

MANITOBA OIL SHALE PERMITS , Sur many Report

In the spring of 1964, Sun Oil Company became interested in oil shales, and filed on 500,000 acres of potential oil shale land on the Pasquia Hills of east-central Saskatchewan

A literature search revealed the Geological Survey of Canada had mapped the outcrop of the oil shales along the Manitoba Escarpment and the results of this work had been published in Memoir 239, "Mesozoic Stratigraphy of the Eastern Plains, Manitoba and Saskatchewan" Using this report as a guide Sun Oil Company filed on a total of 1,585,799 acres in Manitoba by the end of 1964

The oil shale is of upper Cretaceous, Colorado age It consists of the Boyne and Morden members of the Vermillion River formation, and of the Favel formation (in order of increasing age). The Boyne member is the 1st White Specks of the sub-surface geologists, the Morden is the barren zone, while the Favel is the 2nd White Specks. The Boyne is a black limy shale, speckled white by agglomerates of foraminifera. The Morden is a black, non-limy shale, while the Favel is also a black limy shale speckled white with foraminifera. The oil shales vary considerably in thickness, being 125 feet thick in Core Hole 17 (Sec. 13-31-23 W1) and thinning to 67 feet in Core Hole 16 (Sec. 24-35-26 W1)

A field party armed with Memoir 239 was dispatched in July 1964 to channel sample all outcrops of oil shales from Twp 20 north to the Saskatchewan border. We felt that analyses of these samples would indicate if the values of the shales varied regionally, and where the best values would be

Topographic relief along the Manitoba Escarpment is low, and outcrops of oil shales rare and badly scattered. The party hoped to find good cutbanks that could be excavated for unweathered samples but because of the small size of outcrops this was not possible. The quantities of oil in the samples were small, and we could find no references in the literature to the effect of weathering on the oil content of the shales

With the failure of our outcrop sampling program, we planned a series of core holes along the Manitoba escarpment to check the mapped position of the oil shales outcrop, and to obtain unweathered cores for analysis of oil content. Because of bentonite bands within the oil shales, cores were to be cut using air as the circulating medium, rather than the more usual water or mud

Coring began about the middle of October — It was soon apparent that there were many acquifers along the eastern slope of the Escarpment, and the air compressor on the core rig was unable to overcome the quantities of water encountered — The drilling crew, therefore, had to revert to water as a circulating medium — The difficulty of obtaining water under winter conditions cut our program short

Twelve holes involving 763 feet of coring and 909 feet of drilling were located in Manitoba. The cores from six of these tests were sent to Colorado School of Mines Research Foundation in Golden, Colorado for analysis

The analyses showed consistently low oil yields in our southern group of holdings. Core Hole 17 in Sec. 13-31-23 Wl contained one sample yielding over 10 gallons/ton. Core Hole 16C in Sec. 19-35-25 Wl gave one sample analyzing over 10 gallons/ton, while Core Hole 19A in Sec. 12-34-29 Wl had nothing over 10 gallons/ton. In comparison, cores cut in the Pasquia Hills of Saskatchewan had values of more than 20 gallons/ton.

An economic evaluation was then made of Sun's oil shale acreage in Manitoba. In addition to the problem of low oil content in the shales, the problem of freehold land checkerboarded in Sun's oil shale permits became apparent

The twin factors of low oil values and high development costs, therefore, resulted in Sun Oil Company dropping its oil shale permits in Manitoba

In addition to the money spent on the evaluation of the oil shale permits, Sun has spent considerable sums on research into the problems of oil shale retorting

W H Tisdall,

P Eng

WHT/md

Sun Oil - Manitoba Oil Shale Permits

С.Н. 13	NW 20-34-29W (Sampled interval	76† - 105†)
С.Н. 17	13-31-23W K B. Favel 84' to 201'	1390 Depth - 233
C.H. 18	4-24-21W K.B (Sampled interval	1360' 17' to 126'
C.H. 19A	12-34-29W K.B. Favel 38' to 93' (Sampled interval	
с.н. 16с	12-19-35-25W K.B. Favel 100' to 180' (Sampled interval	
С.Н. 20	21-40-26W (Sampled interval	65* - 164*)
C.H 21	21-40-26W (Sampled interval	141' - 174')

Continued Page 3 MA

Date Reported. May 25, 1965

Specific Gravity
@ 60°F.

Laboratory Report Number. C7372-A

A.P.I. Gravity

Sun Oil Company

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Oil Water Gal/Ton

Bag -

(13)-4

Cuntiruca Page 4

Date Reported. Hay 25, 1965 *

Sin Oil Co pany

Laboratory Report Number. C7372-A

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An assumed specific gravity was used on sample number 81.

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Composite specific gravities were determined since there was insufficient oil recovered for individual determinations in most cases.

219-64 Lab Group Number ...

ł,

840703 Project Number __

Sun Oil Company

Project Engineer W. H. Reeves Service of the servic

July 29, 1964

3) 5 5

ANALYTICAL LABORATORY REPORT

GOLDEN, COLORADO

Date Submitted Specific Sponsor _ G/T G/T

Lab.	Samp.	ì	٦ ک	oil	G/1 Water		Specific Gravity	:5%				•		*			•	
No	No.	Description	Est	Fnd	Est F	Fnd Est	t Fnd	Est	Fnd	Est	Fnd	Est	Fnd E	st Fnd	d Est	Fnd	Est	Fnc
1373		Bag #10 Core #24		0.0	8	8.80	0.970	*	-			ļ						
1374	2/3-275	Bag #1 Core #25		1.81	6	9.42	#	*										ļ
1375		и 2 и 25		1.73	8	8.98	=	*										
. 76		н 3 н 25		0,93	8	8,42	ε	*										
1377		и 4 и 25					7											
		Pan I		0.95	9	6.76	n	*							`			
1378		н 4 п 25																
		Pan II		0.97	7	7.39	2	牵							-			
1379		т 5 п 25		0.53	8	8,43	E	*										
1380		n 6 n 25		0.29	-	8,58	=	*										
1381		L-1-A		4.86	7	7,32	=	*	-									
1382		L-1-B		6,61	6	90.6	Ħ	*		> ^ર ્ ડ	4		Surch & P	ક	am pla	\$:
1383,		L-1-C		9,50		10.5	£	*		,		,						
1384		L-1-X		5.86	٣	8,17	=	*										
.85		L-1-Y		7,95	-	7.00	=	*			77			7	1	_		- #
1386		L-2-A		7.01	-	5.52	=	*		Ò	ا ا ا ا	3		7		-		
1387		L-2-B		4,35	-	7,96	E	*		2			7	3/				*
1388		L-2-C		5.98	_	12.0	=	*					ये ज	2				-
1389		L-2-X		1,28		10.3	=	*			·	-	ر 3	_		-		à Ç.
, 1390			٠ ج	7.56	,,	6.65	ŧ	*	,	- 1 - 1	7		£4.5	1 Per	4		4.2	# " # "
1351	, F	LTIB .	t.	2,68	***	5.57	* # < #	*	,	* >	+	,	£ 44 \$	14 t	,	*	الم المراد المراد المراد	The state of the s
1392	3 (4	D'- E'-'T		1.37	The state of the s	8,37	*	*		ڳ ⁻ - اور	-		ت. ت ا	4 4	**	y (4)		#- 1
: 1393	٠	, L°-4-A		0.77	-	14,3	٤	×,x	ú					~		-	ur.	
1394		しょな。こ		1,86	-	10.7	=	**					-					
1395	t y	£ = 5 - A .		1,79		3,44	=	*			×.	*1	<i>"</i>	*			,	1
tema ⁵ ka	* Sp.	Specific gray, ty of 0.970 determined	970	detčin	ned 1	trom cor	rposite	of.	san <u>p</u> 1cs	35 in	ĝı ovp.	p.	1		#		112kg ***	¥
3							-			,			-				1	-

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FOUNDATION
OF MINES RESEARCH
MINES
OF.
SCHOOL
COLORADO

219-64 Group Number

840703

Project Engineer _

W. H. Reeve

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ANALYTICAL LABORATORY REPORT 647. PAGE NO. GOLDEN, COLORADO

Sun Oal Company Project Number

Sponsor _

July 29, 1964

Date Submitted _

(3)-6

Lab Samp.		G/T	oi1	G/T	G/T Water	Specific Gravity	fic				-	} 							
	Description	Est	Fnd	Est	Fnd	Est	Fnd	st	Fnd E	Est I	Fnd 1	Est	Fnd	Est	Fnd	Est	Fnd	Est	Fn
1396	L-5-B		3,54		3,10	0	0.970	坤		-									
1397	L - 5 - C		1.99		1,92		r	*											
1398	L - 6 - A	_	4.95		7,89		E	*											
66	L-6-B		2,10		9.27		E	*											
1400	L - 6 - C		5.64		4,36		u	*											
1401	T - 1		4.18		19,5		Ħ	*									_		1
1402	T - 2		1,18		19.9		E	*	-										
1403	T - 3		3.25		31,3		£	*	_										į
1404	L-4-B		0.88		18.0		Ε	*											
1405	T - 5 - A		0.87		5.07		E	*					l :						
1406 Cusk	T - S - B		0.83		5,34		ŧ	*											:
1407	T-5-C		1.29		17,3		±	*		•		-							
1408	T-6-A		1.03		10,0		E	*	_										
1409	T-6-B		0.99		17,8		=	**											
01	T-6-C		3,55		12,6		=	*											
1411	T-9-A		0.70		2.66		=	*											
1412	T-9-B	-	0.0		6,81		=	*											
1413	T - 9 - C		2,03		12,4		=	*											
1414	T - 10 - A		6.09		5.17		=	ψ.							 				
1415	T 10 - B		4.26		4.77		·=	*	,						7				
1416	T - 11	_*	4.01	-	17.0	<u></u>	É	*			*			ī					ا جوا
1417	T - 12 - A		0.69		13,2		2	*						ţ	æ			µ*,	
		_	_	_		-						-							

* Specific grayity of 0.970 determined from composite of samples in group.

Supervisor

Remarks

Date Reported

July 30, 1964

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PAGE NO.	vo. ● G	GOLDEN, COLORADO	1		Proje	Froject Number	 	840	840703	:		Pro	Protect Engineer.	gineer.	, W	H. Reeve	ve) (2)	,
AN	ALYTICA	ANALYTICAL LABORATORY REPORT	ORT	Ţ	Sponsor	sor	uns	011	Company	ny		Dat	Date Suhmitted	itted	July	29,	1964	uel .	i i	H r
04/-			G/T		3/T	- 1	Speci	Specific												1
Lab. No	Samp. No.	Description	Est	Fnd	Est Fnd		Gr.	Fnd	Est	Fnd	Est	Fnd	Est	Fnd	F.S.	Find	13.4	Find	FS.	표
1421		T - 14			46	14.9	0	0.970	*							1		-		
1422		T - 15 - B		1,08	 ;	18.1		F	*											
1423		T - 15 - C		1,53		13,8		E	*											
1,4		T - 16 - A		2.32		15.5	í	t	*											
1425		T - 16 - B		3,34		16.9		E	*											
1426		T - 16 - C		2,10		11,2		11	*								-			
																	-			ļ
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Remarica	* Specific	fic gravity of 0.970	70 de	deternined	od fi	fron cc	composite		of sa	samples	in g	dnox6							€_	
KUP 2 JOHNSON STANS	Z DZ	Leon of		er 25%	.3	-) my c.	. 33	, and	Date Peported	ges .	r T	-5-	July	30, 1	1964		,		

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PAGE	PAGE NO. 1			Project N	umber		840703		1	Jate St	Date Submitted)ecemp	December 28, 1964	1964	(
6412-	ANALYTICAL	LABORATORY	REPORT	Sponsor	Sun	011 Com	Company					G	 	C H #160 wently	Marit (₩,
Lab.	Samp.	•	$^{\mathrm{G/T}}_{\mathrm{O11}}$	G/T _{Water}	Specific	ty					-	1	J. H.	(4-1/	100	3
No	8 2	Description	Est Fnd	Ĭ	Est	Fnd Est	Fnd	Est	Fnd E	Est E	Fnd E	Est F	Fnd Est	Thud	μ +	F P C
2698	42 44	Hole 16 C, Core 1,	0 57	5 40	0	959 *				100		11 ()	ام اا		1	7 110
		Bag 1 of 1									 	4	7	2		
2699	44-49	Hole 16 C, Core 2,	0 29	4.38	0	* 656		 			7 2	-[
		Bag 1 of 1								['		7 -	2	-		
2,00	49-54	Hole 16 C, Core 3,	09 0	4 87	60	* 650			-	-		10 10 N	3	00		
		Bag 1 of 1			ŀ						75e 1	-		080		
2701	54-57	Hole 16 C, Core 4,	99 0	5.02	6 0	* 650		-	-		-	-				
		Bag 1 of 1						-				-	-	-		
2702	59-64	Hole 16 C, Core 5,	0 78	3 72	0	* 656		-				-				
		Bag 1 of 1			-				-	-		-				
2703	69-69	Hole 16 C, Core 6,	0 22	4 72	٥	* 656		-					-			
		Bag 1 of 1						-	-		+	-	-	-		
2704	46-67	Hole 16 C, Core 7,	Trace	7 47	6 0	* 65		-		-	+	-				
		Bag 1 of 2						+	-	+	-	-	-	-		
2775		Hole 16 C, Core 7,	0 34	3 78		* 656		-	-	-	-	+	-			}
)									-	-	-	-	-			
2706	7479	Hole 16 C, Core 8,	0 46	4 85	6 0	* 65		-		-	-	+				!
		Bag 1 of 1							-	-	-	-				
2707	79-84	Hole 16 C, Core 9,	Trace	9.15	0.959	* 65		-	-	-	 	-	-	-		
		Bag 1 of 1						-	-	-		-		-		
2708	84-90	Hole 16 C. Core 10	Trace	06 6	0	959 *		-		-		-	 	<u> </u> -		
,		Bag 1 of 3								-	-	+	-			
2709		Hole 16 C, Core 10	Trace	8 50	0	* 656		-		-	+	_	-			
								-		_	-	-	-			
								-	-	-	-	-	-			
* *************************************	Specific		,					+	_		1	-	_			
	1 1	in gravity calculated	rom	average of	group.											

December 29, 1964

Date Reported

pervisor

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Project Engineer: W H Re

840703 678-64

Lab Group Number

Golden, Colorado

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Golden, Colorado PAGE NO. 2

ANALYTICAL LABORATORY REPORT

6412-

Sun Oil Company Project Number Sponsor

678-64 840703 Lab Group Number

Project Engineer Date Submitted

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Lab.	Samp	ı	$^{\mathrm{G/T}}_{\mathrm{O11}}$! 1	G/T Water		Specific											
No	No	Description	Est	힏	Est F	1	Fnd E	st Fnd	Est	Fnd	1 Est	Fnd	Est	Fnd	Est	Fnd	[Ξ Ω	구 고 고
2710		Hole 16 C, Core 10,		Trace	9	87	* 656 ¢			_		╢	-		t			1
,	* 7	Bag 3 of 3																
2711	90 95	Hole 16 C, Core 11,		Trace	10	N.	* 656 0				-							
		Bag 1 of 2								_								
2712		Hole 16 C, Core 11,		Trace	<u>α</u>	53	* 656 0				-							
		Bag 2 of 2																
2713	95-160	Hole 16 C, Core 12,		Trace	7	60	* 656.0											
		Bag 1 of 2							ļ 		_							
, 2714		Hole 16 C, Core 12,		Trace	8	39	* 656 Q		ļ ———		ļ							
		Bag 2 of 2						ļ	1		_							
2715	101-105	-/os Hole 16 C, Core 13,	-	Trace	10	7	* 656.0		-	_	-							
		Bag l of l							_	ļ	-							
2716	105-110	Hole 16 C, Core 14,	2	2.11	8	62	056 q		ļ		-	-						
		Bag 1 of 1																,
2717	110-115 Hole	Hole 16 C, Core 15,		2.83	9.3	31	5.964											
ار		Bag 1 of 2									_							
2718		Hole 16 C, Core 15,	3	1 03	7 9	96	956 0		<u> </u>		-							
		Bag 2 of 2																
2719	21-511	115-12 Hole 16 C, Core 16	2	80	11	0	996 d				-							
		Bag 1 of 1									_							
2720	1 भ - 1 भ्रद्र Hole	Hole 16 C, Core 17	9	.31	6.10	0	* 996.0											
		Bag 1 of 2																
2721		Hole 16 C, Core 17	6	67	7 1	11	956 0				-							
		Bag 2 of 2		-														
																		1

* Specific grayity calculated from average of group. emarks

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December 29, 1964 Date Reported

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ANALYTICAL LABORATORY REPORT Golden, Colorado

Lab Group Number Project Number

678-64

840703

Sun Oil Company

Sponsor

6412-

Project Engineer

(13)-10

December 28, 1964 Date Submitted

77.																	
Lab.	Samp.		$^{\mathrm{G/T}}_{\mathrm{O11}}$	G/T Water		Specific		-									
No	No	Description	Est Fnd			Est Fnd	Est Fnd	d Est	Fnd	Est	Fnd	Est	Fnd	+ tr	Find	+	Fod
2722	या-डरा	125-12 Hole 16 C, Core 18	, 10 7	3	8 85	096 0							-(1	-	∤	: -	
		Bag 1 of 2								ļ 				_		-	
2723		Hole 16 C, Core 18	9 36		6 51	996 0	*			 	ı						
		Bag 2 of 2						_						-		-	
2724	130-135	/35 Hole 16 C, Core 19	6 67	3	8.46	996.0	*			-					-	-	
		Bag 1 of 2			!									-	 	<u> </u>	
2725		Hole 16 C, Core 19	8 54	,	7.99	0 972							-			-]
		Bag 2 of 2			<u> </u>			_		-						-	
2726	135 140	140 Hole 16 C, Core 20,	6.98	9	6 73	0.966	*						-			-	
		Bag 1 of 2												-	-	<u> </u>	
2727		Hole 16 C, Core 20,	9.54	Ç	6.79	0.975							-			"	
		Bag 2 of 2						-		_							
2728	140-145	140-145 Hole 16 C, Core 21	7 28	4	7 34	996 C	*								<u> </u> 		
		Bag 1 of 2						-									
ر,		Hole 16 C, Core 21	7 25	2	5.46	0.966	*					-		-	-	-	
)		Bag 2 of 2						_		ļ 		-			-]
2730	145-150 Hole	Hole 16 C, Core 22	6 13	ς.	96 8	0.966	*					-					[
		Bag 1 of 2												-		,	
2731		Hole 16 C, Core 22.	7 82	9	5 04	0.966	*					-					
		Bag 2 of 2						_				-		-		-	
2732	150-157	Hole 16 C, Core 23,	6 08	4	1 41	0.966	*					-	-	-	-	-	
		Bag 1 of 3		,								-	-	_	-		1
2733		Hole 16 C, Core 23	3.16	6	9.15	0.966	*					-	-	-		-	,
		Bag 2 of 3						-					\dagger	-	+		ļ
				_				-				-	+	<u> </u>		-	ļ
1	,	7			-			\dashv				-	-	-		_	

* Specific gravity calculated from average of group. mark

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Date Reported

December 29, 1964

COLORADO FAHOOL OF MINES RESEARCH FOUNDATION

Golden, Colorado PAGE NO. 4

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678-64 Lab Group Number

840703 Project Number Sun Oil Company

Sponsor

Project Engineer W H. n

11- (3) December 28, 1964 Date Submitted

۲ م ۲	200		G/T		 - -	1001610			-							
ZaZ.	No.		_ا ∪	1	+	Gravi ty										
2	200	Jescriptio n	Est Fi	Fnd Est	Fnd Est	st Fnd E	st Fnd	Est F	Fnd E	st	Fnd F	St Rnd	T U	7 5	5	F
2734		Hole 16 C, Core 23,	98.6		5.10	996.0		-#		-	1	-∦	1	- -	กรรเ	I
		Bag 3 of 3										+				
2735	157-165 Hole	Hole 16 C, Core 24,	5 9	86	4 43	* 990 0					_					
 		Bag 1 of 2			1	3		_	-	-	-		_			
2736			5.0	00	3 22	4900			-			_	_			
			1		1	2002		-	-	-	+	-	-			
2737	165-172 Hole	Hole 16 C, Core 25,	6 9	97 6	6 73	* 9966							_			
		B19 1 of 3			1	1			+		-		-			
2738		Hole 16 C, Core 25.	7.49		5 49	790 0			-							
		Bag 2 of 3			1	1			-	-	-		-			İ
2739		Hole 16 C, Core 25,	7 2	20	4.38	* 996 0										
		Baq 3 of 3						-	-		+		_			
2740	172 180	9	6 79	6	30	* 490 0		-		-	+		_			
		Bag 1 of 1	ľ		1			120	+	-	+		-			
11-2	190 157	157 Hole 16 C, Core 27	6 26		9.05	* 996 0	,	6	-	-	+-		_			
		Bag 1 of 1					1	1	-		+	1				
2742	54-86	Hole 17, Core 4,	4 88	3 6	65	* 796.0			-	-		- 1 :				
		Bag 1 of 1							+) -	<u> </u>	7 7	- X			1
2743	65-98	Hole 17, Core 5,	4 08	3 7	24	* 296 Q			-	X (_	1590				
		Bag 1 of 1			 	1			+		디	1233	_			
2744	89-96'	Hole 17. Core 6.	8,		,			-	+	Γ		Ninbrors		48		-
		B3g 1 of 1	.1	-	7	705-7	-	-	+		200	-	_	701		
2745	96 124	Hole 17, Core 7,	5.59	0	8.2	640				-	-					
					,	_	_	_	_		_	_		_		

* Specific gravity calculated from iverage of group. emarks

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Bag 1 of

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December 29, 1964

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6412-	ANALYTICAL	ICAL LABORATORY REPORT	ORT	Sponsor	Sun	011	Company				<u>_</u>	# # ;	二 并	mentole	the
Lab.	Samp.		G/T ₀₁₁	G/T Water	Specific	uf te									
No	No.	Description	Est Fnd	Est Fnd		Fnd Est	Fnd	Est F	Fnd Est	Fnd	Est	Fnd	Est	Fnd	Est Fn
2734	,	Holc 16, C, Core 23,	9 86	5.10	d	996						71-	-₩	-	4_
		Bag 3 of 3													-
2735	157-165 Hole	Hole 16 C, Core 24,	5 98	4.43	-0	* 996			-					+	-
		Bag 1 of 2											-		
2736		Hole 16 G, Core 24,	5 00	3 22	-0	* 996.		-					-	-	
		Bag 2 of 2			,										-
2737	165-172 Hole	Hole 16 C, Core 25,	6 97	6.73	0	* 996								-	
		Bag 1 of 3										-	-	<u> </u>	
2738		Hole 16 C, Core 25,	7 49	5 49	C	196		-						-	-
		Bag 2 of 3 /										-			
2739		Hole 16 C,/Core 25,	7 20	4 38		* 996								-	
		Bag 3 of/3							-			-			-
2740	172 - 18c Hole	Hole 16/C, Core 26,	6 79	9 39	_0	* 996								-	+
		Bag 1/of 1					-	4 24 24	<u> </u>		-		-		
2-41	180 187	157 Hole 16 C, Core 27	6 26	9.05	_0	* 996									1
		Bag 1 of 1						V			1011		3		-
2742	54-86'	Hole 17, Core 4,	4 88	6 65	0	* 296.		-	_	Se		00 C/L		-	-
		Bag 1 of 1							 	K B		390		-	-
2743	86-89	Hole 17, Core 5,	4 08	7 24	٥	* 296				20,tt	\vdash	733,	<u> </u>	-	
		Bag l of l								1/2		10,0	"	4%	-
2744	136-68	Hole 17, Core 6,	8.38	10.2	0	* 296				70	1 ;		2	-	-
		Bag 1 of 1	-								-	-		-	-
2745	96 104	164 Hole 17, Core 7,	5 59	9 82	0	* 296		-	-		-	-		+	
		Bag 1 of 2							-		-		-		-
													<u> </u>	+	-
emarks *	Specific	ic gravity calculated	from	average of	group.										

December 29, 1964

Date Reported

Project Engineer W H Reves Date Submitted December 28, 1964

678-64 840703

Lab Group Number

NOT OF MINES RESEARCH FOUNDATION

Golden, Colorado

PAGE NO.

Project Number

COLORADO SCHOOL OF MINES RESEARCH FOUNDATION

Golden, Colorado PAGE NO. 5 ANALYTICAL LABORATORY REPORT

6412-

Sun Oil Company Lab Group Number Project Number

Sponsor

840703

678-64

Project Engineer

(3)-13

December 28, 1964 Date Submitted

Lab.	Samp.		$^{\mathrm{G/T}_{\mathrm{Ol}}}$		G/Twater	Specific	tic St			<u> </u>		-					ſ
No	No	Description	Est F	Fnd Est	Fnd	Est F	Fnd Est	Fnd E	Est F	Fnd Est	t Fnd	F.S.	Fnd	+ U	F P	+3	100
2746		Hole 17, Core 7,	2.	2.49	5 57	6 0	* 296	1)	₩_		- ;	2 2	+	107	r II d	102	F CIC
		Bag 2 of 2										<u> </u>					
2747	104 111	Hole 17, Core 8,	6	50	5 63	6 0	965					-					
ا آ		Bag 1 of 2									-	 					
2,48		Hole 17, Core 8,	5	98	7 22	6 0	* 296		-		-	_	_				
		Bag 2 of 2									-		_				
2749	111-119	Hole 17, Core 9,	80	90	7.14	6	958		-								
		Bag 1 of 1	· · · · · · · · · · · · · · · · · · ·	<u></u>							-	-					,
2750	119-12 Hole	Hole 17, Core 10,	7.	7.45	5.55	0.96	* 296				-						
		Bag 1 of 3							-								
2751	-	Hole 17, Core 10,	7	56	5 96	6 0	* 296				-	_					
		Bag 2 of 3									-						
2752		Hole 17, Core 10,	7.68	68	4.84	6 0	* 296		-		<u> </u>						
		Bag 3 of 3							-	_		_					
(753	126-134	Hole 17, Core 11,	7	54	5.62	0 9	* 296		-			_					
ا ر		Bag 1 of 4	_								_	-					
2754		Hole 17, Core 11,	2 6	98	6.03	0.967	* 290		_	_		_					!
		Bag 2 of 4							_			-					
2755		Hole 17, Core 11,	10	10.50	8.35	6.0	964		-			_				 	
		Bag 3 of 4				-										1	,
2756	- 7	Hole 17, Core 11,		74	7 49	0.9	* 296	-	-		-	,					,
•		Bag 4 of 4							-		<u> </u>	_			 		
2757	134-141	Hole 17, Core 12,	9.29	59	7 42	6 0	973		-	-					-	٢	
		Bag 1 of 3						-	-	_		_				-	2
			_							_		_				_	

* Specific gravity calculated from average of group emarks

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Date Reported

December 29, 1964

Fnc ナーか Est December 28, 1964 Fnd ves. Est S. ı Fnd 3 Project Engineers Fnd Est Date Submitted 13. Est Fnd Est Fnd 678-64 840703 Sun Oil Company Est Specific Gravity Est Fnd <u> 796</u> 973 296 496 490 296 796°C 296 296 d 296 0.967 0.967 Lab Group Number Project Number |G/T Water Fnd 5 03 10 26 Sponsor 6.37 3.26 18 **67** 7.01 5.87 4.74 17 9.07 9 m 2 m Est Fnd 5 84 7.58 52 82 67 95 90 04 5.88 CONTRACT OF MINES RESEARCH FOUNDATION 52 40 7.21 0,1 ð 0 ø ო Q 'n α ω G/TEst ANALYTICAL LABORATORY REPORT Hole 17, Core 12, 13, Core 14, 15, 15, Core 12, 141-149 Hole 17, Core 13, /64-17 | Hole 17, Core 16, 17, 17, Core 15, 18, Golden, Colorado Description Core Core Core Hole 17, Core Core Core ო ጣ C) ന O Bag 1 of 1 Bag 1 of Bag 2 of 3 of Bag 1 of Bag 3 of Hole 17, ŏţ 149-154 Hole 17, Bag 1 of Hole 17, 156-164 Hole 17, Bag 2 of of of 171-179 Hole 17, Hole 17, Hole 17, Hole 17, 0 N Bag Bag Bag Bag Samp. 179-184 PAGE NO. S 6412-2760 Lab. 2758 2759 2762 2763 2766 2764 5, 7, 2761 2767 2768 2769 N_o

* Specific gravity-calculated from average of group.

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Date Reported December

December 29, 1964

COLORADO SCHOOL OF MINES RESEARCH FOUNDATION

Golden, Colorado PAGE NO. 7

6412. ANALYTICAL LABORATORY REPORT

Lab Group Number 678-64 Sun Oil Company Project Number Sponsor

840703

Project Engineer

December 28, 1964 W H. Rg Date Submitted

(3)-15-

Lab	Samp.		G/T	0.1	G/T Water	-	Specific	U							-			
No	No	Description	Est	ਹ	Est	$\dot{-}$	St Fnd	d Est	Fnd	Est	Fncl	- to	تا بر بر	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	_ F		_	1
2770	186-194	186-194 Hole 17, Core 19,		9 02	8	8.28	#0	*	-11-		<u> </u>	-	-11-	- -	a	٠,	Est	Fnc
		Bag 1 of 1											7	13-	W -	386/	-	
2771	194-20			98.9	9	84	296 0	7 *			1				-			
		Bag 1 of 1							1	k K	1					-		
2/12	2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	49 Hole 17, Core 21,		5 14	6	34	296 0	* 1			4			-	-	-		
		Bag 1 of 2									-	-		-		-		
2773		Hole 17, Core 21,		6.57	80	52	296 d	* 2						-	-	-		
		Bag 2 of 2									 	-		-		-		
2774	209-218 HOIe	Hole 17, Core 22,		3 01	89	76	296 0	* 2	-	-		-	-	-				
		Bag 1 of 2		ſ										-	-	- -		
2775	718-224	118-124 Hole 17, Core 23,		0.28	10	7 0	296 0	* 1		-		+	-	-				
		Bag 1 of 1								-	-	-	+		-	-		
2776		Hole 17, Core 22,		1 63	10	8.0	0.967	*		-	1	-	-		$\frac{1}{1}$	_		
		Bag 2 of 2				-				+		-		-	+			
2777	124-233	Hole 17, Core 24,		1.96	11	1.3	196 0	*		-	-	+	-	-	-			
)		Bag 1 of 2											-	-				
2778		Hole 17, Core 24,		2 56	80	65	0 967	7 *	-		-	-		-				
		Bag 2 of 2							-		-		-	-	_			
2779	83-84	duS >		4.72	7	16	0 967	*	-		-		-	-	-			
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* Specific gravity calculated from average of group.

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		•)					5				`	3	מים מים		3	1	•			,
657-	ANALYTICAL	ICAL LABORATORY Hole 18	ORY REPORT	ORT		Sponsor	sor	Sun	Sun Oil	Company	۶			3		4-24-24WI		Corelale #18	والم	♦	
Lab.	Core Samp.		Вад	S/T O	011	G/T	Water	Specific	fic ity						<u>}</u>		1				
No	No	Description		Est	Fnd	Est	Fnd E	Est F	Fnd E	Est Fnd	d Est		Fnd E	Est E	Fnd E	Est F	Fnd E	st	Fnd	Est	Fnd
954	J '3''b	Top only	1 of 1		0.00		3 16	0	* 596												
955	1 18-23	Top	1 of 1		Trace	77	16.5	0	* 296												
926	223.29	Top	1 of 2		Trace	• •	19.6	0	* 596.												
957	2	Bottom	1 of 2		1.25		14.4	_ 0	* 296					· 					1		<u> </u>
958	3 29.36	Bottom	1 of 2		Trace		16.9		* 596.0			_	-	-							
959	8	Bottom Omly	2 of 2	• •	Trace		17.6	o	0.965			 								-	
096	4 36-49	Bottom	1 of 2		1 19	, T	11.5	0	* 596.0				-		-						
1961	4	Top	2 of 2		0.00		12.1	0	* 596.0			<u> </u>									
962	544-51	Top	1 of 2		Trace			0	* 596		<u> </u>		-								
963	5	Bottom	1 of 2		Trace	7	3.0	0.0	* 596.0											ļ <u>.</u>	ľ
964	6 51-59	Top	1 of 2		2.10	-	12 1	0.0	0.965				-						-	-	
965	9		1 of 2	, ,	1.22		16.9	0	965 *												
996	79-65 /	Bottom Only	2 of 2	\dashv	0.99		12.3	0	* 296.0									-		-	J
296	8 66-74	Top	1 of 2		Trace		13.8	0	* 596.0		_	_		-							
968	80	Bottom	1 of 2		0 32	1	12 7	5 0	* 596			<u>.</u>			_	_		-			
696	18-46		1 of 2		1.72		11.6	0	* 596.0						-	-				<u> </u>	
970	6	Bottom Only	2 of 2	, 4	2.12	7	11.6	0	0.965					-		-		ļ	-	\vdash	
971	10 81-9	10 81-9 Bottom	1 of 2		Trace		19.7	0	965 *						!				_		
972	10		2 of 2		Trace		16 4	0	* 596				<u>-</u>							-	
973	1190-9	11 90-96 BOIY	2 of 2		Trace	2	20 3	0	* 596		_	-	-		-	-	-	_	-	-	*
974	12 96-16	12 96-/4Bottôm]	1 of 2	-1	Trace	1	19 6	0	* 596		_			-		 		-	-	-	
975	12	Top only 2	2 of 2	-	Trace		19 0	0.0	* 596.0		_	_	_				-		-		
926	13 ///	Top 1	1 of 1		2.06	1	14.2	0.0	* 296.0		_	_					-			-	
977	14 111	Bottom	2 of 2	-	2 47	1		0	* 596		 			_				_		-	
978	15-79	Top 1	1 of 2	0	58	Н	16.7	0.965	* 596										-	-	
**	* Snortin	+	#		 	()	ų,		:				-	1							

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W H P

Project Engineer Date Submitted

708-65 840703

Lab Group Number

COLORADO SCHOOL OF MINES RESEARCH FOUNDATION

Golden, Colorado

PAGE NO. I

Project Number

* Specific gravity calculated from average of group. emarks

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Date Reported

July 15,

1965

OOL OF MINES RESEARCH FOUNDATION Golden, Colorado PAĞÜ NO. 4 CCLORADO

ANALYTICAL LABORATORY REPORT

652-

Lab Group Number Project Number

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Sun Oil Company

Sponsor

840703

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-(3)-(7) manutola February 5, 1965 CH,# (9A Project Engineer: W. H R Date Submitted

Lab.	Samp.		رر 10ءا		G/T Water	Specific Gravity	1.c			 				-			
No	No.	Description	Est F	פ		Est F	Fnd Est	Fnd	Est I	Fnd	HS+	Fnd	ਸ ਦ	+ 12 12 12 13 14 14 15 15 16 16 16 16 16 16 16 16 16 16 16 16 16	7 S	+	
283	35-40	Hole 19A, Core 1,	6	08	9 05	c	990		: -	┪-	_#_		٦∥٦	- 11 -	-	EST	r nc
	•				1	1	3			-	3	46/2	/M67	<u>}</u>			
284	4,4	Hole 10A	- 1	t							<u>K</u>	0/4			-		
	,	2101		2	7 42	0	976	-	-		40	Sis	250	38			1
	-	Bag 1					_				Barc	1		33			
285	44-51	Hole 19A, Core 3,	7.	7.40	8 73	o	973										
		Bag 1		_							-			-			
286	12-15	Hole 19A, Core 4,	9	77	8 76	0	972							-			
		Bag 1							-		-		-	-	•		
287	62-73	Hole 19A, Core 5,	7.06	90	9.77	c	074										
	-					Į.								-			
288	11702	,			1			-		_	+						
200	9 / /	note 194, Core 6,	6	15	11 2	0	626										
		Bag 1															
289	66-72	Hole 19A, Core 7,	7	92	10.7	0	73			-	-			-			
		Bag 1								-	-	-	-	+			
290	96 در	Hole 104 Core 8	1	5					-	+-	-	-	-	_			
	1	2702		36	10 0	0	979		+	+		-	-		- 1		
			-														
291	23-62	Hole 19A, Core 9,	2.07	27	10 9	0.9	* 026.										\
		Bag 1			(,						
292		Hole 19A, Core 9,	0	20	17 0	0 9	* 026					-	<u>_</u>	-			
		Bag 2			$\left.\right\rangle$					_	_	-					
293	86-94	Hole 19A, Core 10,	3.4	41	9.92	0.9	* 026			-	 	-	_	-			
		Bag 1				-			-	-	-		_	+			
294		Hole 19A, Core 10,	4	16	11 1	0	\$ 020		-	-	-	-	_	-			
i					1		4		_	+	-	-	+	_			
								-	- -	\dashv	-			-			
						-											
*	Specific	Oran tu orton	4	1	•												

* Specific gravity calculated from average of group.

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February R. 1065 Date Renautes

COLORADO SCAOOL OF MINES RESEARCH FOUNDATION Golden, Colorado PAGE NO.-5

ANALYTICAL LABORATORY REPORT

652-

Lab Group Number Project Number

840703 111-65

Sun Oil Company

Sponsor

Date Submitted

Project Engineer: W H. Regles (13) -18 February 5, 1965

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Lab.	Samp.		G/T_{O11}	!]	G/T _{Water}		Sgeciffy										
No	No	Description	Est	ַם	Est F	Fnd Est	Fnd E	st Fnd	1 Est	Fnd	Est	Fnd	Est	Fnd E	Est Fnd	d Est	Fnd
295	94-101	Hole 19A, Core 11,		1 23	6	78	* 956 0								-		
		Bag 1		• ***	;	<u> </u>								_			
296		Hole 19A, Core 11,		0.0	12	5	!										
		Bag 2						/ A	16						_		
297	81-89			11.1	7	35	0 962				Sec	15-48	48-11C	7	<u> </u>	-	
		Bag 2 ('					_			1 4	X				
298	36-68	Hole 27, Core 8,		9.52	9	20	0 958		<u> </u>		7	_	, 90 00 00 00			=	*2
		Bag 1		,. <u></u>							15	17	3	`\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	12	6	
299	40-96	Hole 27, Core 9,	-	9.12	6.	6.71	0.957				PC		6	777	1		
		Bag 1	_				•					,			ļ		
300		Hole 27, Core 9,		10.7	9	37	0.956										
		Bag 2												_	ļ <u>.</u>		,
301	104-111	Hole 27, Core 10,		7.78	7	90	0 956 *						-		<u> </u> 		
		Bag 1	7														
302	115 119	Hole 27, Core 12,	<u>سر</u>	8 48	7.	7.30	0 953										
	•	Bag 1															
303	21-611	Hole 27, Core 13,		7/32	9.	9.75	0.957										
		Bag l				 -							<u> </u>				
304	120-134	Hole 27, Core 14,	<u>'</u>	69.9	13	6	0 952										
		Bag 1										ļ	_	-	<u></u>		
305		Hole 27, Core 14,		5.13	10	8	0 943										Į,
		C (- 175-1	· · · · ·							-				-	

* Specific gravity calculated from average of group. emarks

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Core 15

Hole 27,

134 -141

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corogypo s		OOL OF MINES RESEARCH FOUNDATION	UNDATION	Lab	Lab Group	Number	678-64	64			Projec	Project Engineers	3	H. Re	es		*
PAGE NO. 1	0.1	Golden, Colorado		Pro	Project Nu	mber:		03		:	Date S	Date Submitted	•	December 28,		1964	, <u>;</u> !
6412-	ANALYT	ANALYTICAL LABORATORY REP	REPORT	Spo	Sponsors	Sun Oil	Company	ny	•	•		JA #160	'	4	2 12-19-35-25 W	75.	* 1 yd
Lab.	Samp.		$^{\mathrm{G/T}}_{\mathrm{O}_{1}1}$	6/1	G/T Water	Specific				-		<u> </u>	1			-	*
No.	No	Description	Est Fnd	<u> </u>	Fnd	Est Fnd	Est	Fnd	Est	Fnd	Est	Fnd E	Est Fnd	d Est	Fnd	Est	Fnc
2698	42-44	Hole 16 C, Core 1,	0 57		5.40	0.959	*					Sec	1.9 35-2	75 1			
		Bag 1 of 1															
2699	44-49	Hole 16 C, Core 2,	0.29		4.38	0.959	*		-	-		2007	•				
`		Bag 1 of 1		:								<i>\</i>	-	3			-
2,00	49-54	Hole 16 C, Core 3,	09.0		4.87	0.959	*		-	-			1				
		Bag 1 of 1								-		-					
2701	54-57	Hole 16 C, Core 4,	99 0		5.02	0.959	·							-			
		Bag 1 of 1											-	_			
2702	29-64	Hole 16 C, Core 5,	0.78		3.72	0.959	*				-		<	_	,		
		Bag 1 of 1				-			-			=		_			
2703	64-69	Hole 16 C, Core 6,	0 22		4.72	0 959	*					1	2				_
		Bag 1 of 1									ع	_					
2704	69-74	Hole 16 C, Core 7,	Trace	ڻ ا	7 47	0 959	*)	-					1
		Bag 1 of 2															
2775		Hole 16 C, Core 7,	0 34		3 78	0.959	*						_	_			
)		Bag 2 of 2												_			. ,
2706	74-72	Hole 16 C, Core 8,	0 46	_	4 85	0 959	*							-			
		Bag l of l												-			
2707	19-84	Hole 16 C, Core 9,	Trace	e)	9 15	0 959	*						_	-			
		Bag 1 of 1							-	-	-	-		-			
2708	8+-9.	Hole 16 C, Core 10	Trace	9	9 90	0 959	*	_	-			_		-			~
		B3g 1 of 3					-	-	-				-	-			} z
2709		Hole 16 C, Core 10	Trace	o o	8 50	0 959	*				-			-			
		B3g 2 of 3															
										-	-			-			
* क्षात्र	Specific	fic gravity cilculated from	norJ pa:	sverage	of	dnozb	1	,	,	1	-	1	,	-			,
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		1000		_p 1		*		en Tannatad	2442	ילסולהסמכולו		ວດ 1ດ	OKA	+ +	! !	 - 	1

Project Engineers W H. Renes

COLORADO SODOL OF MINES RESEARCH FOUNDATION Lab Group Number: 678-64

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3000	•			2	·_			3	•		Date	vare subminea:			٠.		:
6412-	ANALYT	ANALYTICAL LABORATORY REPORT)RT	Spo	Sponsor	Sun O11	ul Company	any		•	٠	•	١		,	•	1 A2 4
Lab.	Samp.		G/T _{O11}	G/T	G/T Water	Specific	t c									_	,
No	No.	Description	Est Fnd		Fnd	Est Fnd	d Est	Fnd	Est	Fnd	Est	Fnd E	Est F	Fnd Es	st Fnd	Est	Fn
2710		Hole 16 C, Core 10,	Trace		6.87	0.959	* 6										
		Bag 3 of 3				-											
2711	36-06	Hole 16 C, Core 11,	Trace		10 5	0.959	*							_			
		Bag 1 of 2											-				
2712		Hole 16 C, Core 11,	Trace	_	8.53	0.959	* 6:										
		Bag 2 of 2							-								
2713	95-100	Hole 16 C, Core 12,	Trace		7.09	0.959	*										
		Bag 1 of 2									•		· 				
2714		Hole 16 C, Core 12,	Trace		8.39	0.959	* 69							_			
		Bag 2 of 2					-	J	1	2			_		-		
2715	100-105	10c-105 Hole 16 C, Core 13	Trace		10.7	0.959	* 69				 			-			
		Bag 1 of 1				,											
2716	105-110	Hole 16 C, Core 14,	2.11		8 62	0.950	0										
		Bag 1 of 1								-							~
2-17	110-115	Hole 16 C, Core 15,	2.83		9.31	5.964	24										
,		Bag 1 of 2															,
2718		Hole 16 C, Core 15	3.03		96 2	0 956	99										
		Bag 2 of 2															
2719	115-12	115-112 Hole 16 C, Core 16	2 80		11 0	996 0	99										
		Bag 1 of 1															
2720	आ-सा	-125 Hole 16 C, Core 17	6.31		6.10	6 0	* 996							_		_	-
-		Bag 1 of 2				-											
2721		Hole 16 C, Core 17	6 67		7 11	6 0	956										السجيد
		Brg 2 of 2												ļ			
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"emarl a	* Spec	Specific grayity salculated		from average	ige of	dnox6							۴				1 -

December 29, 1964

Supervinor

Project Engineer W. H. Regves

Lab Group Number 678-64

COLORADO SCHOOL OF MINES RESEARCH FOUNDATION

COI ORADO SCHOOL OF MINES RESEARCE FOUNDATION PANC NO.

Project Numbers

Lab Group Number

678-64 840703

December 28, 1964 Project Engineer W H Date Submitted

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ANALYTICAL LABORATORY REPORT Golden, Colorado 6412-

Sponsor-

Sun Oil Company

Lab.	Samp.		ر ک	11	7/5	Water	Scanita	ravity								_			
No	No	Description	Est	Est Fnd Est Fnd	Est	Fnd	Est	Fnd	Est	ug Pu	3st I	nd E	3st .	Fnd Es	st Fn	d Est	Est Fnd Est Fnd Est Fnd Est Fnd Est Fnd Est Fnd	Est	Fn
2722	17.5-17.	2722 17-12-Hole 16 C Core 18		10.7		α α		090	-	<u> </u>	-	-			-	-			

Lab.	samb.		110		Water	or a	avity										_	
No	οN	Description	Est F	Fnd Est	t Fnd	Est	Fnd]	Est F	Fnd E	st	Fnd Es	st F	Fnd E	st Fnd	3 Est	: Fnd	Est	Fn
2722	125-13c Hole	Hole 16 C, Core 18,	10	7	8 85		096.0											
=		Bag 1 of 2										_						
2723		Hole 16 C, Core 18,	9.	.36	6.51		996 0	*			 	 						
, 		Bag 2 of 2																
2724	130-135	/3c-/35 Hole 16 C, Core 19	6.67	57	8.46		996.0	*				-	-		-			
		Bag 1 of 2								-			, ,,,,,		_			
2725		Hole 16 C, Core 19.	8.54	54	7.99		3 972			 								
		Bag 2 of 2										 						
2726	135-14° Hole	Hole 16 C, Core 20,	6.98	38	6 73		996.0	*										
		Bag 1 of 2					:			·			-	_				
2727		Hole 16 C, Core 20	9.54	74	6.79		0.975						_					
		Bag 2 of 2																
2728	140-145 Hole	Hole 16 C, Core 21	7.28	38	7 34		996.0	*				-	 					
}		Bag 1 of 2											-					
6, 3		Hole 16 C, Core 21	7	25	5.46	<u>.</u>	996.0	*							_	_		
ì		Bag 2 of 2					- -											
2730	145-150	Hole 16 C, Core 22	6.13	[3	3 96		996.0	*								_		
		Bag 1 of 2													<u></u>			
2731		Hole 16 C, Core 22	7 8	82	6 04		996 0	*										
		Bag 2 of 2											_		_			Ì
2732	150-157	Hole 16 C, Core 23	9	08 /	4 41		996 0	*		-					_			1
		Bag 1 of 3											-	-	_			
2733		Hole 16 C, Core 23	3	16	9 15		996 0	*				_	_					
		Big 2 of 3															ļ	
*	Specific	ic gravity calculated from	d fron	average	o f	group.					:			,				1 3

* Specific gravity calculated from average of group.

Date Reported December 29, 1964

678-64 Lab Group Number: OL OF MINES RESEARCH FOUNDATION COLOR ADO S PAGE NO 4

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Sun Oil Company 840703 Project Numbers

December 28, 1964 " Project Engineer: W. H. Re Date Submitted

> REPORT ANALYTICAL LABORATORY 6412-

Sponsor Golden, Colorado

لو) ا			$G/T_{O^{-\frac{1}{2}}}$		G/T		Specific	၂ ၂၁		_		_		_					
Lao.	oamp.		ᄓ		Water		Gravi	2	-							_			•
No	No.	Description	Est	Fnd	Est F		Est Fnd	ध	st Fnd	i Est	t Fnd	d Est	t Fnd	d Est	Fnd	Est	Fnd	Est	Fn
2734		Hole 16 C, Core 23,	6	86	ហ	207	996.0	26						-					
		Bag 3 of 3			-			_				-		-	_	-			Ì
2735	157-115	157-115 Hole 16 C, Core 24,	S	86 9	4	4.43	0.966	* 99				-	-	-	-				^
		Bag 1 of 2								-		-		-					
2736		Hole 16 C, Core 24,	5	00	<u>m</u>	22	0.966	* 99		-	-				-				
		Bag 2 of 2				-		_	_		-			-	-				
2737	165-172 Hole	Hole 16 C, Core 25,	9	26.9	6.	6.73	0.966	* 99	_					-					
		Bag 1 of 3									_	-		-	<u> </u>	_			
2738		Hole 16 C, Core 25,	7	49	5	49	96 0	967			-	-		-		-			
		Bag 2 of 3	-							_	_	-				_			
2739		Hole 16 C, Core 25,	7	20	4	38	9960	* 99	-		-	-		-	-	-			+
		Bag 3 of 3							_	-	_	-	-	-					
2740	172 180	18c Hole 16 C. Core 26.	9	79	6	39	96 0	* 996				-	-			-			
		Bag 1 of 1							are a	100 100	2	-	-	-					
7-41	190-157	180-157 Hole 16 C, Core 27	9	26	9	9.05	0.966	* 99	 		_			_		-			
١		Bag 1 of 1							1	1.	<u>_</u> ç								
2742	\$4-86	Hole 17, Core 4,	4	88	9	65	0.967	* 25		_			Š	Sed 13	31-12	3	1	118	
		Bag 1 of 1											X	자 보	1390		E		
2743	86-89	Hole 17, Core 5,	4	08	7	24	796 0	* 12		_			-	4	72.7	1			İ
		Bag 1 of 1								_	_	_	 	. 2		<u> </u>	24.		}
2744	, 36 68	Hole 17, Core 6,	- &	8 28	1.0	1.2	0.967	\$7.		_			- (-	;			, 70		, ,
		Big 1 of 1											<u> </u>	-			2		,,
2745	96 1.7	Hole 17, Core 7,	<u>ν</u>	59	6	82	796 0	57 *			_	<u> </u>		-					
		2					-							-					
							 -				<u> </u>	-		-	_	-			*-

group. * Specific gravity calculated from average of

1 2 2

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1 4004	n • 0	,			<u> </u>	יוסופרו יאסו	umper .		5.			Date	Date Submitted	ed	プルフル	7	ET COS	1304	:
6412-	ANALYTICAL	LABORATORY	REPORT		Spo	Sponsor.	Sun	011 Cc	Сопрапу	•	1	i		غد	,	۶- ۲	ر بر خ		ì
Lab.	Samp.		6/1	$^{\mathrm{G/T}_{\mathrm{Ol}1}}$	G/T_{W}	G/Twater S	Specific												i
No	No	Description	Est	Fnd	Est	Fnd]	Est Fnd	d Est	t Fnd	Est	Fnd	Est	Fnd	Est	Fnd E	st	Fnd	Est	Fn
2746		Hole 17, Core 7,		2.49		5 57	0.967	++					++		11-		-	-	
		Bag 2 of 2																	
2747	104 111	Hole 17, Core 8,		9.50		5 63	0.96	5							-	-	-	-	
		Bag 1 of 2										-					-	-	
2,48		Hole 17, Core 8,		5.98		7 22	D.967	* 25		-		-					-		
		Bag 2 of 2					-	-	_							+			
2749	111-119	Hole 17, Core 9,		90 8		7.14	0.958	80								-			
		Bag 1 of 1				<u>-</u>								-				-	
2750	119-176	4 Hole 17, Core 10,		7.45		5 55	0 967	* 2				-				-		-	
		Bag 1 of 3														-		-	
2751		Hole 17, Core 10,		7.56		5 96	0.967	* 20								-	-	+-	١,
		Bag 2 of 3							 	_						-		-	
2752		Hole 17, Core 10,		7.68		4.84	0.967	* 20							 -	-	 	-	
		Bag 3 of 3												-	-		-	-	
7.53	126-134	4 Hole 17, Core 11,		7 54		5.62	96 0	* 20						-		-	-	<u> </u>	
`		Bag 1 of 4							-										
2754		Hole 17, Core 11,		7 98		6 03	0.967	* 10									-		
		Bag 2 of 4						_				-			-	-	-	-	
2755	-	Hole 17, Core 11,		10 5		8.35	0.964	40						-		-		}_	
	_	Bag 3 of 4	Ð				-	-				 -		-		-	5	-	pg*
2756		Hole 17, Core 11,		7 74		7 49	0 967	*				1		-	-	-		1	
e l	1 2	Bag 4 of 4	1,	~	-	7 ^ -		-						*	-	- =		<u> </u>	
2757	134-141	Hole 17, Core 12,		9 29		7 42	0 97	8					-						
		Bag 1 of 3				j.									-		-		-
٠	4	*	•		-			<u> </u>						-					1
a, t	*. Specific	If it dravity calculated		from	otto rado	2	o i o i	,	,		 		1	-	-	_	-	7	;
					2010	5	Strong.						.			,		7 ¹	ČE T

December 29, 1964

Date Reported

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Date Submitted December 28, 1964

840703 678-64

Lab Group Number

ATOTT STOLLTON T TYPOST PROPERTY AND THE TOTAL

PAGE NO. 5 Golden, Colorado

Project Number .

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.. Project Engineer W. H. Ry

COLORADO SCHOOL OF MINES RESEARCH FOUNDATION

Golden, Colorado PAGE NO. 6

ANALYTICAL LABORATORY REPORT

6412-

678-64 Lab Group Number.

Project Number.

840703 Sponsor. Sun Oil Company

December 28, 1964

W. H

Date Submitted Project Engineer

Lab.	Samp.	!	G/T	011	G/T Wa	Water S	Specific	,,,			-						_	
No	No.	Description	Est	Fnd	Est F		Est Fnd	# E3	FndE	Est F	Fnd E	Est F	Fnd Es	st Fnd	nd Est	t Fnd	Est	Fnc
2758		Hole 17, Core 12,		5.84	Š	5 03	796.0	*		-		 	-	-		╢─		
		Bag 2 of 3								 	-				_	-		
2759		Hole 17, Core 12,		9.52	9	.37	0.967	*				-		_	-			
ا ' ٦		Bag 3 of 3							<u> </u>									
2760	141-149 Hole	Hole 17, Core 13,		9.82	7	7.01	0.973						-					
		Bag 1 of 2] 							-	_		-		
2761		Hole 17, Core 13,		29 9	6.	6.10	0.967	*					-					
		Bag 2 of 2																
2762	149-154 Hole	Hole 17, Core 14,		3.95	2	2.18	0.967	*			-	-	-	-				
		Bag 1 of 1										ļ	-	-				
2763	156-164	156-164 Hole 17, Core 15,		7.58	_ n	3.67	0 967	*		-		-		-				
		Bag 1 of 3											_					
2764		Hole 17, Core 15,		90 9	3	26	296 0	*								_		
		Bag 2 of 3									-					_		
2.15		Hole 17, Core 15,		3 52	C)	87	0.967	*										
)		Bag 3 of 3					-							-				
2766	164-171	Hole 17, Core 16,		5 04	3	17	0 967	*										
		Bag 1 of 1													_			
2767_	211-111	171-172 Hole 17, Core 17,		5 88	3	56	296 0	*									7	
		Bag 1 of 2			-								-				-	
2768		Hole 17, Core 17,		7 21	4	4.74	0.967	*					-	-	J			
		Bag 2 of 2												-	-			
2769	179-184	Hole 17, Core 18,		8 40	6	20	196 0	*										
					\dashv								_	_				
													•					-

* Specific gravity-calculated from average of group. emarks

Date Reported

December 29, 1961

tap Group Number: Project Number PAGE NO. A Golden, Colorado

Sun Oil Company Sponsor.

6412- ANALYTICAL LABORATORY REPORT

840703

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Lab.	Samp		G/T O.1	i	G/T Water	Specific	O.P.										-	
No	No.	Description	Est Fnd	72	Fnd	1	nd Est	Fnd	Est	Fnd	Est	Fnd	Est	Fnd	Est	Fnd	Est	FD
2770	186-19,	186-191 Hole 17, Core 19,	9.02	2	8.28	0.967	57 *		-	-			∄—	 	H.	╫━		
		Bag 1 of 1							<u> </u>									
2771	194-20	194-20/Hole 17, Core 20,	6.36	9	6 84	96.0	¥ 295				-					-		
		Bag 1 of 1						1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3						-		
2/12	ž Ž	Hole 17, Core 21,	5.14	4	9.34	96.0	* 296		-	4					-			
		Bag 1 of 2							-								-	-
2773		Hole 17, Core 21,	6.57	7	8.52	0.96	* 29				-	-			-		+	
		Bag 2 of 2										-	-	-	-			
2774	209-218	g Hole 17, Core 22,	3 0	01	8.76	0.96	* 19				-							
		Bag 1 of 2																}
2775	218-274	218-224 Hole 17, Core 23,	0 2	28	10 1	0.96	* 29		-				-					
		Bag 1 of·1							-						-			
2776		Hole 17, Core 22,	1.63	6	10 8	0.96	* 29		-				-				-	
		Bag 2 of 2									-				-			ļ
2777	224-233	Hole 17, Core 24,	1.96	9	11.3	0.96	* 196				\vdash				-		-	
		Bag 1 of 2															-	
2778		Hole 17, Core 24,	2 5	56	8 65	0 6	* 19		-				-	-	-			-
		Bag 2 of 2									-					-	-	
2779	33-84	Junk Sub 1	4.72	2	7 16	6 0	* 19				-							1
-		٠		_			,				-		-		-			
-	_ ~-	2.00	æ	-	-		-	r ==	,	*		٠ <u>-</u>	-		-			
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* Specific gravity_cylculated from average of group tem erles

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	ر د د ا	, , , , , , , , , , , , , , , , , , ,	₹ 1°5 4	Est			7						,	,	-		£ ''1		1		,		-	1		1,5					.#
Ves	196	24-2145	-	Fnd																										45	7
H. P.	July 14,	4-2	, ,	Est			_						_						,	_	_	 	_		-	\vdash	-	-	-		The state of the s
. ₩.	July	7-h		Fnd]														-						-,				-		=	
Jineer	eq	3 T	-	Est]										-			-		-	_					-		-	-		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1
Project Engineer	Date Submitted	1 1		Fnd E																				-		1.1		-			1965
Project	Date S	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		st					<u>-</u>								-							1	-	_				4	15,
- 4. 4.	_	1	-	Fnd E														-			- 		_							# # # # # # # # # # # # # # # # # # #	July
5 1 1 1 1	•			st	_										-											<u>,</u>				,,er 1.	
708-65	840703	yas		Fnd E	-																			Ja .			-			\$ _ f	Date Reported
, Z	8	Сопрапу		Est F																				-	,					ξ, , , , , , , , , , , , , , , , , , , ,	Date
,	ŧ	011	fic		.965	965	965	* 696.	* 596	0.965	.965	965	4 596.0	* 596.0	0.965	* 596.0	* 596.0	* 596	* 596	965	965	965 #	* 596	965 *	* S96.0	* 596.0	* 596.0	+ 596.0	* 596.0	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	i de Se
Number Number	ber.	Sun	Specific	Est I	Ö	_0	o	<u> </u>	Ó	<u>.</u>		0.	0	0.	0.	0	<u>.</u>	0		_d	<u> </u>	0	0	0	0	0	o	0	o -	-dnozi	まい はい
-	Project Number				3.16	16.5	19.6	4.4	6.9	9.7	11.5	12.1	14.7	3 0	2.1	16.9	2.3	8.8	• 1	9	9.	2	4	20.3	9	0.	14.2	16.2	16.7	of g	ct i
Lab Group	Projec	Sponsor	G/T Water	Est F	3	ñ	7	14	16	17	F	-	1	13	12	15	, 12	13	12	7	=======================================	19	16	5(19	19	1.6	16	16	, average	
į į				Fnd E	0.00	Trace	Trace	1.25	Trace	Trace	19	0.00	Trace	Trace	2.10	22	0.99	Trace	32	72	2.12	Trace	Trace	Trace	Trace	Trace	2.06	47	58	i	[14]
NDATIC	, Interpretation	۲.	G/T 011	Est F	o	Ţ	Ä		Tr	7		Ö	T	Tr	2		Ö	7.	0	ᅾ	2	H	Tr	7	T	Ţ	2.	7	0.58	from	本
H FOU	` i •,	THE T		田		1	2	-2	2	2	7	7	2	7	7	-2	2	- 2	2	- 2	2	2	2	2	. 0	2		2	±01	calculated	, g
SEARC	rado	TORY	Вад	tion	1 of	1 of	1 of	1 of	1 of	2 of	1 of	2 of	1 of	1 of	1 of	1 of	2 of	1 of	1 of	1 of	2 of	1 04	2 of	2 of	1 of	2 of	l of	2 of	1 of "2	calcu	3
NES RI	, Colo	LABORATORY Hole 18		Description	only				a		4					6	a				_					only			-	gravity	\
OF M	Golden, Colorado			D	Top or	Top	Top	Bottom	Bottom	17.0	Bottom	Top	Top	Bottom	Top	ottom	Bottom Only	Top	Bottom	Top	Bottom	Bottom	б	Balton	Bottom	Top on	Top	Bottom	Top	- 1	7
SCHOOL		ANALYTICAL	e np.	•	Sub	H	-	<u> </u>	ELI P		m	H	-	m	H	m		H	<u>m</u>	H	МO	m	H	<u>ω</u>	7	H	H	-	ř,	Specific	~ \(\frac{1}{2}\)
COLORADO SCHOOL OF MINES RESEARCH FOUNDATION	NO NO	ANA	Core Samp.	No.	S D		7	2	m	m	4	4	N	20	و	9	7	8	8	6	6	10	ឧ		12	12	13	14	15	* Spe	4
COLO	PAGE	657-	Lab.	No.	954	955	926	957	958	959	096	1961	962	963	964	965	996	296	968	696	970	971	972	973	974	975	926	977	,'978	murks	portion that the

COLORA	COLORADO SCH	L OF MINES RESEARCH FOUNDATION	FOUND!	ATION	Lab G	Lab Group Number	nber	34.	342-64	1 11	: : *	i	546		2-05-02	beauti		 大。 一。 一。	3 5
	ام. " ا	GOLDEN, COLORADO		,	Proje	Project Number		840703	03	٦.		Project	Project Engineer	er W.	H	Reeves		Sar A	
AN	ALYTIC	ANALYTICAL LABORATORY REPORT	PORT		Sponsor	Sor	Sun Oil		Company			Date St	Date Submitted		September	10	, 1964		
1.ah	Samp		L/2	021	G/T Wa	Water	Specific Gravity	fic 1ty											
No.	No.	Description	Est		Est		Est	 	Est F	Fnd E	Est F	Fnd Est	t Fnd	nd Est	Fr	Est	Fnd	Est	Fnd
222	23-27	Bag #1 Core #1		0.62		11.5	0	* 096°0					40.		219 ft	4-	Ì		
223	27-35	Bag #1 Core #2	: 	1,20		7.13	0	096.0	*		-	-	ĬŲ.	Riobyara	700	83	*		
224	, ,	Ξ		1.38		9.18	0	096.0	*				_	-	3055	1994	1		
225	35-43	Bag #1 Core #3		0.98		7.26	0	096.0	*				7	Elevation		appro	4 129	35	ŧ.
226	-	2		1.55		9,23	0		*							_			,
227		н 3 п 3		0.85		6.63	0	0960	*							-			(
228	43-52	Bag #1 Core #4		1.41	١	11.7	0	096.0	*										
229				0.34		11.0	0	096.0	*	·-						-			
230	52-64	Bag #1 Core #5		3,34		10.3	0	096.0	*					_	_		,		
231		n 2 u 5		3.18		99.9	_0_	09600	*						_				
232		# 3 # 5	·	8.08		7,38	0	096.0	*										
233		11 4 11 5		5.09		10,8	9	0.960	*								; 		, ç
234	62-70	Bag #1 Core #		3,56		8,12	<u> </u>	0,960	*		_						**		•
235		n 2 n 6		3,78		9.28		096.0	*										,
236		n 3 n 6		7,30		10,5	J	0,960	*	-P	9	7	history	brara	 				
237		и 4 и 6		11.7		9,62		0.955	-		.								;
238		11 5 11 6		11.7		8,23		0.975		 }									J
																		3	*
							j.		7	ξ,									
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September 14, 1964%

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* * Specific grayity calculated from average of group.

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COLORAL	COLORADO SC	L OF	F. MINE	ES RESE	L OF MINES RESEARCH FOUNDATION	AGNUC	, , , , ,		Lab Group Number	umber.	~	351-64	. 49	# 25 4	1	المستعدد	, e }	**		1	, ~	, t. } 4 1	Pig 1
S	PAGE NO. 1	Golde	EN, C	GOLDEN, COLORADO	,			Project	ect Number:	je je		840703			ž I	Project Engineer	gineer	3	H. Re	Reeves			غد (
AN/	ANALYTICAL LABORATORY REPORT	AL L	ABO]	RATOR	X REP	ORT		Spoi	Sponsor	Sun	oil, c	Company	NA.		ğ	Date Submitted	oltted —	Sej	September	14	, 1964		- 1
-	Samp.					G/T	011	G/T	G/T Water	Spec	Specific Gravity												łi
	No	-	Desc	Description	uc	Est	Fnd	Est	Fnd	Est	Fnd	Est	Fnd	Est	Fnd	Est	Fnd	Est	Fnd	Est	Fnd	Est	14
	10-18	Bag	#1	Core	L#		7,38		10,8		0,931												ļļ
		Ε	7	E	7		60.6		7.51		0.944												
		=	3	=	7		10.2		7.01		996.0											-	1
	18-86	Bag	#1	Core	8#		8,50		8.29		0.974		į.										į
		=	7	E	8		9.45		8,34		0.954	i							4-		-		- 1
		=	ო	E	ø		10,1		7.44		0.958											-	- 1
		Ξ.	4	E	80		10.1		6.94		0.968												
		=		=	8		9.78		7.59		0.958											-	
	96-98	Bag	#1	Core	6#		10.1		8,13		0.932						2						- 1
		=	7	E	6		5.67		6.21		0.948												
	t		3	ш	6		8.37		6.86		0,985												j
		=	4	E	6		7.28		7.90		0.967				i							-	- 1
		E	S	E	6		06°9		7.52		0.967						_						. 1
	401-96	Bag	1#1	Core	01#		8.43		7,50		0.942												l t
		=	7	E	10		8.02		6.28		0,965	*											- 1
		н	3	u	10		9.82	_	6.65		0.955										-		ŀ
	h11-h01	y Bag	1#1	Core	#11		5.86		10.1		0,965	*											1
		=	2	E	11		7,41		9.86		0.949												
		#	3	Ŧ	11		5.64		10,3		0,965	*										•	N
		11	4	#	11		5.97		9.83	W-2	0.963									7		-	1
	- 1 × 15	#	5	E '	11		9.07		7.42	٤ .	0,971	<i>-</i>	÷_	,	•	~	÷		3	,7×		** * }	- 1
	114-124	Bag	1#1	Core	#12		9.20		11.6		0.956					*****						j	
	-		7	=	12		10.6		11.4		0.958												- }
		=	ю	E	12		8.94		10.1		0,991												1
_		E	4	E.	12		9.40		11.2		0.972	- <u>A</u>											-

... Date Reported

* Specific gravity calculated from average of group.

marks

September 16, 1964

PAGE N	. 2 . 2	PAGE NO. 2 GOLDEN, COLORADO -			Proje	Propert Number	į	840703	60.			Protec	Protect Engineer		W. H.	Reeves	8	`	
AN	ALVTIC	ANALYTICAL LABORATORY REPORT	, ORT			Ů.	6	Sun On 1 Company	Dany			,			September		14, 1964	ਚ	*
649-				į	Spon	Sponsor						_ Date	Date Submitted				1 !		
Lab.	Samp.		G/T	oil	G/I Water		Spec	Specific Gravity											
No.	No.	Description	Est	Fnd	Est		Est	Fnd]	Est	Fnd	Est I	Fnd E	Est F	Fnd E	Est F1	Fnd Est	t Fnd	Est	Fnc
371		Bag #5 Core #12		10.6		11.9		996°										4	
372	124-134 Bag	4 Bag #1 Core #13		11,1		10.6	<u> </u>	0.961											
373		n 2 n 13		9.27		10.4	J	0.970											
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September 16, 1964

. Date Reported

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351-64

Lab Group Number....

COLORADO S OL OF MINES RESEARCH FOUNDATION

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- F - 4m	sves	15,		<u> </u>	Est Fnd	-		-						*												47				<u></u>	
, n, , n,	H. Reeves	September	-		Fnd	-											4								-	7. ~	7	-		J	,
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360-64	840703	Company		ļ.	Est F							1														, L					
	84(Sun Oil C	1110	Gravity	Fnd	0.929	996.0	0.953	0.970	0.938	0.962	0.936	0.962	0.953	096°0	0.962	0.962	0.984	656°0	0.979	0.974	0,962	0.974	0.962	0,975	0.975	0.962	0,953	0.948	0.945	
Number	nber	Sun	Spec		Est										at.				3		ĵ.							7	8		
Lab Group Number	Project Number	Sponsor		-> -		8,30	7.96	9.07	8.80	9.24	8.85	4.41	5.70	9.76	5,73	3.94	4.15	3.72	5.88	5,39	6.26	3,81	3,98	4.12	4.95	3,95	18.3	5.27	5,18	7.39	•
	Ā	So	16/1	T.	d Est		80	4	2	5	0	9	2	2	4	5	7	1	9	80	8	19	0	0	4	8	, L'	6.	0.	8.	
DATION		ī	G/T			9,31	8.58	8.84	8,42	6.25	06*9	7.23	5.92	10.2	8.94	5.75	7.92	10.1	14.6	12.8	12.8	6.61	6.70	8,20	8,34	, " 8 <u>.</u> 48	2,47	11.	13	12.	,
H FOUN	~	REPOR'	 	, ,	Est	6	4	4	14	14	14	5	15	15	15	9	16	16	7	17	17	8	18	18	18	0	19	0	20	20	
OL OF MINES RESEARCH FOUNDATION	RADO	rory i			ption	Core #13	Core #14	14	" "	1 1	n 1	Core #15	H I	1 1	# 1	Core #16	T 4	1 1	Core #17	ı,	# T	Core #18	" 1	T #	T	Core #19		Core #20	=	1 2	
A SANIM	GOLDEN, COLORADO	BORAT			O	#3 Cc	#1 C	5	6	4	5	#1 C	2	m	4	#1 C	8	В	#1 C	2	9	#1 C	2	3	7	#1 C	5	#1 C	7	ю	*
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September 16, 1964

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COLOR	Colorado so	L OF 1	MINE	L OF MINES RESEARCH FOUNDATION	CH FO	UNDA:	NOL	LabG	Lab Group Number	mber.	ฑั 	360-64		.				;		,	ِ ا	•	# ~ \
PAGE NO. 2		GOLDEN, COLORADO	වි	LORADO	1		1	Proje	Project Number	þ	84(840703			. Proj	Project Engmeer	meer	3	H. Re	Reeves			'
AN 649-	IALYTIC	AL LA	BOR	~	REPO	RT		Sponsor	ior	Sun	oil	Company	ny		. Date	Date Submitted	tted	Sep	September	15	, 1964	4	,e
Lab.	Samp.					G/T	oiı	G/T wa	Water	Speci Gra	pecific Gravity												
No	No		esci	Description		Est	Fnd	Est	Fnd	Est		Est	Fnd	Est (F	Fnd F	Est	Fnd	Est	Fnd	Est	Fnd	Est	Fnd
452		Bag #	#4	Core #20	0		11.1		10.5		0.959	,	0	2	٥	7	ahma	7,7					,
453	199-209 Bag		#1 (Core #21			8.02		6.77		D.963	,	3	1			\longrightarrow						
45		z	2	11 2	21		6.62	•	7.36		0.954	*											
455	209-219	Вад	#1	Core #22	2		26.2		8,00		0.954	*		-							i. I		
456		=	0	# 2	22	- *	3,24		7.56		0.954	*			1								
457		=	ന	11 2	22	•	4.22		5.84		0.954	*											F
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ıarks	* Specific	Lfic g	gravity	ty calc	calculated		from a	average	e of	group.	Ď.												~
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September 16, 1964

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Fnc Stake Est , t の、干・井八 FndEst イズイ 5 Lorara Fnd Est | Fnd -44-, כון 1210 Darth 15 ST Bssc Υ E Se Est . -Fnd Est ۵ Fnd Sun Oil Company Est Fnd Est * * * * 965 970 2967 Specific Gravity 696 0 958 0 967 296 0 0.967 0 962 0 967 **196 0** 0.967 0 0 0 0 G/T Water 5 62 92 0 68 Fnd |Est | Fnd 21 S Ø 9.59 S 2 11.7 Φ Sponsor 13 15 12 12 13 11 1 Φ ω 26 63 43 7 16 11 6 2 ~ 32 N 78 81 011 11 11 10 11 'n m 4 Ŋ 4 Est ANALYTICAL LABORATORY REPORT 4 2 εñ e, e, Hole 4, Core 2, 0 ď 4 4 'n 4 Description Hole 4, Core Hole 4, Core Core Hole 4, Core Core Hole 4, Core Hole 4, Core Hole 4, Core Hole 4, Core Hole 4, Core Hole 4, Core Bag 1 of 4 Bag 3 of 4 Bag 3 of 4 Bag 2 of 4 Bag l of 4 Bag 4 of 4 Bag 4 of 4 Bag 2 of οţ Bag 4 of 2 of Bag 3 of Hole 4, Hole 4, Bag 1 Bag Samp. -7-37 37-47 47-57 651-Lab. 450 452 453 455 456 451 454 458 460 459 461 N

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January 15, 1965

W. H Reg

Project Engineer

Date Submitted

840703 41-65

Lab Group Number

COLORADO SCAOL OF MINES RESEARCH FOUNDATION PAGE NO. 1 Golden, Colorado

Golden, Colorado

Project Number

* Specific gravity calculated from average of group emarks

pervisor

COLORA	Do scr	COLORADO SCIPOL OF MINES RESEARCH FOUNDATION		Lab Group Number	umber	485-64	ابق		M 1-65-8	4			045 163	رای در
PAĞE NO.	io. 1	I GOLDEN, COLORADO		Project Number	Jet.	840703		Ē	Project Engineer	meer W	H	Reeves	# #	0
AN 6410-	ALYTIC	ANALYTICAL LABORATORY REPORT 6410-		Sponsor S	Sun 011	Company	ny	Q	Date Submitted	j	October	27, 1964		4
Lab	Samp	G/T 011	1	Wt.%	G/T Water	J	Wt. Mater Wt	t & Gas		pent _T	Wt% Spent Coking Shale Tendency	Specific	610 110	
No	No	Description	ਯੂ	t Fnd	Est Fr	Fnd Est	Fnd	Est Fnd		Fnd E	Est Fnd	<u> </u>	nd Est	Fnd
3841	7	Hole 10, Core 11,	7.44	3.0	5.	5.72	2.4	2.8	0,	91.8	None		173	
		132-140, Box 2 of			•		Core Ko	Kola #10	NEC 8	-53+1	3			
Ì		2, Bag 2 of 3				-,-								
30 +2	2	Hole 10, Core 12,	4.77	1.9	6.	21	2.6	4	_ 0	1 10	None	0.976	* 920	
		140-149, Box 2 of					•			t				,
		3, Bag 2 of 4												
3843	60	Hole 10, Core 11,	7.24	2.9	5.8	.83	2.4	3.2	6	91.5	None	0.976	* 920	
		132-140, Box 1 of			-									
Control of the Contro		2, Bag 3 of 3												
3844	4	Hole 10, Core 11,	4.84	2.0	J.	98	2.5	4.0	6	91.5	None	o	* 926	
		132-140, Box 2 of												
		2, Bag 1 of 3												
3845	2	Hole 10, Core 15,	12.0	4.8	9.	18	3.8	4.1	8	87.3	None	o	970	
1		165-175, Box 1 of						-						į
- '		2, Bag 4 of 4												
3846	9	Hole 10, Core 15,	9.72	4.0	9.0	67	4.0	5.3	8	86.7	None	0.993	660	
		165-175, Box 1 of		-									_	
		2, Bag 3 of 4	-											
3847	7	Core 15,	14.7	5.9	8	.02	3.3	4.5	8	86.3	None	o	896	
		165-175, Box 2 of												
		2, Bag 2 of 4						t					,	
3848	8	Hole 10, Core 15,	9.90	4.0	7.8	.88	3.3	4.4	8	88.3	None	o	986	
	-	165-175, Box 2 of								-				
		2, Bag 1 of 4												
emarks *	Specific	ific gravity calculated		from average	of	group.	و					101-10	1,0,1	*
apervisor	N	Mederica			ţ	ğ	Date Reported		October	27.	1964	7 cg r	u,	

COLORADO SCOR OL OF MINES RESEARCH FOUNDATION PAGE NO. 2

485-64 Lab Group Number

Project Number

840703

Project Engineer ...

6410-ANALYTICAL LABORATORY REPORT GOLDEN, COLORADO

Sun Oll Company G/T Water Sponsor Wt.%

Date Submitted __

October 27, 1964

W. H. Reeves

Lab	Samp		G/T ₀₁₁	11(Wt.%	ł	G/Twater	Wt.% Water		Wt % Gas + Loss		Spe	nt CC	Wt% Spent Coking Shale Tendency		Specific		
No	No	Description	Est	Fnd E	Est F	!	t Fnd	Est]	Fnd E	Ω		Fnd	d Est	Fnd	1	Fnd	Est	Fnc
3849	6	Hole 10, Core 13,	ω U	8.51	3.5	2	8.01		3.3	3.4		80	α	None		1,70 0		
		149-155, Box 1 of							ţ	ì		•	_					
		2, Bag 4 of 4										_	-					
) <u>e</u>	10	Hole 10, Core 13,		4.18	1.	7	7.86		3.3	3.7		91.	m	None		920 0	*	
		149-155, Box 2 of														•		3
		2, Bag 1 of 4							-									
3851	11	Hole 10, Core 13,		8.09	n,	2.	6.40		2.7	2.8		5	ď	N C N		190 0		
		149-155, Box 1 of			-					1		ł						7
		2, Bag 2 of 4																
3852	12	Hole 10, Core 13,	5	9.60	2	m	7.19	,	3.0	4.1		90.	9	None		0.976	*	
		149-155, Box 1 of																
		2, Bag 3 of 4											_					
3853	13	Hole 10, Core 14,		5.88	2.	4.	9.05	.,,	3.8	4.1		89.	7	None		0.976	*	
Ì		155-165, Box 2 of			-													
		2, Bag 1 of 3																
3854	14	Hole 10, Core 14,		14.7	5.	6	8.42	ζ-,	3.5	4.9		85.	7	None		0.967		"
		155-165, Box 1 of									ļ ——						-	1
		2, Bag 3 of 3																
3855	15	Hole 10, Core 14,	-00	.83	m	••	9.22	4-1	3.8	4.4		88.	2	None		0.980		
		155-165, Box 1 of			_								<u> </u>					- t
		2, Bag 2 of 3					,											
3856	16	Hole 10, Core 12,	7	.31	m	0.	7.08		3.0	3.7		90	m	None		0.970		
		140-149, Box 3 of							,					<u> </u>		4		-
		3, Bag 1 of 4																,
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	(•															

* Specific gravity calculated from average of group. emarks

upervisor

October 27, 1964 Date Reported 485-64 Lab Group Number

840703 Project Number

Project Engineer W. H. Regves

ANALYTICAL LABORATORY REPORT 6410-

Sun Oll Company Sponsor

Date Submitted October 27, 1964

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Lab	Samp		G/T 011	1	Wt.% 011	G/T Wa	Water	Wt.% Wt.% Gas Water + Loss	wt.% + L		Vt% Sha	pent C	Wt% Spent Coking Shale Tendency		Specific	-
No	No	Description	Est]	덫	Est Fnd	Est	Fnd E	st Fnd	Est		Est	Fnd Est	t Fnd		Fnd	Est Fnd
3857	17	Hole 10, Core 12,	80	8.13	3.3	9	6.73	2.8		5.1	8	88.8	None		╢┰	
		140-149, Box 1 of	- No. 1					<u></u> , ,								
į		3, Bag 4 of 4									 					
3(3	18	Hole 10, Core 12,		7.09	2.9	9	6.68	8		L 4	0	٥	None		080	
		Box]						•		†		.				**
		3, Bag 3 of 4								<u> </u>						
3859	19	Hole 10, Core 16,	12	6.5	5.3	8	.79	3.7		4.4	0	86.6	None		0.979	
		175-185, Box 2 of	90.	-												
		2, Bag 1 of 4														<u> </u>
3860	20	Hole 10, Core 16,	15	5.5	6.3	1	10.6	4.4		5.0	ω	84.3	None		0.981	
		175-185, Box 1 of	•	-	-							I	_			
		2, Bag 4 of 4										-				
3861	21	Hole 10, Core 16,	12	.1	4.9	8	.31	3.5		4.0	80	87.6	None		0.972	
		175-185, Box 2 of														
		2, Bag 2 of 4														
3862	22	Hole 10, Core 16,	12	12,1	4.9	7	10.1	4.2		4.8	80	86.1	None		0.975	
		175-185, Box 1 of											_			
:		2, Bag 3 of 4													!	
3863	23	Hole 10, Core 26,	0	27	0.1	9	.63	2.8		2.0	6	95.1	None		* 926 0	
		254-257, Box 1 of	-												ı]	
		1, Bag 1 of 1													*	*
3864	24	Hole 10, Core 22,	9	6.78	2.8	3	.92	1.6		3.7	91	1.9	None		* 926.0	
		218-228, Box 1 of				_										
		1, Bag 2 of 2						•								
emerke	* Spec	Specific gravity calculated	ulated	1 from	average	0.f	grond		-							

* Specific gravity calculated from average of group.

Opervisor Chil

October 27. 1964

Lab Group Number Project Number. L OF MINES RESEARCH FOUNDATION GOLDEN, COLORADO PÁGE NO. 4 COLCRADO SCI

485-64

840703

Sun 011 Company

Sponsor _

Project Engineer

W. H. Reeves

October 27, 1964

Date Submitted

manufacture and Survey

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ANALYTICAL LABORATORY REPORT 6410-

Fnd Est * * * * Specific Gravity 0.968 0.976 0.976 0.976 0.976 0.976 0.969 0.977 Fnd Est None None None None None None Wt.% Gas Wt% Spent Coking + Loss Shale Tendency Fnd None None Fnd Est 90.6 92.1 93.3 93.7 96.2 92.2 92.7 88.2 Est Fnd Est 3.0 3,9 3.7 3.3 2.8 2.4 2.7 5.1 Fnd 1.8 2.8 5.0 2.5 1.2 1.9 2.1 3,1 Fnd Est G/T Water 4.69 5.18 2.96 5.05 4.53 7.38 4.25 6.61 Est Est | Fnd Wt.% 2. 5 1.4 1.4 0.2 4.8 2.5 1.1 3.1 3,39 3.53 2.78 0.54 6.20 Fnd 11.8 6.22 7,58 Est G/Iof U O 24, ¥ O UO of ਧ Hole 10, Core 22, Core 24, S. Hole 10, Core 25, 19 Hole 10, Core 25 21 21 218-228, Box 1 200-204, Box 1 Box 1 244-254, Box 1 Core Core Core N 0 N Core Description 2 Box Box Box οť 1, Bag 2 of 1, Bag 1 of oť of 1, Bag 2 of 2, Bag 2 of Hole 10, Hole 10, Bag 1 1, Bag 1 Hole 10, 234-244, 234-244, 244-254, Hole 10 208-218, Hole 10, Bag Samp No 25 26 27 20 00 29 32 30 31 3865 3870 3872 ? 3868 3867 3869 3871 Lab. No. 3

group. from average of gravity calculated Specific

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208-218, Box

2, Bag 1 of

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October 27, 1964

L OF MINES RESEARCH FOUNDATION GOLDEN, COLORADO CÓLGTADO SCI RAGE NO. 5

485-64 Lab Group Number. 840703 Project Number _

W. H. Reeves Project Engineer _

> Sun O11 Company ANALYTICAL LABORATORY REPORT 6410-

Sponsor

Date Submitted

Fnd Est * * 0.973 0.975 0.989 0.976 Specific 0.996 0.976 Fnd Est None None None None None None Coking Tendency Fnd Est Wt.% Gas Wt% Spent + Loss Shae Fnd 88.7 91.9 89.6 92.1 93.9 92.2 Fnd Est 3.5 1.4 2.6 2.7 3 3.4 Est Wt.% Est | Fnd 2.5 2.2 2.2 2.0 2.0 2.5 Fnd Water 5.93 5.89 5.33 4.79 4.74 5.31 Est G/TFnd 5.3 2.8 3.2 4.9 4.4 0.7 011 Wt.% Fnd Est 6.95 7.76 1.69 11.8 10.8 13.1 011 Est of of 17, JO O.F HO Hole 10, Core 20, Hole 10, Core 17, 18, Manitoba Dug-Out CH#10, Core 17, 204-208, Box 1 Ø 185-195, Box 1 Core Core m Description 185-195, Box Box Box of 1, Bag 1 of 2, Bag 2 of of 3 of Hole 10, 185-195, 195-200, Hole 10, Bag Bag l, Bag Sample 0 5 Samp S N 33 34 35 36 38 37 3873 3875 3876 3878 3877 Lab S_N

gravity calculated from average of group, Specific

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October 27, 1964

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COLORCE SCHOOL OF MINES RESEARCH FOUNDATION PAGE NO. 1 Golden, Colorado

ANALYTICAL LABORATORY REPORT

840703 111-65 Lab Group Numbers Project Number

Date Submitted

C 11 # 10A - Sout 1965 Project Engineer: W. H. Reeves February

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652-	ANALYT	ANALYTICAL LABORATORY REP	REPORT		Sponsor		Sun Oıl C	Oll Company		`				# ≖ ບ	#	भूक '	
Lab.	Samp.		G/T O11		G/T Water	\vdash	Specific										
No	No	Description	Est	ס	Est Fnd	nd Est	Fnd	Est Fnd	d Est	Fnd	Est	Fnd E	Est Fnd	d Est	Fnd	Est	Fnd
247	561-161	Hole 10A, Core 1,	1	118	9.46	46	0.972					Sec. 8	8-53-1	4			
		Bag l				-						-	1400				
248	195-200	Hole 10A, Core 2,	6	77	12	1	996 0					1	ž X				
		Bag 1			-							100	.~	1 0			!
249		Hole 10A, Core 2,	6	48	8	8	0 973					60		Ę,			!
		Bag 2											-				
250	کهر- ۵۰۵	Hole 10A, Core 3,	6	66 (6	30	0 973	•									
i.	_	Bag 1						,									
251	205-210	Hole 10A, Core 4,	7	7.25	8	46	0 975										ų
		Bag 1															ħ
252		Hole 10A, Core 4,	9	5 23	6.97	26	926 0								ļ		
		Bag 2															
253		Hole 10A, Core 4,	8	20	6.49	49	0 970	,					-				!
		Bag 3	_ _												:		
254	210-215	Hole 10A, Core 5,	7	06 /	5.4	-44	0 957										
		Bag 1															
255	077 517	Hole 10A, Core 6,	6	38	9	46	96 0										
		Bag 1															
256	524-022	Hole 10A, Core 7,	7	11 0	7 6	41	0 961	-			1						
		Bag 1															
257		Hole 10A, Core 7,	8	92	5.5	56	96 0										,
		Bag 2															
258	225-230	Hole 10A, Core 8,	6	17	9.6	.64	0 953										-
		Bag 1						_									
					_								_		_		
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1965

February 8,

;	Sun Oil Company	Sponsor Sun O1	ANALYTICAL LABORATORY REPORT
Date Submitter	840703	Project Number	FAGE COLDEN, Colorado
Project Engine	111-65	Lab Group Number	S OF

652-

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ed February 5, 1965 W. H Ree eer:

# 4°	Come		G/T	 	G/T	Spe	Specific		-		_				_			
No.	No No	Dogomation		7	war	er		r		上	-		1	-			-	
ONT	140.	Description	Est F	F.nd F	Est Fi	Fnd Est	Fnd	Est F	Fnd E	st F	Fnd Es	st Fi	Fnd Est	t Fnd	Est	Fnd	Est	Fnc
259	230-235	Hole 10A, Core 9,	5	20	8	83	0 962											
		Bag 1			···													
260	235-740	Hole 10A, Core 10,	4	41	7	96	0 962	*	_			-						
		Bag 1							_		-			 				
261	740-145	Hole 10A, Core 11,	2	89	ω	28	0 962	*					-					
		Bag 1					V		base 7	743			-					
262	745-250 Hole	Hole 10A, Core 12,	O	42	4	61	0 962	*	↓	-	-							
		Bag l								-	-		_					
263	351-052	Hole 10A, Core 13,		0.0	2	62	,											
		Bag 1	_			· -				<u> </u>				_				
264	255-260	Hole 10A, Core 14,	0.0	0	25	ω	1											
		Bag 1											-				-	
265	93-98	Hole 11, Core 3,	0	0	ю	50	;	-			50,	5/	, 6	,			,	
		Bag 1						-	-		-)	1 4	\ 				
266	501-86	Hole 11, Core 4,	0.0	0	10	8	-	-			9 6	I	2 7					
		Bag 1						_			Ź		1	_				
267		Hole 11, Core/4,	0	0	6	.71	l 1			-	-							
		Bag 2															1-	
268	11-501	Hole 11, Core 5,	0	0	10	S	:										-	'1
		Bag 1			_	-												
269	112-113	Hole 11, Core 6,/	0.0	0	7	14	1 = 1				_							
		Bag 1																
270	113-119	Hole 11, Core 7,	0	0	10	7					_					 	-	
		Bag 1		-							_						-]
				-								_					-	

* Specific gravity calquiated from average of group. upervisor

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Est Fnd 1 Est. の、子、井二・公子 Fnd 18-51-18-51 Est Nisthora 245 9 Fnd Sec Est ŝ Fnd Est 3 base Fnd Company Est * __ Sun 011 Fnd 962 0.962 962 0 962 Specific 1 1 1 1 O Q Est G/T Water 8 83 96 Sponsor. Fnd 28 61 2.62 10.8 3.50 10.5 ∞ 9.71 7.14 ~ 20 10 ~ ω 4 Est Fnd 5.50 89 0.42 41 0.0 0.0 G/To11 0 0 0.0 0.0 0.0 0 4 N 0 0 O Est ANALYTICAL LABORATORY REPORT Core 12, 13, ,Ćore 14, Core 10 Core 11, Core 9 4) Core 4, m Ŋ Core 6, Description Hole 10A, Core Core Core Core Core Hole 10A, ADI alole 10A Hole 10A Hole 10A 190-145 Hole 10A Hole 11, Hole 11, Hole 11, Hole 11, Hole 11, Hole 11, Bag 1 Bag 1 Bag 1 Bag 1 Bag 2 Bag 1 Bag 1 Bag 1 Bag Bag Samp. 235-745 いべージャん 25, 155 077-552 <u>کے</u> . . . No. 90-06 112-13 113-119 105 5/ Lab. No 260 259 262 263 261 264 265 266 268 270 267 569

February 5, 1965

Date Submitted

Project Engineer H. Re

111-65

Lab Group Numbers

VDO STOOL OF MINES RESEARCH FOUNDATION

Golden, Colorado

PAGE NO. 2

Project Number:

* Specific gravity calquiated from average of group.

pervisor

February 8, 1965

Date Reported Feb!

Lab Group Number COLORADO SCHOOL OF MINES RESEARCH FOUNDATION
PAGE NO: 3 Golden, Colorado

Project Number

Sun Oil Company

840703

111-65

Project Engineer Date Submitted

1965 February 3, W H. Ree

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652-	ANALYI	ANALYTICAL LABORATORY REF	REPORT		Sponsor	Sun	011	Company	`	•			Į		•		İ
Lab.	Samp.		G/T 011		G/T Water	Specific	tic									-	
No	No	Description	Est I	ਯੂ	t Fnd	Est	Fnd Est	Fnd	Est	Fnd E	st	Fnd E	st Fnd	H	st Fnd	Est	Fnd
271	20-611	Hole 11, Core 8,	Ĥ	Trace	9 25	0	962 *					,					
		Bag 1															
272		Hole II, Core 8,	Ţ	Trace	8 56	0	962 *				-						
		Bag 2															
273	なころ	Hole 11, Core 9,	T.	Trace	9 51	0	962 *				-		,		 		
		Bag 1															
274		Hole 11, Core 9,	7	Trace	8 54	0.0	.962 *										
		Bag 2												-	. 		
275	134-141	Hole 11, Core 10,	0	0	7.24	i	•		!					-			
		Bag 1															
276	141-147	Hole 11, Core 11,	O	0.0	9 13	_	•				· 						,
		Bag 1															
277		Hole 11, Core 11,	0	0.21	8 85	5.0	* 662				_						
		Bag 2	<u>-</u>														
278		Hole 11, Core 11,	0	22	9 25	0.0	* 365				-		-				
		Вад 3							,								
279	153-161	Hole 11, Core 12,	o	0.20	8 49	0	970 *										
		Bag l						<u></u>									
280		Hole 11, Core 12,	0	20	7 63	0	970										
		Bag 2	-							<u> </u>							
281		Hole 11, Core 12,	Ţ	Trace	8.70	0.0	970 *				ļ 		_				
		Bag 3				· -											
	_						+		1	-					_	_	

* Specific gravity galculated from average of group.

970

10

1.40

Hole II, Core JT

282

Sub, Bag 1

pervisor emarks

February 8, 1965

Fnc C. H H 12 Sonk Est Fnd 55 Fnd Est = **イベイ・サヤー**の 1ch Niobrara 710, Fnd Est 72.5 太历 Est Fnd Est Fnd Sun Oil Company Fnd Est 2967 196 0 296 Specific 971 965 696 696 0.970 996 696 996 0 0 962 0 Q 0 0 0 0 0 Est G/T Water 56 3 92 03 13 33 18 88 35 28 75 26 47 FndSponsor ø 'n 4 4 Ś 1 φ ω 9 ø Est Fnd 24 15 6 24 9.32 11.0 9.04 11.7 59 $\boldsymbol{\omega}$ Φ m 10 10 12 12 ω ō σ Est ANALYTICAL LABORATORY REPORT 2 2, m 4 m 4 4 4 4 4 Core Description Hole 12, Core Hole 12, Core Core Core Hole 12, Core Hole 12, Core Hole 12, Core Hole 12, Core Core Hole 12, Core Hole 12, Core Bag 1 of 2 Bag 1 of 2 Bag 1 of 8 Bag 2 of 8 Bag 3 of 8 Bag 4 of 8 Bag 5 of 8 Bag 1 of Bag 2 of Bag 2 of Bag 2 of Hole 12, Bag 6 of Hole 12, Hole 12, Hole 12, Samp. 13-18 -36 18-23 23.28 S N <u>ه</u> لر 463 465 651. 462 464 466 468 473 467 470 472 Lab 471 No

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January 15, 1965

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Project Engineer Date Submitted

840703 41-65

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COLORADO SCHOOL OF MINES RESEARCH FOUNDATION

Golden, Colorado

PAGE NO. 2

Project Number

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COT GRADO SCHOOL OF MINES RESEARCH FOUNDATION PAGE NO. 3 Golden, Colorado Golden, Colorado

Sun Oil Company Project Number ANALYTICAL LABORATORY REPORT

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651-

Lab Group Number

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* Specific gravity calculated from average of group. emarks.

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COLORADO SCHOOL OF MINES RESEARCH FOUNDATION

ANALYTICAL LABORATORY REPORT Golden, Colorado V'-PAGE NO. 1

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Sun Oil Company Lab Group Number Project Number Sponsor

840703 13-65

W H Ree Project Engineer. Date Submitted

January 7, 1965

651-	ANALY	ANALYTICAL LABORATORY REF	REPORT	. ,	Sponsor	S	Sun Oil	l Company	any					•		インサイン	オっと	,
,			I/9	1/3/	1	-			-				-			Tar.		
Lab.	Samp.		5I-		Water	Gravity	rity	} 									***	
ONT	ON		Est F	Fnd Est	f Fnd	Est	Fnd	Est F	Fnd E	Est F	Fnd Est		Fnd Est	t Fnd	d Est	Fnd	Est	Fnc
211	51-53	Hole 22, Core 1,	TI	Trace	7 15	0	* 856	<u>.</u>				~	500			-11		
		Bag 1 of 1		-		-			 			2		1	-] -			
212	53-56	Hole 22, Core 2,	Tr	Trace	7 52	C	850				-	< F	7 2 2 3	1535	<u></u>			
\cup		Bag 1 of 1					-			-		7 1	7 / Y	1				
213	56 59	Hole 22. Core 3.	С	90					-	-		-	401 N 001	Ž	4	-		
				3	1# 0	-		+	-	_	-	<u>-</u>	2580	<u> </u>	77			
214		1	C	00.0	7 67		- i				-	-						
		,					 		+	-		_	-	-	-			
1		70		-			+	+		-			-	-	-			
215	59-66	Hole 22, Core 4,	Tr	Trace	7 39	0	\$ 826	ا .ه.										
		Bag 1 of 1								ļ 								
216	66-74	Hole 22, Core 5,	Tr	Trace	7 23	c	* 850			-								
		Bag 1 of 2			ł		+	-	-	-	-	-	-					
217		Hole 22. Core 5) E	7.700		1		-	+	-			-	_	-			
		75000	1	270	6.6		* 856	-	+	+	-	_	<u> </u>					Ī
70		5ag 2 of 2	_				-			_	-	_						
17	74-81		Tr	Trace	6.35	0	* 826.											
		Bag l of l								_		_		-				
219	81-89	Hole 22, Core 7,	Tr	Trace	7 33	С	* 850			-	-	-	-	-	-			
		Bag 1 of 1			ſ.	1	_	-	-	-		-	-		-			
220	36-68	Hole 22, Core 8.	0.00	<u>8</u>	10 9			-	-	-		-		-	$\frac{1}{1}$			' -
		Bag 1 of 2						 -	-	-	-	_	-	-	-			
221		Hole 22. Core 8	, F	() ()				+	'	+		_	+	<u> </u>	$\frac{1}{1}$			
) of 2	1	עע	77		* 858 *	+		$\frac{1}{1}$	+	1	-		^	ı. G		5"
000		3					_	_	-							-3.	1 17	1
777	76-104	76-104 Hole 22, Core 9.	Tr	Trace	7.11	0	* 856.	-			<u>-,,,</u>							
		Bag 1 of 1	_				1	_										
			_															

* Specific grayaty calculated from avelage of group.

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Date Reported

January 8, 1965

COLORADO SCHOOL OF MINES RESEARCH FOUNDATION

PAGE NO. 2"

Lab Group Number Project Number

840703 13-65

Sun Oil Company

Date Submitted January 7, 1965 Project Engineer: W

> Sponsor ANALYTICAL LABORATORY REPORT Golden, Colorado

> > 651-

			⊼⊢	¦ ·	I '>-I-	-	O re_											
Pescription Est Fnd	Pescription Est Fnd	Fnd	- 11	st Fnd	μď	Est	t Fnd	Est	Fnd E	Est	Fnd E	Est F	Fnd E	Est F	Fnd E	st Fnd	l Est	Fnc
104 III Hole 22, Core 10, 1.92 8 15	22, Core 10, 1.92 8 15	8 1	8 1		_ν		0 958	*	V	,	100							
Bag 1 of 1	1 of																<u> </u>	
111-119 Hole 22, Core 11, 4 73 7.07	Hole 22, Core 11, 4 73	73		7.07	27		0.958	*									 	
Bag 1 of 2	of.									-								
119-13 Hole 22, Core 12, 7 54 8 67	Core 12, 7 54 8	54 8	8	[7,		0 953						-			-	-	
Bag 2 of 2	2 of									!	 							
Hole 22, Core 12, 8 23 7 60	22, Core 12, 8 23 7	23 7	7		ŏ		0 959											
Bag 1 of 3	1																	
Hole 22, Core 12, 8 25 6 86	Core 12, 8 25 6	25 6	9	1	9	i	0.963					-	-					,
Bag 2 of 3													-				-	
Hole 22, Core 12, 7 25 5.74	Core 12, 7 25	25		5.74	'4		b 957		 	<u> </u>				-	-	-		
Bag 3 of 3												 						
126-134 Hole 22, Core 13 4.21 9 12	22, Core 13 4.21 9	.21	6		-2		b 958	*					-	-		ļ - -	_	
Bag 1 of 2	1 of 2									_			-				-	
Hole 22, Core 13, 6 48 6.75	22, Core 13, 6 48 6	48 6	9	6.75	Ñ		0.958	*		 	_		_			-		
Bag 2 of 2	2 of				\neg							_	-	-	-			
134-141 Hole 22, Core 14, 7 05 8 52	22, Core 14, 7 05 8	05 8	- 80	- 1	-2		0 959						-	-			-	
Bag 1 of 2	2				-								-	-				
Hole 22, Core 14, 6 38 5.29	22, Core 14, 6 38	38		5.29	6		D.961	*						<u> </u>		 		
Bag 2 of 2	2 of					i					 	_			-		-	
141-149 Hole 22, Core 15, 6.89 5.77	22, Core 15, 6.89			5.77	7		196 0	*		<u> </u>	_	-	-	-	-	_	_	
Bag 1 of 2	1 of							_		-		<u> </u> 	-	-			-	
Hole 22, Core 15, 6 00 7 58	22, Core 15, 6 00 7	00	2	1	80		0.961	*	<u> </u>		-	<u> </u>			-			
Bag 2 of 2	2 of																	
												_			-	-		

* Specific grauty calculated from average of group.

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January 8, 1965

COLORADO SCROOL OF MINES RESEARCH FOUNDATION

PAGE NO 3

Lab Group Number

13-65

840703 Project Number

January 7, 1965 H Red 3 Project Engineer Date Submitted

Sun Oil Company Sponsor ANALYTICAL LABORATORY REPORT 17/01 651-

Lab.	Samp.		$^{\mathrm{G/T}}_{\mathrm{O11}}$	G/T Water		Specific Gravity	1c tv			,	 						
No	No	Description	Est Fnd			Est F	Fnd Est	Fnd	Est	Fnd	Est	Fnd F	Est F	Fnd Fs+	T That	ь С	1 1 1 1 1
235	149-151	149-15t Hole 22, Core 16,	5 15		8 66	6 0	* 196				-	- 		1	-		7.11
		Bag 1 of 1									-			-			
236	151-14	-164 Hole 22, Core 17,	5 12		6 95	6 0	* 196					-	-				
		Bag 1 of 3												-			
237		Hole 22, Core 17,	6.56		6 59	60	* 196							-			
		Bag 2 of 3								ļ				-			
238		Hole 22, Core 17,	5.82		6 46	6	961 *						-	-			
		Bag 3 of 3								<u> </u>		-					
239	164 171	171 Hole 22, Core 18,	6 14		7 85	6	* 196							-	-		
į		Bag 1 of 1									-		<u> </u>				
240	171-179 Hole	Hole 22, Core 19,	7 87		5 75	6.0	* 196				-			-			
		Bag 1 of 3			1				-			-		$\frac{1}{1}$			
241		, 22,	7.79		5.99	0	54			-				-			
		Ban 2 of 3				1			+	+	+		+	-			
- -		1	6 44		5		1 100		-		-	+	-	-			
		, ,				٠.			+	\dagger	-	+	+	-			
		- 1			+	1					_			-			
243	179-186	179-18t Hole 22, Core 20,	7 69		40	6 0	61 *										
		Bag 1 of 3										<u> </u>					
244		Hole 22, Core 20,	10 7	9	54	9 0	965						<u> </u>	-			
		Bag 2 of 3									-		-	\vdash			
245		Hole 22, Core 20,	8.98	4	43	0.9	57		_	-	-	-	_	-		-	
		Bag 3 of 3	··								-	-	-	-			,
246	186-194	184-194 Hole 22, Core 21,	7 22	9	93	96 0	*			-	_		-	-		┪	
		·			1	1	,		 		-	-	+	+			
		5			+				\dashv	_	\dashv	\dashv	_				,
						_			\dashv			\dashv					;
7	7		,				5						;				

* Specific gravity calculated from average of group. marks

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Date Reported

January 11, 1965

COLORADO SCHOOL OF MINES RESEARCH FOUNDATION

Golden, Colorado

PAGE NO 4

Lab Group Number

Project Number

840703 13-65

January 7, 1965 Project Engineer. W Date Submitted

Sun O11 Company Sponsor ANALYTICAL LABORATORY REPORT 651-

Lab.	Samp.		G/T 011	1	G/T Water	<u> </u>	Specific		-		-		-		-			
No	No	Description	Est	ਯੂ	Est]		Est Fnd	1 Est	Fnd	st	Fnd	St	Fnd E	st Fnd	T T	r L	† 0 [3	ja Li
247		Hole 22, Core 21,		7 84	9	44		╢_			1 -	; -	મ		1	-	2 2 2)II 4
		Bag 2 of 2									-		-					
248	194-761	Hole 22, Core 22,		13 0	8	39	996 0			-	-	-	-		-			
-		Bag 1 of 3									-		-	-				
249		Hole 22, Core 22,		13 5	9	35	0 962		-		-							
		Bag 2 of 3									-	_	-	-				
250		Hole 22, Core 22,		6.16	4	31	996 0	1.0			-	<u> </u> 	-					
		Bag 3 of 3		·	-					_	-	-		<u> </u>	-			'
251	201-209	Hole 22, Core 23,		5 19	4	75	0 952			-			-					
		Bag 1 of 3				· · · ·								_	-			
252		Hole 22, Core 23,		4 10	8	12	0 961	*	-			-	-					
		Bag 2 of 3								-	-	 			-			
253		Hole 22, Core 23,		6.79	4	38	0 967				-	-		-	-			
		Bag 3 of 3											-		-		-	
- ,	712-602	Hole 22, Core 24,		12 5	6	46	0.969						-	-			-	
		Bag l of 3							-		-				-		-	
255		Hole 22, Core 24,		7.22	5	28	0 963	_			-	-	-	-	-		-	
		Bag 2 of 3									-			_				
256		Hole 22, Core 24,		8 82	9	44	0.973	- ==				_	-					· ·
		Bag 3 of 3								_			-	<u> </u>	-		-	
257	216-114	Hole 22, Core 25,		3 86	2	95	0 970	*	-		_	-	-	-	-			
		Bag 1 of 2									-	-	-	-	-		+	
258		Hole 22, Core 25,		6 78	4	41	0 975				-	-	-	-	-	ų i	-	h e
		Bag 2 of 2								_	-	-	-	_	 		+	$\overline{\parallel}$
										_	-		-	-	_		-	
												$\frac{1}{1}$			_		_	

* Specific gray, ty calculated from average of group. emarks

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January 11, 1965

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Lab Group Number

Project Number

840703 13-65

Sun Oil Company

Sponsor

ANALYTICAL LABORATORY REPORT Golden, Colorado

.651-

Project Engineer Date Submitted

January 7, 1965 W H Reg

Lab.	Samp.		G/T ₀₁₁	G/T	G/T Water	Specific		_					-			
No	No	Description	Est Fnd		I	Est Fnd	Est Fnd	Est	Fnd	Est	Fnd	Est F	Fnd Est	+ Fnd	F S	H _D ,
259	154-721	Hole 22, Core 26,	8 06	5	5 18	996 0				╨	- -		Ч			111.7
		Bag 1 of 1														
260	231-23	231-239 Hole 22, Core 27,	6 24	-41	2 81	0.973				-						
		B3g 1 of 4										-				
.261		Hole 22, Core 27,	6.51	1	2 81	0.970	*							-		
		Bag 2 of 4									-	-	<u> </u>	-		
262		Hole 22, Core 27,	6 41		3 01	0.975	 				-			-		
		Bag 3 of 4									-			-		
263		Hole 22, Core 27,	7 23		3.52	0 975					-					
		Bag 4 of 4									-		<u> </u> -			
264	239-246	Hole 22, Core 28,	5 06		4.45	0 970	*			\vdash	 -	-				
		Bag l of l								-		-	-			
265	241-254	246-254 Hole 22, Core 29,	12 0		5 69	0 970				-	-	<u> </u> 	<u> </u>			
		Bag 1 of 3														
- 2		Hole 22, Core 29,	7 72		5.49	0.972										
		Bag 2 of 3								_	-					
267		Hole 22, Core 29,	7.53		6.41	0.959				-	-	-				
		Bag 3 of 3									-	_		-		
268	254-W1	Hole 22, Core 30,	4.45		6.62	0 970					-	_	<u> </u>			
		Bag 1 of 1	_				4	9 5 4	-	-	\vdash	_	-			
269	671-177	Hole 22, Core 31,	0.68		5 07	0 970	*	1		_	-	-	-			· ,
		Bag l of 2							-	-		-	-			-
270		Hole 22, Core 31,	0.89		6 32	0.970	*		-							ļ
		Bag 2 of 2									-		-			-
			_								-					

* Specific gravity galculated from average of group.

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January 8, 1965

E COL	ADO É H	COL PADO ELOOL OF MINES RESEARCH FOUNDATION	UNDATION	 Lab	Group	Lab Group Number	111-65	ν.		Projec	Project Engineers		W. H. P	ves		• 1
PAGE NO.	o. 5	Golden, Colorado		Pro	Project Nun	umber.	840703		1.	Date S	Date Submitted	:	February	5, 1965	596	
	ANALYT	ANALYTICAL LABORATORY REP	REPORT	Spo	Sponsor .	Sun Oil	~	:	. !				して井井ン		Sask	•
Lab.	Samp.		G/T _{O11}	G/T	G/T _{Water} S	Sgesufts							-			1
No.	No	Description	Est Fnd			Est Fnd	Est Fnd	id Est	Fnd	Est	Fnd Est	Fnd	Est	Fnd	Est	Fn
×295	94-101	Hole 19A, Core 11,	1.23		9 78	0 956	*							₩		
		Bag 1										<u> </u>	-			
296		Hole 19A, Core 11,	0 0		12 5	-				-	-	-	 			
		Bag 2					¥	Ton - 8.					ļ	,		
297	81-85	Hole 27, Core 7,	11 1		7 35	0.962				500	15-46-	7/2/1-84	-			
		Bag 2						-		<u> </u>	^		-			
298	76-68	Hole 27, Core 8,	9.52	i	6 20	0.958				7			-			1
		Bag 1										6	-			
299	96 134	Hole 27, Core 9,	9.12		6.71	0.957					1000	_				,
		Bag 1				•					-	0				
300		Hole 27, Core 9,	10.7		6.37	0.956							_		-	
		Bag 2			-								-			
301	104-111	Hole 27, Core 10,	7.78		7 06	0.956	*					-			-	1
		Bag 1								-		<u> </u>				
302	115 119	Hole 27, Core 12,	8 48		7.30	0.953										
	•	Bag 1										_				
303	119-12	Hole 27, Core 13,	7 32		9.75	0.957										
		Bag 1											-			
304	126-1,0	Hole 27, Core 14,	69 9		13 9	0.952										
		Bag 1											_		-	
305		Hole 27, Core 14,	5.13		10.8	0.943									,	
		Bag 2									-	-	ļ		-	
306	134 -141	Hole 27, Core 15,	7 28		6.92	0.950		-		-		-			-	
		Bag 1			-											
											·					ī

emarks * Specific gravity calculated from average of group.

V- VXX

Date Reported February 8, 1965

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				Fnd			<u> </u>																						
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	5, 1965			Fnd																									
H. R	February			Est																									
ţ	Feb			Fnd																									
jineera	itted			Est																									
Project Engineers	Date Submitted			Fnd																									
Proje	Date	•	 	Est																									
	:	•		Fnd																									
		•		Est																		173'							
111-65	840703	Company		Fnd					j	!				_								base							
7 3				Est																	*	\downarrow	*		*		*		
nber.		Sun Oıl	Specific Gravity	Fnd	0.959		996 0		0.960		0 957		0.963		0.972		0 966		0.967		0 967		0 967		0 967		0 967		
P. N.	umber	S	Spec Gra	Est																									
Lab Group Number	Project Number	Sponsor	Water	Fnd	5 36		3.74	'	3.28		3.51		4 36		5 61		9 43		8 77		9 15		9 22		8 25		7 85	i	
Lak	Pro	Spo	G/T	Est																									_
NOLL			011	\mathbf{Fnd}	7.96		6 02		7 74		9 54		9.56		11.8		8 10		7 64		4 60	- '	2.21		2 24		0 45		
OUNDA		REPORT	5	Est																		-							
RCH F	0			_	15,		16,		16,		16,		17,		18,		19,		19,		20,		20,		20.		21,		
RESEA	Golden, Colorado	RATOR		Description	Core		Core		Core		Core		Core		Core		Core		Core		Core		Core		Core		Core		
MINES	len, C	LABO		Descr	27.	2	27,	-	27,	2	27,	m	> 27,	г	27,	-	27,	1	27,	2	27,	rd	27,	- (4)	Hole 27,	9	27,	1	
HOOL OF MINES RESEARCH FOUNDATION	Golo	ICAL			Hole	Вад		Вад	Hole	Bag	Hole	Bag	Hole	Bag	Hole	Bag 1	Hole	Вад	Hole	Bag	Hole	Bag	Hole	Bag	Hole	Bag	Hole	Bag	
	9 .	ANALYTICAL LABORATORY	Samp.	No			141-149						149-156		156-164		14-171				611-111					;	731-661		
COLORADO	PAGE NO.	652-	Lab.	No	307	-	308		309		310		311		312	_	313		314		315		316		317		318 /		

group * Specific gravity qalculated from average of emarks

pervisor

February 8, 1965 Date Reported <u>\</u>| Fnd February 5, 1965 Est Fnd Est 3 . Fnd Est Fnd Project Engineer: Date Submitted Fnd Est Est Est Fnd Est Fnd Est Fnd Est Fnd 111-65 840703 Sun Oil Company ***** 296 0 0.967 Specific Lab Group Numbers * Specifig gravity) calculated from average of group. Project Numbers G/T Water 11 0 Sponsor 10 0.62 4 19 COLORADO SETODO OF MINES RESEARCH FOUNDATION [G/T] ANALYTICAL LABORATORY REPORT Hole 27, 179-186, Hole 28, Core 28, Gunk from Bartan Golden, Colorado Description 269-277 Samp. No. PAGE NO. 7 652-Lab. No 320 marka 319

February 8, 1965

Date Reported

perdior

띰 #28 NEC 21-47-11 W2-4 Sank Est Fnd Fnd Est 1350 Nieberg Top Base 7 14 Elevation Fnd Est <u>۵</u> ۲ Est FndEst Fnd Sun Oil Company Est | Fnd | Est | * * * 0.964 0 964 0.964 0 964 196 096.0 0.964 0.964 Specific 0.964 0.954 0.968 0 G/r Water Est | Fnd | Est | Fnd 7 16 81 55 88 9.75 72 8.87 59 13 05 35 Sponsor 6 φ ω ω S ω 'n Trace 0 63 None 0 52 62 93 8.23 75 98 34 N ന [G/T 011 10 11 ^ Н **~** ø S ANALYTICAL LABORATORY REPORT Core 17, Hole 28, Core 16, Core 17, Core 19, Core 16, Core 18, Core 19, Core 20, Hole 28, Core 20, Core 21, Core 21, Hole 28, Core 19 Description 187-194 Hole 28, 194-201 Hole 28, Hole 28, 28, Hole 28, Hole 28, Hole 28, Hole 28 Hole 28, Bag 2 Bag 2 Bag 1 Bag 2 Hole ; Bag 2 Bag Bag Bag Bag Bag Bag 19.87 Samp. No 202-204 209-217 717-224 652-Lab 807 S 799 797 798 800 801 802 803 805 806 804 808

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H 3

Project Engineer.

155-65 840703

Lab Group Number

COLCRADO JCHOOL OF MINES RESEARCH FOUNDATION

Golden, Colorado

PAGE NO. 1

Project Number

Date Submitted February 17, 1965

* Specific gravity palculated from average of group. emarks

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February 18, 1965

COLORADO ACHOOL OF MINES RESEARCH FOUNDATION Golden, Colorado PAGE NO. 2

ANALYTICAL LABORATORY REPORT

652-

Lab Group Number

Project Number

Sun O11 Company

Sponsor

155-65

840703

Date Submitted February 17, 1965 Project Engineer W H Rg

Lab	Samp.	1	$\frac{G/T}{0_11}$	[G/T Water	Specific	fic				 -			-		-	
No	No	Description	Est F	q	t Fnd	Est	Fnd E	st Fnd	Est	Fnd	Est	Fnd	Est 1	Fnd	St	Fnd	St Fry
809	227422	Hole 28, Core 22,	8,	8.58	6 39	0	296 (╫-		\parallel	╢─	-
		Bag 1					_				ļ. <u> </u>		-			-	-
810		Hole 28, Core 22,	8	38	6 8 9	0	954										+
		Bag 2											-	-	-		
811	232-239	Hole 28, Core 23,	7.	7.22	6.65	0	952				-				-		
		Bag 1													-		_
812		Hole 28, Core 23,	- &	89	6 91	0	955										_
		B3g 2					1					† 		-	-		-
813		Hole 28, Core 23,	8	67	6 93	0	954						-				-
ļ		Bag 3			1						-		-		-		
814 2	239-242	Hole 28, Core 24,	7	94	8 10	_0	.952						-		-	-	-
		Bag 1			1		И				-		-		-	-	+
815		Hole 28, Core 24,	7	86	8.28	С	070				+		-		-		_
							• (-	-	-	-	
816		Hole 28, Core 24,	7	66	8 71	0	.953						-				
		Bag 3													-		-
817		Hole 28, Core 24,	6	22	7 32	0	.952				-	 -	-			-	
		Bag 4									-				-	-	
818	247-254	Hole 28, Core 25,	10	10.2	8.75	0	1961				1	-					
		Bag 1									 -			-	 	'	
819		Hole 28, Core 25,	8	8.02	9.12	0	959				-		-	-	-	+	+
		Bag 2		· • • • • • • • • • • • • • • • • • • •								-	-	-	-	-	
820		Hole 28, Core 25,	æ	8,35	7 59	0	.961				-		+	_	-	-	
		Bag 3	-									 -	-		+-		
	_		_	_	_	_			+	+	1	1		_	-	_	,

emarks

Date Reported

February 18, 1965

COLORADO SCHOOL OF MINES RESEARCH FOUNDATION

Golden, Colorado

PAGE NO. 3

652-

Lab Group Number

Project Number

Sun Oil Company

155-65 840703

Date Submitted February 17, 1965 Project Engineer: W H

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REPORT	
LABORATORY	
ANALYTICAL	

Sponsor

Lab.	Samp.		G/T 011		G/I Water		Specific					 							
No	ON	Description	Est	O,	Est		Est Fnd	Est	Fnd	Est	Fnd	Est	Fnd	Est]	Fnd	Est H	Fnd F	+	Fnc
821	154.2 62	Hole 28, Core 26,		7.17		7.19	0 964	*							#-	-	╫	-	
		Bag 1														-	-	+	·
822		Hole 28, Core 26,		5.90		10 1	0.964	*										-	12
		Bag 2										-						-	
823		Hole 28, Core 26,		4 79		10.8	0.964	*			-	-					-		
		Bag 3								-				-	-	-		-	
824		Hole 28, Core 26,		4.99		9 64	0.964	*					-						
										-									
825		Hole 28, Core 26,		2.69		13.0	0.964	*		-		-				-			
-		Bag 5			·.							-					-		
826 2	62-29	Hole 28, Core 27,		Trace		12.5	0.964	*			 				-	-		-	
		Bag 1												-			-		
827		Hole 28, Core 27,		Trace		10 8	0 964	*	-				-	-	<u> </u>	-	+	_	
		Bag 2								-	-	-		-	-	-	-	-	
828		Hole 28, Core 27,		2.87	 	4.94	0.964	*								-	-	-	
		Bag 3										-		-		-		-	
829 1	269-222	Hole 28, Core 28,		11 1		6 04	0 978			-					-	-		-	
		Bag 1							 	-	-				-		-	-	
830		Hole 28, Core 28,		11.7		7 59	0.974							-					
		Bag 2							-			-		-		-		-	
831	197-284	Hole 28, Core 29,		5 57		3.38	0.975		-				 	-	-		-	<u> </u>	,
		Bag 1 '								 			-	-	-	 	+	-	
(-	+	1	+	+	-	_					

.marks * Specific gravity) calculated from average of group.

0.977

3.84

60 9

Hole 28, Core 29,

832

Bag

February 18, 1965 Date Reported

COLCRAPO SCHOOL OF MINES RESEARCH FOUNDATION PAGE NO. 4

Lab Group Number

155-65 840703

Date Submitted February 17, 1965 Project Engineer W. H

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ANALYTICAL LABORATORY REPORT Golden, Colorado

,652-

Sun Oil Company Project Number Sponsor

Lab	Samp.		G/T_{O11}		G/T Water	er Spe	Specific				 							
No	No	Description	Est	īđ	Est F	Fnd Est	-	Est	Fnd Est	Fnd	Est	Fnd	Est	FndE	+	ਜੂ ਜੂਨ ਜ	Д +3 -	j j
833	284-292	Hole 28, Core 30,		7.78	4	16	0 974	 	-11	-}					1		-∦-	# III
		İ			-										-	-		
834		Hole 28, Core 30,		8 79	'n	.39	0 974						-					
		Bag 2		_						-								
835		Hole 28, Core 30,		10 3	5	68	0 968										-	
		Bag 3													-		+	
836		Hole 28, Core 30,		9.88	5	33	0.970		}				-					
		Bag 4											-	 	-			
837 1	292-299	Hole 28, Core 31,		10.8	6.	6.58	996.0								-		+	
		Bag 1			·									-	-		-	
838		Hole 28, Core 31,		10.5	9	95	696 0						_			-	_	
		Bag 2														+		
839	299-307	Hole 28, Core 32,		9.01	7.80	80	0.972						-	-	-	-	-	-
		Bag 1		· · · · · · · · · · · · · · · · · · ·									-	-	-	-	+	
840		Hole 28, Core 32,		7.25	8	74	0 064	*										
					· I		1							-			-	,
841		Hole 28, Core 32,		6 23	6	35	996 0						 -		-			Ę
		Bag 3														+	-	
842		Hole 28, Core 32,	-	7.12	10	9	296 0						-		-		-	
		Bag 4			_		f						-	<u> </u>	-	-	<u> </u>	,
843 36	307-314	Hole 28, Core 33,		5.18	11	3	0.964	*										Ι.
		Bag 1												-	-		1	14
844		Hole 28, Core 33.		3 49	10.6	v	, 664	*				-		-	-	\dashv	+	
				•		2			-		-		+		-	+	7	
								-			1					-	1	1
								-			7	_					-	*****

* Specific grayity salculated from average of group. emarke

February 18, 1965 Date Reported

COLORADO SCHOOL OF MINES RESEARCH FOUNDATION Golden, Colorado PAGE NO. 5

ANALYTICAL LABORATORY REPORT

652-

Date Submitted February 17, 1965 W. H Project Engineer Sun Oil Company 155-65 840703 Lab Group Number Project Number Sponsor

The transmitted for the same of

Lab	Samp.		G/T	G/T 011	G/T Water	1	Specific	110											'	
No	No	Description	Est	Fn	Est	,	Est		Est	Fnd	F.S.+	표	1 to		- ├		-			
845		Hole 28, Core 33,		2.68			11 -	- -	-₩		-∦ - -	_11_	i i	r na	ESt	F.nd	Est	Fnd	Est	Fn
		Bag 3				1	-		-		-								-	
							-				-		-							
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							-			-			+						1	
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*	,					-	-	\dashv	-	\dashv	\dashv	-	\dashv							\ ₋
marke	Specifi	Specific gravity ralculated from	d fro	ave m	average of		droin										,			

palculated from average of group.

pervisor

Date Reported

February 18, 1965

208-64 Lab Group Number

Sac 8-49-7

840703 Project Number

July 24, 1964

Project Engineer W. H. Reeve

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GOLDEN, COLORADO

AN	VALYTIC	SAL LAB	ANALYTICAL LABORATORY REPORT	PORT		Sponsor		Sun O	Oil Company	pany		. Ĝ	Date Submitted	uffed	July	24,	1964	Outers	٥
- 1750				ļ.								1	1000	- page				Ř	Samoles
Lab	Samp	, <u>.</u>		G/T	011	G/T _V	Water	Specific Gravity	fic nty			,							
No	No		Description	Est	Fnd	Est	-	Est	Fnd E	Est Fnd	d Est	Fnd	Est	Fnd	Est F	Fnd E	Est Fnd	Est	Fn
1121	19-63	Bag #1	Core #10		3,22		7.85	Ó	* 026.0				7		223				
1122		± 2	2 " 10		4.05		7.87	0	* 026*0				7,5	Niebrara Top	700	83.4	44		
1123		3	3 " 10		6.26		7.28	ŏ	* 026.0						3494	143			
11,		= 4	10 " 10		3.44		8,38	ŏ	* 026°0				13	vation	900		12.90		
1125		r.	3 " 10		10,3		5.42	Ŏ	* 026.0										
1126		9	5 " 10		9.95		9.24	ŏ	* 026°0	•	ŀ	7	8	- T					
1127	83-91	Bag #1	Core #11		7.05		7.73	ď	* 026*0	L _				1					
1128		2	2 " 11		7.26		7.03	_ <u>o</u>	* 026.0		<u> </u>						 		
1129		2	3 " 11		7,38		8,78	Ŏ	0.950										
1130		4	1 " 11		10.8		8.20	O	0.970										
1131		# 5	5 " 11		10.9		6.24	Ŏ	* 026.0							-			
1132		2	" 11		6.46		21.2	o	* 026.0					-					
1133	56-16	Bag#1	Core #12		11.2		8.65	0	* 076.0					-	-	<u> `</u>			
1134		= 2	п 12		13.8		5,96	ಁ	0,979										
(17)		E E	12		10.9		8,53	0	6.979										
1136		n 4	" 12		8,89		8,22	o	0.970							-			
1137	95-103	Bag #1	Core #13		9.33		8.61	o	0.970										
1138		5	н 13		6.25		11.4	0	* 026.0										
1139		1	n 13		13.5		8,12	ဝ	0,968										
1140		r 4	, n 13		13.4		9.11	o	0,955							-			
1141		: S	13		13.9		5.77	o	0.956										
1142		5	13		13.5		7.96	ć	0.963										
								-	1	+	+			+	+	+			

* Specific gravity of 0.970 determined from composite of samples in group.

0.938

0.963

6.39 4.62 4.46

> 14 14

> > m

1145

Remarks

0.950

10.8 14.1

12.2

Core #14

#

Bag

103-113

1143

1144

upervisor

Date Reported

July 24, 1964

PAGE NO. 2

208-64 Lab Group Number

840703 Project Number

Project Engineer

W. H. Reeves

Afficialise and section of the secti

July 24, 1964 Date Submitted ... Sun O1 Company Sponsor ANALYTICAL LABORATORY REPORT

Lab	Samp		G/T	011	G/T Wg	G/T Water	Speci	Specific Gravity											1	
No	No	Description	Est	Fn	Est	Fnd	Est	Fnd E	Est F	Fnd E	Est 1	Fnd 1	Est	Fnd	Est	Fnd	Est	Fnd	Est	Fnc
1146		Bag #4 Core #14		17.2		8.61	J	696.0	•	!			-							
1147		" S " 14		12.0		6.77	<u> </u>	526.0												
1148		" 6 " 14		10.8		6.55	J	0.967							-					
11/		n 7 n 14		14.0		6,36		0.943												
1150		n 8 n 14		11.2		7,12	J	0.954												
1151	-	" 9 " 14		10.5		5.68	5	0.954			-									
1152		" 10 " 14		11.1		5,63	3	0.933												,
1153	113-123	Bag #1 Core #15		9.30		6.07	J	0.955												
1154		n 2 n 15																		
		Pan I		10.5		8,36	<u> </u>	0.988												
1155		n 2 n 15																		
		Pan II		9.23	-	6.72	<u> </u>	* 026.0	_			-			-				-	
1156		# 3 # 15							-				-		-				-	
		Pan I		7.74	•	10,4)	* 026.0									-			
11)		n 3 n 15																		

17		m =	#	15					
)			Pa	Pan II	0.0	0°0	0.0		
1158		n 4	4 n	15	9.52	7.23	* 026°0		!
1159		ت د	E	15	11.0	8.60	0.930		
1160		9	\$	15	8.41	11.4	* 0260		
1161	123-133	123-/33 Bag #1 Core #16	Cor	e #16	9.62	8,37	0.958		
1162	i	E 0	5	. 9 1	9.87	7.76	0.959		
1163		ت 3	=	16	91.6	7.05	0.951		,
1164		4	. 1	16	9.38	7.38	* 026.0	*	,
1165		n 5	u S	16	9.32	8.21	* 026.0		,
1166		9	E C	16	6.34	09*6	* 0260		1

*Specific gravity of 0.970 determined from composite of samples in group.

July 24, 1964

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PAGE NO.

212-64 Lab Group Number

840703 Project Number __

Project Engineer _

W. H. Reeves

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ANALYTICAL LABORATORY REPORT

Sun O11 Company Sponsor

Date Submitted

July 27, 1964

Lab	Samo		,		G/T	[5	G/T	Water	Specific	£1,0										
No	No	Ď	Description	tion	Est	71	Est		Est	Fnd Est	t Fnd	Est	Fnd	Est	Fnd	Est F	Fnd Est	+ Fnd	년 *	고 고
1222		Bag #	#7 Core	re #16		11.7		11.5	0	0,981						₩		-∦		
1223		=	80	16		7.24		13.0	_0	286*0										
1224	133-143	Bag #	#1 Core	re #17		7.54		9.57	0	0.953										
. T		E	2	17		2.23		14.0	0	* 0.970										
1226		=	۳ ع	17		9.26		10,0	0	896*0										
1227		E	#	17		10,1		11,4	0	0.975										
1228		=	E W	17		11,8		11,0	0	996°0										
1229		=	£ 9	17		12,2	. ,	11.6	_0	0.953										
1230		=	7 "	17	-	10.0		12,1	0	996°0							ļ			
1231	143-153	Bag #	#1 Core	re #18		9.60		9,31	0	* 026.0							_			
1232		=	E (2)	18		8.61	- 1	10,1	0	696°0		-								
1233		=	E E	18		12.2	-	7.59	0	0.959						_				
1234		=	4	18		10,2		7.58	0	0,965										
1235		E	5	18		9,50		8.47	0	* 026*0										
9		E	9	18		14.1		7.64	0	0,981	1					_				
1237		=	7 "	18		13,8		6.77	0	0.981										
1238		Ε	E Ø	18		11.3		8,45	0	0.965										
1239		=	5	18		13,4		00°6	0	0.982										
1240	153-163	Bag #	#1 Core	ce #19		10.9		9.42	0	0.970								- 48		
1241		E	S E	19		9.53		12,1	0	0.978										
1242		=	£	19		10.5		11.0	0	0.976		151	9							-
1243		=	4 "	19		14.9	#-T	11,1	0	0.992					ļ					
1244		=	5 #	19		21.0	×	10,8	o'	0.974				-	-					
1245		=	1 9	19		22.7	ω	8.92	Ó	0.975						 				
1246		E	7 "	19		20.7 ⊀		9.80	Ó	996.0										

* Specific gravity of 0.970 determined from composite of samples in group.

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212-64 Lab Group Number_

Project Engineer

W. H. Reeves

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840703 Project Number

Sun O11 Company

Sponsor

Date Submitted _

July 27, 1964

Lab.	Samp		G/T	011	G/T Water	ater	Speci	Specific											
No	No	Description	Est	Fnd	Est		Est	Fnd	Est F	FndE	Est 1	Fnd	Est	Fnd	Est]	Fnd E	Est Fnd	Est	Fac
1247		Bag #8 Core #19		9.95		9.54	0	0.959		 -	-				₩	11	-∦		
1248	-	н 9 н 19		22.7		12,2	0	696°0			-								
1249	163-173	Bag #1 Core #20		14.5		14,2	0	626°0								<u> </u>			
1		# 2 n 20	-	16.3		9.44	_0	0.970	*										
1251		11 3 11 20	×	21,2		13,2	0	0.975										ļ	
1252		n 4 n 20	~	24.1		11,1	0	0.970	*										
1253		n 5 n 20		18.6		11.5	0	0.972				-							
1254		n 6 n 20		18,9		13,4	0	0.968			-	-		-					
1255		n 7 n 20		17.7		13.9	0	0,993									-		
1256		# 8 # 20	×	22.1		12.9	0	096.0		1	113	0							
1257		и 9 и 20	,	6.01		12.8	0	0.970	*										
1258		и 10 и 20		5.68		5,72	_0	0.945								 			
1259		" 11 " 20		9.14		6.29	0	0.970	*										
1260	173-783	Bag #1 Core #21		12.6		5.77	0	0.946											
		n 2 n 21		6,53		13.9	0	0.970	•		·	-							
1262		п 3 н 21		10.0		6.31	0	0.964	<u>-</u>										
1263		n 4 n 21		12.1		7.86	0	0.972					-						
1264	`	# 5 # 21																	
		Pan I		Trace		7.61	0	956	*										
1265		11 5 11 21																-	
		Pan II		11,4		6.51	0	0.953	•			1 A D							-
1266		" 6 " 21		15.0		6.55	0	0.949											
1267		" 7 " 21		8.08		9.95	0	0.935						-					
1268		n 8 n 21		9.02		8.29	0	0.955				-							,
																			1
													<u> </u>						

* Specific gravity of 0.970 and 0.956 determined from composite of samples in group.

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Project Number _

Project Engineer W. H. Reeves

840703

July 27, 1964

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Date Submitted _ Sun Oil Company Sponsor 647.

Lab	Samp.	ì	G/T	0,1	G/T Water		Specific	ific			,								
No	No	Description	Est	Fnd	Est	 	Est	Fnd E	Est F	Fnd E	Est F	Fnd	Est	Fnd	Est F	Fnd E	st Fnd	d Est	Fnc
1269		Bag #9 Core #21							-	-	<u> </u>		-		-₩	-		-}	₩
		Pan I		11.7		5.56	_0	0.948									-		
1270		n 9 n 21											-		-			1	-
		Pan II		12,2		7.92	0	0,939			-		-						
1271	183-193	Bag #1 Core #22		8,37	-	12,0	0	0.955		<u> </u>								-	
1272		и 2 и 22		7.40	•~	13.0	0	2962	-	1		-					-		
1273		n 3 tt 22		7°06	5	9.72	_0	196.0			-							-	
1274		n 4 tt 22		7.63		10.1	0	0.973										-	
1275		п 5 н 22		6,70	5	9,43	0	* 956°O					-	-		-			
1276		п 6 п 22		7.93	w	8,62	0	* 956.0											
1277		tt 7 m 22		5.45	5	9,47	0	0,956					-					-	
1278		п 8 п 22		3.68		10.2	0	* 956*0		B	7	٦,٧	b c a						
1279	192 203	Bag #1 Core #23		2,74	5	9,44	0	* 956*0			ĺ			_					
1280		п 2 п 23		3,37	5	9.31	0	* 956.0							-				-
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ı									-		-	-	-	1	-		-	-	

* Specific gravity of 0,956 determined from composite of samples in group,

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July 29, 1964

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Project Engineer _

W. H. Reev

July 29, 1964

Date Submitted

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Fn Est Fnd Est Fnd Fnd Est Fnd Est Est Fnd Est * * * * * * * * * * * * * * * Fnd Specific Gravity 0.970 £ ŧ Ξ = Ξ ŧ Ξ E E E F E E = = Est 7.66 8,80 Fnd8.56 7,62 8,48 8,48 68°6 9.77 9,03 4.55 8.47 99.6 10.4 9°07 8.39 18°6 Water Est C/T Fnd 2,30 3,14 2.44 3.76 0.28 2,32 0,32 0.69 0.29 2,11 1,01 0,59 0,29 2,81 Oi.1 0.0 0,0 Est S 24 23 23 #24 42 24 42 #23 23 23 23 23 2 2 2 24 24 II II H Description Pan Pan Pan Core Core Pan = Ξ Ξ = = = = z E E. = £ E ŧ £ # ω 9 m m ø ω Ŋ 9 . #1 N 4 4 M 1 493 263 Bag Bag = ŧ E E = E E z Samp. 2 03-213 1358 1360 1368 1356 23 1359 1363 1364 1365 1366 1370 1354 1355 1361 1362 1367 1369 Lab. Š

* Specific gravity of 0.970 determined from composite of samples in group.

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Sun Oal Company Sponsor ...

July 29, 1964 Date Submitted

Project Engineer W. H. Reevel

Lab	Samp.	1	G/T	0.1	G/T Water	ter	Specific	fic		_									
	No	Description	Est	Fnd	Est	Fnd]	Est]	Fnd E	st	Fnd Es	st Fnd	nd Est		Fnd E	st	Fnd E	st Fnd	nd Est	st Fnd
1373		Bag #10 Core #24		0.0		8.80	0	* 026*					-		-			-}	₩
1374	2/3-22	Bag #1 Core #25		1.81	-	9,42		*											
1375		n 2 n 25		1,73		8.98		#				-	-					-	<u> </u>
100		n 3 n 25		0.93		8.42		=											
1377		" 4 " 25													-				
		Pan I		0.95		92°9		*											
1378		" 4 " 25				ļ								1					-
		Pan II		0.97		7.39		*						-					-
1379		n 5 n 25		0,53		8,43		*										-	-
1380		n 6 n 25		0.29		8,58		*					1						
1381		L - 1 - A		4.86		7,32		*			-								
1382		L - 1 - B		6,61		90.6		# 11			*	-	3	Autor o A	A)	Ž	0/4		
1383		L - 1 - C		9.50		10.5		*		5		2	-		_				
1384		L - 1 - X		5.86	-	8,17		* "			,			_	_				
,85		L - 1 - Y		7.95		2°00		*						_					
1386		L - 2 - A		7.01		5.52		*							_				
1387		L - 2 - B		4,35		7.96		* =										-	
1388		L-2-C		5.98		12.0		=	<u>.</u>										
1389		L - 2 - X		1,28		10,3		*	_										
1390		L - 3- A		7.56		6.65		*				_				_	-		<u>.</u>
1391		L-3-B		2.68		5.57		*											
1392		L-3-C		1,37		8,37		*										<u> </u>	
1393		L - 4 - A		0.77		14,3		*						-			<u> </u>		
1394		L - 4 - C		1.86		10.7		*	_							<u> </u> 			
1395		L - S - A		1.79		3.44		*	·										_
			į																-

* Specific gravity of 0.970 determined from composite of samples in group.

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Lab	Pro
COLORADO SCHOOL OF MINES RESEARCH FOUNDATION	PAGE NO. GOLDEN, COLORADO

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840703

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Sponsor

ANALYTICAL LABORATORY REPORT
647-

July 29, 1964 Project Engineer W. H. Reeves Date Submitted

Lab	Samp.	!	G/T	011	G/T Water		Spec.	Specific												
No	No	Description	Est	Fnd	Est		Est		Est	Fnd	Est	Fnd	Est	Fnd	Est	Fnd	H 20	Fnd	H	H
1421		T - 14		1,52		14.9								31		-11				41.7
1422		T - 15 - B		1.08		18.1		F	*											
1423		T - 15 - C	_	1,53		13,8		z	*											
7, 1		T - 16 - A		2,32		15.5		E	*											
1425		T - 16 - B		3,34		16.9		t	*											
1426		T - 16 - C		2,10		11,2		=	*											
											-									
								-												
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* Specific gravity of 0.970 determined from composite of samples in group. lemarks

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Date Reported

July 30, 1964

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840703 Project Number

Sun O11 Company

Sponsor

Project Engineer ...

Date Submitted _

W. H. Reeves

July 29, 1964

LYTICAL LABORATORY REPORT	_	
LYTICAL	REPORT	·
	LABORATORY	
ANA 647-	[ALY]	647-

Lab	Samp.	ı	G/T	0.1	G/T W	G/T Water	Specific Gravity	fic										-		
No	No	Description	Est	771	Est		Est	Fnd	Est]	Fnd	Est	Fnd	Est	Fnd	Est 1	Fnd	st	Fnd E	st	Fnc
1396		L - 5 + B		3.54		3,10	0	970	*								╢	╫	-	
1397		L - 5 - C		1.99	-	1.92		Ξ	*		-						-		<u> </u>	
1398		L - 6 - A		4.95		7.89		E	*	-									-	
61		L-6-B		2,10	-	9.27		#	*											
1400		L-6-C		5.64	- 1	4,36		и	*							-	-			
1401		T - 1		4.18	i	19.5		2	*								_			•
1402		T - 2		1.18		6°61		ı	*						ļ <u>.</u> ,					
1403		T - 3		3,25		31,3		=	*											
1404		L-4-B		0.88		18.0		¥	*											}
1405		T - 5 - A	_	0.87	-	5.07	: 	E	*											
1406		T - 5 - B		0.83		5.34		E	*				-							
1407		T - 5 - C		1.29		17,3		#	*		•									
1408		T-6-A		1,03		10.0		ŧ	*											1
1409		T-6-B		66°0		17.8		F	*									_	-	
10		T-6-C		3,55		12.6		E	*								_			
1411		T - 9 - A		0.70		2.66		E	*								<u> </u>			
1412		T-9-B		0.0		6.81		=	*			 								
1413		T-9-C		2.03		12,4		E	*											
1414		T - 10 - A		60.9		5.17		=	*											
1415		T - 10 - B		4.26		4.77		E	*							-	-			
1416		T - 11		4.01		17.0		±	*							_				
1417		T - 12 - A		69.0		13,2		#	*						-				-	
1418		T - 12 - B		0,37		12,3		=	*										_	
1419		T - 12 - C		1.73		14.0		=	*									-		
1420		T - 13		66.0		11,2		E	*											

* Specific gray, of 0.970 determined from composite of samples in group. temarks

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Date Reported

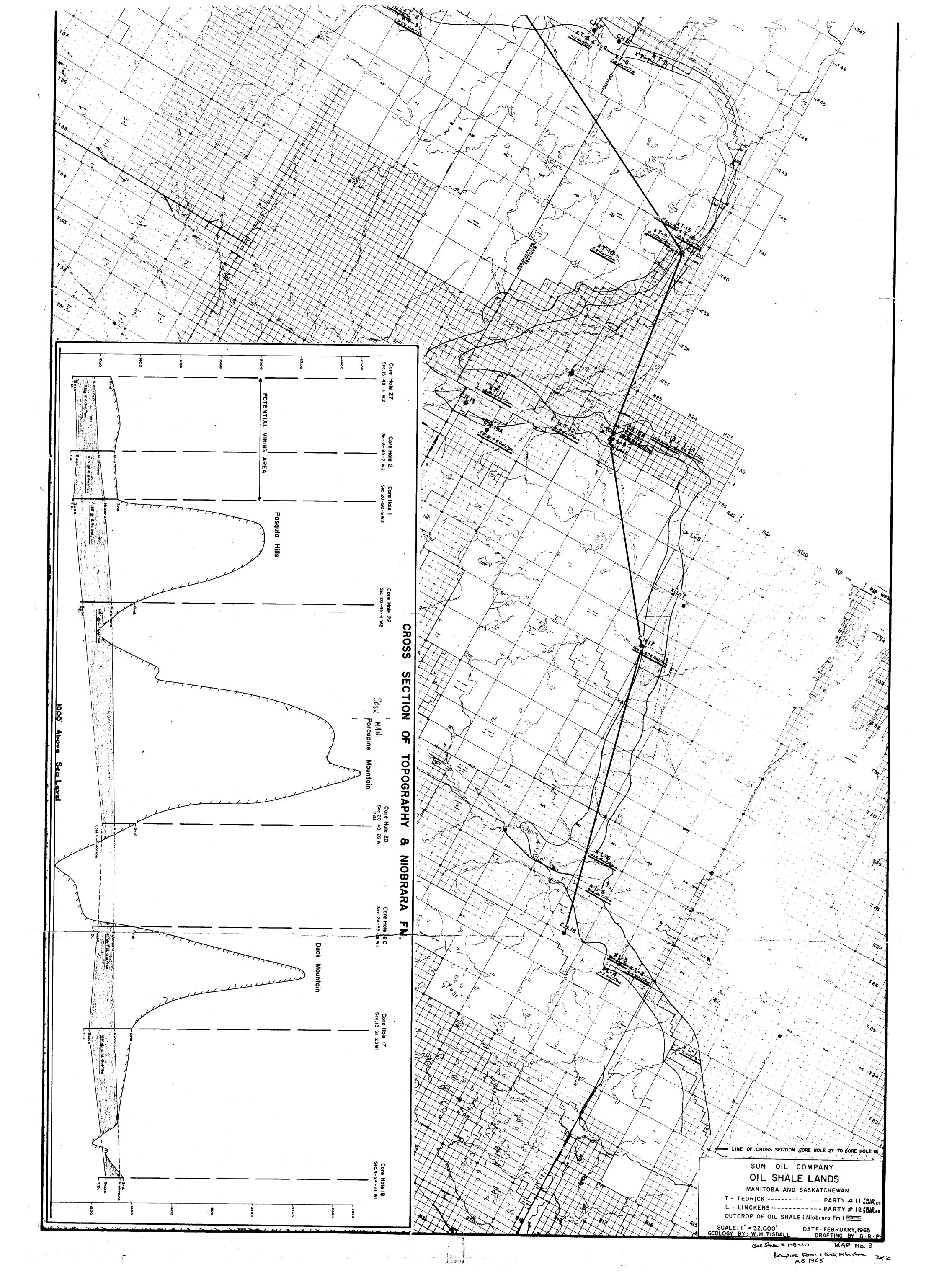
July 30, 1964

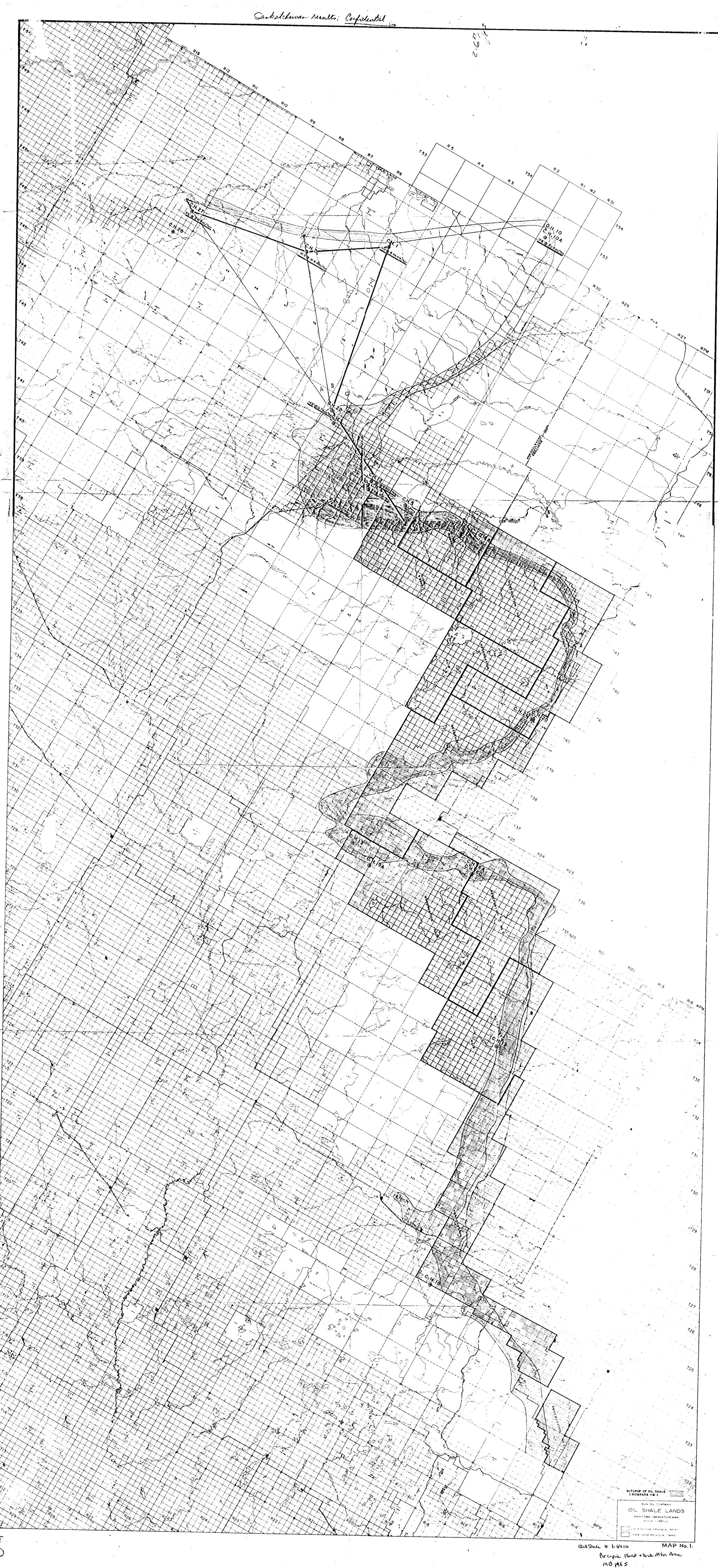
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				Est						`									<u></u>	<i></i>							
_		64		Fnd					 - -														*		:		
	eves	7, 1964		Est					`	-																	
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	Project Engineer	Date Submitted		Est			-	SSU	nss	กรร	· · · · ·				ļ	-								7	1		
	. Proje	. Date		Fnd E		_		73.5 S	56.2 S	52.8 S	<u></u>											~~		ı			
				Est F			 ty	- 73	- 56	52		_		<u> </u>								•	- 1				İ
			о́ 4	Fnd E	0.07		Viscosity	ſī.	(z	(J.		-											\			\dashv	
295-64	703	Oil Company	(NH ₄) ₂ SO ₄	Est F	°		Λ٦	1000	12	1300										·			~			_	
6	840703	00		Fnd E	တ္တ	3	 Sp.Gr.	0.965									 					ž.,	-		-	7	
er		Sun O	Bru/18		3330		Sp,	6.0											-						-	-	
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Lab Group Number	- Project Number	Sponsor	G/T Water	Fnd	16,1		 S	6.95											 	_							į
3	P	Sp	G/T	Est.			 	0)											 			-					,
ATION			021	Fnd	17.9		z	1,22																			
OUND,		ORT	G/T	Est													 										
HOOL OF MINES RESEARCH FOUNDATION	Golden, Colorado	ANALYTICAL LABORATORY REPORT		Description	Raw Shale			0.1															Ť				
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COLORADO		AN 648-	Lab	No	1209		ابد '	1209						,		i'	,	ン									emarks

August 24, 1964

Date Reported

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