

N.W.T. DEEP BAY

NO. 1

Drilling Authority No.
Date Issued

WELL NAME T.M.T. Dee, Bay No. 1
FIELD Wildcat Area: Great Slave Lake
LOCATION: Unit C Section 10 Grid 01-20 - 11-15
Latitude 61-16 Longitude 116-15-15
From Established Reference Marker

Rig Release Date: 6-5-52
Status D & A
Information Release Date 6-5-51

CHANGE OF NAME:

DATE RECEIVED	INDEX
	Application for a Drilling Authority. Well Completion Data. Well History Report.
	Application to Amend a Drilling Authority.
	Application to change a Well Name.
	Application to Abandon a Well or Suspend Drilling.
	Application to Alter Condition of a Well. Well History Supplement. Well Completion Data. Work-over Report No.
	Application to Commingle Production before Measurement.
	Data for Back Pressure Test on Natural Gas Wells — Monograph 7 Method.
	Data for Back Pressure Test on Natural Gas Wells — Vitter's Method.
	M.P.R. — Oil — Calculations.
	New Oil Well Report.
	New Gas Well Report.
	Well Inspection Report.
	Rig Inspection Report.
	Battery Inspection Report.
	Equipment Report.
	Well Card.
	Well Visit.
	Daily Drilling Reports.
	Logs. Large scale Small scale

CDPY

N.W.T. PETROLEUMS

General Petroleum of Canada, participating in the above company, is operating a Failing 55 rotary rig at Deep Bay on P. & N.C. Permit No. 234 (see attached map).

The company geologist has given the following section from the N.W.T. Deep Bay No. 1 well which was spudded in April 18th and abandoned May 4th:

Top Hay River shale	55 feet
" Simpson shale	110 feet
" Slave Point detrital limestone	375 feet
" " " bedrock	
" " " limestone	426 feet
" Presqu'ile dolomite	926 feet
" (Slave Point limestone?)	1043 feet
Bottom of hole in above	1321 feet

Significant sections were:

- 645 - 665 Limestone, good porosity, highly fractured, some bleeding oil.
- 665 - 900 Limestone, oil stained, fair to good porosity.

Three drillstem tests produced no significant results other than a little gas and sulphur water.

N.W.T. Deep Bay No. 2 well was spudded in May 15th and had reached a depth of 846 feet on May 29th. Results of this drilling are reported to be better than from the No. 1 well.

Top Hay River shale	40 feet
" Simpson shale	85 feet
" Slave Point limestone	351 feet

Significant sections were:

- 351 - 366 Limestone, vuggy, bleeding, fractured.
- 402 - 425 Limestone, finely crystalline, bleeding.

A drill stem test on the first section gave sulphur water and traces of oil.

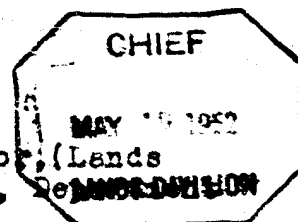
WEST TERRITORIES OILS LIMITED

Petcal Limited, NewRanchmens Oil Company Limited and Western Homestead Oils Limited are participating in a summer program of stratigraphic exploration to be carried on by West Territories Oils Limited. Four wells will be drilled within twenty-five miles east and south of Fort Simpson.

Yellowknife, N.W.T.
June 2, 1952.

'sgd' A.B. Irwin
Resident Geologist.

NOTICE OF INTENTION TO ABANDON A WELL



Notice to be forwarded, in duplicate, to the Director, (Lands Division), Northern Administration and Lands Branch, Department of Resources and Development, Ottawa.

Re: N. W. T. Deep Bay #1

Notice is hereby given, as required by Section 80 of the P. & N. G. Regulations, dated May 9, 1949, that it is the intention of the day of May 2nd 1952, to abandon Well No. 1 Elevation 14' above lake level. Southwest shore Deep, Great Slave Lake, approximately 350 yards in from shore. Permit No. 234

registered in the name of W. Leigh Brintnell of Edmonton

The well was drilled for Presqu'ile equivalent and very poor porosity development in Slave Point limestone.

Oil, gas and water were encountered as follows and will be shut off as outlined below:- 621' - 665' 1/2 hr. Sulphur water to surface.

Oil:- Nil

Gas:- Nil

Water:- Water rose to (How near the surface) To surface.

The depth drilled to was 1321' feet and the following casings were inserted:

Diameter	Depth feet	Weight	Free, set or cemented	The intention is to withdraw feet
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No casing set.

Cement Plugs:

40' - 65' 16 sacks
5' - 20' 14 sacks
Cellar filled.

A.B. Inwood.

Date May 15 19 52

Signature W. L. Brintnell
Title President N.W.T. Petroleum Limited
Address No. 7 Hangar, Municipal Airport
Edmonton, Alberta.

G. H. Killick. Geologist

NOTICE OF INTENTION TO BEGIN BORING OPERATIONS

NOTICE to be forwarded, in duplicate, to the ~~Director, (Lands Division),~~ *Supervising Engineer, Kellogg*
~~Northern Administration and Lands Branch, Department of Resources~~
~~and Development, Ottawa at least 15 days before work is begun~~

April 15th 19 52

Sir:

Notice is hereby given as required by Section 34 of the Petroleum and Natural Gas Regulations, dated 9th of May, 1949, that it is our intention to begin boring a well on P. & N. G. Permit No. 234 on or about the 17th day of April 19 52.

Standing in the name of H. W. T. Petroleum Limited
and located in accordance with attached sketch

(Give below distances from boundaries)

Being approximately 3 miles S.E. of the N.W. boundary and about 2 miles S.E. of the N.E. boundary.
The well shall be known as H. W. T. Deep Bay #1.

We intend using the following equipment:-

Type of drilling rig: Rotary Falling #55 New or used. Used

CASING

Size	Weight	Thread	Brand	New Used	Depth	How set
7"	23 lbs.	8		new	300'	Cemented

We expect to encounter the following oil, water and gas horizons and propose taking care of them as follows: We will inform you of any changes in this programme.

We expect to encounter slave point limestone at 365' and Presville Dolomite at 550'

The well is to be drilled ~~by company or~~ Contractor. If contractor give name.

The officers in charge of the operations will be: General Petroleum Limited

At the well C. Matthews, Engineer

Of the Company General
Petroleum of Canada Limited

Name of Permittee W. L. Brintnell,

Signature

W. L. Brintnell

Approved

W. B. Irwin

Title

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

15568 - 114th Street

Edmonton, Alberta

Phone 25624

FULL DIAMETER CORE STUDY REPORT

Canada Limited

Operator New Superior Oils of Field Northwest Territories Date May 30, 1952Well No. Northwest Territories Deep Bay No. 1 LocationFormation Slave Point Limestone Depths 1301.0'-1320.0' Lab. No. 3206

Sample Number	Midpoint of Sample in Ft.	Representative of Feet	Footage Rep.	Core Wt. Gms.	Permeability md. Vertical	Radial	% Porosity	Density Bulk	Matrix	Description
Core Number 13		1301'-1321'		Recovered 19.0'						
Similar to 2A	1301.0-1303.5	2.5	----	----	0.006	0.007	0.0	----	----	C D
1A	1303.8	1303.5-1305.0	1.5	575	0.008	0.02	0.1	2.82	2.83	D
2A	1309.7	1305.0-1313.0	8.0	1249	0.006	0.007	0.0	2.90	2.90	D
3A	1313.8	1313.0-1315.4	2.4	1105	0.008	0.005	0.0	2.70	2.70	D
Similar to 2A	1315.4-1320.0	4.6	----	----	0.006	0.007	0.0	----	----	D
Missing ----	----	1.0	----	----	----	----	----	----	----	----

CORE DESCRIPTION TERMS:

C Crack
D Dense

Slave Point Limestone



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WATER ANALYSIS REPORT

Field Deep Bay, North West Territories. Well No. N.W.T. Deep Bay No. 1.
 Operator Re: Superior Oils of Canada Ltd. Location Unsurveyed Territory.
 Sampled by Date Rec. May 9, 1952.
 Formation Depths 621'-665' How Sampled D.S.T.
 Other pertinent data D.S.T. No. 4.

 Analyzed by Chemical & Geological Lab. Ltd. Date May 13, 1952. Lab. No. 3221.

PARTS PER MILLION (MILLIGRAMS PER LITER)

Na & K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	OH	H ₂ S
306.00	21.65	13.02		51	54.23		8.35		Present

MILLIGRAM EQUIVALENTS

1330.63	103.06	107.07		1.06	1531.02		13.60		
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MILLIGRAM EQUIVALENTS IN PERCENT

43.04	3.50	3.46		0.04	49.52		0.44		
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Total Solids in Parts
per Million

By evaporation..... 92,890
 After ignition..... 87,770
 Calculated..... 88,814

Specific Gravity..... 1.050
 Observed pH..... 5.0

Properties of Reaction in
Percent

Primary salinity..... 86.08
 Secondary salinity..... 13.04
 Primary alkalinity..... 0
 Secondary alkalinity..... 0.08
 Chloride salinity..... 99.92
 Sulfate salinity..... 0.08

Remarks and conclusions.....

Formation **Slave Point Limestone** Depths **413.0'-445.0'** Lab. No. **3206**

Weighted average porosity	3.0 %
Weighted average radial permeability on 160.9 feet	21.69 md.
Weighted average vertical permeability	4.36 md.
Weighted average maximum permeability	25.12 md.
Porosity Feet	657.20
Maximum porosity	8.0 %
Minimum porosity	0.6 %
Maximum radial permeability	1000 + md.
Minimum radial permeability	0.007 md.
Maximum vertical permeability	24 md.
Minimum vertical permeability	0.004 md.
Core with maximum permeability of 15.0 md. or greater.	
Footage	56.0'
Weighted average porosity	3.09 %
Weighted average radial permeability on 36.6 feet	106.6 md.
Weighted average vertical permeability	13.95 md.
Porosity Feet	172.83
Core with maximum permeability between 1.0 and 9.9 md. inclusive	
Footage	4.7'
Weighted average porosity	3.39 %
Weighted average radial permeability	3.22 md.
Weighted average vertical permeability	0.173 md.
Porosity Feet	15.94
Core with maximum permeability less than 1.0 md.	
Footage	120.1'
Weighted average porosity	3.90 %
Weighted average radial permeability ... on 119.6 feet	0.034 md.
Weighted average vertical permeability	0.049 md.
Porosity Feet	468.43

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FULL DIAMETER CORE STUDY REPORT

Operator New Superior Oils of Canada Limited Field Northwest Territories Date May 12, 1952

Well No. Northwest Territories Deep Bay No. 1 Location

Formation Slave Point Limestone Depths 413.0'-645.0' Lab. No. 3206

Sample Number	Midpoint of Sample in Ft.	Representative of Feet	Footage Rep.	Core Wt. Gms.	Permeability md. Vertical	Radial	% Porosity	Density Bulk	Matrix	Description
Core Number 1			413'-413'		Recovered 4.8'					
Similar to No. 12	413.0-415.4	2.4	---	---	0.03	0.11	3.1	---	---	1.8
No Sample	415.4-415.7	0.3	---	---	---	---	---	---	---	1.8
Similar to No. 6	415.7-416.5	0.8	---	---	0.11	0.24	5.6	---	---	1.8
Similar to No. 10	416.5-417.8	1.3	---	---	0.04	0.01	5.0	---	---	---
Missing		0.2	---	---	---	---	---	---	---	---
Core Number 2			418'-429'		Recovered 11.0'					
No Sample	418.0-418.6	0.6	---	---	---	---	---	---	---	---
6	421.1	418.6-421.5	2.9	901	0.11	0.24	5.6	2.52	2.57	1.8
7	423.4	421.5-423.6	2.1	914	0.22	0.33	6.6	2.50	2.57	1.8
8	425.1	423.6-425.5	1.9	973	0.11	0.46	6.6	2.43	2.54	1.8
Similar to No. 12	425.5-426.8	1.3	---	---	0.05	0.11	3.1	---	---	1.8
10	428.6	426.8-429.0	2.2	705	0.04	0.01	5.0	2.55	2.59	1.8
Core Number 3			429'-452'		Recovered 22.7'					
Similar to No. 10	429.0-430.0	1.0	---	---	0.04	0.01	5.0	---	---	1.8
12	430.5	430.0-431.1	1.1	932	0.03	0.11	3.1	2.57	2.64	1.8
Similar to No. 12	431.1-431.5	0.4	---	---	0.03	0.11	3.1	---	---	1.8
Similar to No. 10	431.5-434.0	2.5	---	---	0.04	0.01	5.0	---	---	1.8
14	436.1	434.0-437.0	3.0	1140	0.04	0.007	2.8	2.53	2.65	1.8
16	440.1	437.0-440.5	3.5	1319	0.07	0.03	5.0	2.55	2.68	1.8
Similar to No. 10	440.5-441.0	0.5	---	---	0.04	0.01	5.0	---	---	1.8
Similar to No. 16	441.0-442.7	1.7	---	---	0.07	0.03	5.0	---	---	1.8
Similar to No. 19	442.7-443.0	0.3	---	---	0.01	0.003	3.2	---	---	1.8
No Sample	443.0-443.7	0.7	---	---	---	---	---	---	---	1.8
19	443.9	443.7-445.5	1.8	902	0.01	0.003	3.2	2.56	2.64	1.8
21	446.1	445.5-448.4	2.9	771	0.07	0.04	8.0	2.50	2.72	1.8
Similar to No. 29	448.4-451.7	3.3	---	---	0.08	0.05	4.9	---	---	1.8
Missing		0.3	---	---	---	---	---	---	---	---
Core Number 4			452'-476'		Recovered 24.5'					
29	458.3	452.0-460.9	8.9	1261	0.08	0.05	4.9	2.55	2.68	1.8
Similar to No. 29	460.9-461.4	0.5	---	---	0.03	0.05	4.9	---	---	1.8
Similar to No. 29	461.4-469.7	8.3	---	---	0.08	0.05	4.9	---	---	1.8
No Sample	469.7-470.3	0.6	---	---	---	---	---	---	---	1.8
Similar to No. 29	470.3-471.5	1.2	---	---	0.08	0.05	4.9	---	---	1.8
35	472.2	471.5-472.5	1.0	960	0.14	2.6	5.9	2.51	2.64	1.8
Similar to No. 29	472.5-472.8	0.3	---	---	0.08	0.05	4.9	---	---	1.8
39	473.3	472.8-474.0	1.2	831	0.07	0.06	8.0	2.49	2.78	1.8
Similar to No. 42	474.0-476.5	2.5	---	---	0.02	0.01	3.0	---	---	1.8
Core Number 5			476'-500'		Recovered 24.0'					
42	476.8	476.0-480.4	4.4	1198	0.02	0.01	3.0	2.59	2.67	1.8
Similar to No. 45	480.4-482.2	1.8	---	---	20	(a)	5.2	---	---	1.8
45	482.5	482.3-482.8	0.6	1063	20	(a)	5.2	2.53	2.65	1.8
46	483.8	482.8-484.0	1.2	1086	19	100%	3.6	2.58	2.68	1.8
Similar to No. 45	484.0-484.3	0.3	---	---	20	(a)	5.2	---	---	1.8
Similar to No. 46	484.3-486.2	1.9	---	---	19	100%	3.6	---	---	1.8

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FULL DIAMETER CORE STUDY REPORT

Operator New Superior Oils of Canada Limited Field Northwest Territories Date May 12, 1932

Well No. Northwest Territories Deep Bay No. 1 Location

Formation Slave Point Limestone Depths 413.0'-665.0' Lab. No. 3206

Sample Number	Midpoint of Sample in Ft.	Representative of Feet	Footage Rep.	Core Wt. Gms.	Permeability md. Vertical	Radial	% Porosity	Density Bulk	Matrix	Description
Similar to No. 42		486.2-488.9	2.7	---	0.02	0.01	3.0	---	---	1.8
No Sample		488.9-489.4	0.5	---	---	---	---	---	---	2
Similar to No. 42		489.4-490.0	0.6	---	0.02	0.01	3.0	---	---	1.8
Similar to No. 42		490.0-495.4	5.4	---	0.02	0.01	3.0	---	---	1.8
No Sample		495.4-496.0	0.6	---	---	---	---	---	---	2
Similar to No. 56		496.0-500.0	4.0	---	12	3.3	2.9	---	---	1.8
Core Number 6			500'-521'		Recovered 22.0'					
No Sample		500.0-509.2	0.2	---	---	---	---	---	---	2
56	506.1	500.2-509.6	9.4	329	12	3.3	2.9	2.56	2.64	1.8
No Sample		509.6-510.1	0.5	---	---	---	---	---	---	2
Similar to No. 56		510.1-516.5	6.4	---	12	3.3	2.9	---	---	1.8
No Sample		516.5-517.4	0.9	---	---	---	---	---	---	2
Similar to No. 66		517.4-522.0	4.6	---	0.02	0.009	0.6	---	---	1.8
Core Number 7			521'-546'		Recovered 25.8'					
Similar to No. 66		521.0-523.7	2.7	---	0.02	0.009	0.6	---	---	1.8
No Sample		523.7-524.0	0.3	---	---	---	---	---	---	2
66	524.2	524.0-524.5	0.5	574	0.02	0.009	0.6	2.64	2.68	1.8
No Sample		524.5-524.9	0.4	---	---	---	---	---	---	2
67	525.1	524.9-525.2	0.3	513	0.01	0.009	1.0	2.61	2.64	1.8
No Sample		525.2-525.6	0.4	---	---	---	---	---	---	2
Similar to No. 66		525.6-528.2	2.6	---	0.02	0.009	0.6	---	---	1.8
No Sample		528.2-531.6	3.4	---	---	---	---	---	---	2
Similar to No. 73		531.6-533.2	1.6	---	0.01	0.02	6.1	---	---	1.8
No Sample		533.2-539.1	5.9	---	---	---	---	---	---	2
73	543.2	539.1-546.8	7.7	590	0.01	0.02	6.1	2.57	2.60	1.8
Core Number 8			546'-570'		Recovered 25.0'					
74	547.0	546.0-549.6	3.6	1149	0.04	0.03	4.9	2.58	2.72	1.8
No Sample		549.6-550.8	1.2	---	---	---	---	---	---	2
76	551.2	550.8-553.3	2.5	1149	0.01	0.01	4.7	2.59	2.71	1.8
Similar to No. 81		553.3-555.1	1.8	---	24	(a)	3.5	---	---	1.8
Similar to No. 76		555.1-555.8	0.7	---	0.01	0.01	4.7	---	---	1.8
Similar to No. 76		555.8-557.5	1.7	---	0.01	0.01	4.7	---	---	1.8
Similar to No. 81		557.5-564.8	7.3	---	24	(a)	3.5	---	---	1.8
No Sample		564.8-568.4	3.6	---	---	---	---	---	---	2
81	568.7	568.4-569.7	1.3	964	24	(a)	3.5	2.62	2.72	1.8
No Sample		569.7-571.0	1.3	---	---	---	---	---	---	2
Core Number 9			570'-595'		Recovered 29.0'					
Similar to No. 81		570.0-570.8	0.8	---	24	(a)	3.5	---	---	1.8
Similar to No. 81		570.8-571.1	0.3	---	24	(a)	3.5	---	---	1.8
No Sample		571.1-572.0	0.9	---	---	---	---	---	---	2
Similar to No. 81		572.0-572.2	1.2	---	24	(a)	3.5	---	---	1.8
No Sample		572.2-572.6	1.4	---	---	---	---	---	---	2
Similar to No. 81		572.6-578.0	5.4	---	24	(a)	3.5	---	---	1.8
No Sample		578.0-599.0	21.0	---	---	---	---	---	---	2

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FULL DIAMETER CORE STUDY REPORT

Operator New Superior Oil Co. of Canada Limited Field Northwest Territories Date May 12, 1952
 Well No. Northwest Territories Deep Bay No. 1 Location _____
 Formation Slave Point Limestone Depths 413.0' - 665.0' Lab. No. 3206

Sample Number	Midpoint of Sample in Ft.	Representative of Feet	Footage Rep.	Core Wt. Gms.	Permeability md. Vertical	Radial	% Porosity	Bulk Density	Matrix	Description
Core Number 10			595'-620'		Recovered 22.6'					
No Sample		395.0-617.6	22.6	---	---	---	---	---	---	
Missing			2.4	---	---	---	---	---	---	
Core Number 11			620'-645'		Recovered 24.5'					
No Sample		620.0-626.1	6.1	---	---	---	---	---	---	
Similar to No. 84		626.1-627.0	0.9	---	---	---	---	---	---	
84	627.3	627.0-627.6	0.6	909	0.14	1000 +	2.1	---	---	
No Sample		627.6-628.6	1.0	---	---	---	---	---	---	
85	630.3	628.6-631.0	2.4	1025	0.004	0.008	1.7	2.59	---	
No Sample		631.0-631.5	0.5	---	---	---	---	---	---	
Similar to No. 84		631.5-632.7	1.2	---	---	---	---	---	---	
87	633.3	632.7-633.8	1.1	1231	0.08	0.15	2.1	2.60	---	
88	633.9	633.8-635.2	1.4	1002	0.13	0.34	0.7	2.65	---	
89	635.4	635.2-636.9	1.7	1207	0.08	0.05	1.4	2.65	---	
90	636.0	636.9-638.4	1.5	645	0.33	1.6	4.2	2.55	---	
Similar to No. 85		638.4-639.0	0.6	---	---	---	---	---	---	
Similar to No. 89		639.0-639.7	0.7	---	---	---	---	---	---	
91	639.9	639.7-642.0	2.3	359	0.13	0.34	0.7	---	---	
Similar to No. 89		642.0-644.0	2.0	---	16	294	3.5	2.62	---	
92	644.3	644.0-644.5	0.5	836	0.04	0.05	1.4	---	---	
Missing			0.5	---	0.02	0.05	2.2	2.53	---	
Core Number 12			645'-665.5		Recovered 20.0'					
93	645.3	645.0-646.7	1.7	1133	0.007	22	1.8	2.56	---	
Similar to No. 92		646.7-647.1	0.4	---	0.02	0.05	2.2	---	---	
94	647.8	647.1-653.2	6.1	1343	0.14	15	1.9	2.65	---	
95	653.5	653.2-653.7	0.5	988	0.05	(a)	5.6	2.52	---	
Similar to No. 94		653.7-654.1	0.4	---	0.14	15	1.9	---	---	
96	654.5	654.1-654.7	0.6	1068	10	(a)	6.3	2.47	---	
Similar to No. 94		654.7-655.2	0.5	---	0.14	15	1.9	---	---	
97	655.5	655.2-655.9	0.7	1310	0.02	0.01	2.5	2.63	---	
98	656.2	655.9-656.5	0.6	1136	0.08	4.6	1.7	2.62	---	
Similar to No. 93		656.5-658.1	1.6	---	0.08	4.6	1.7	---	---	
99	658.4	658.1-658.7	0.6	755	0.01	0.19	3.6	2.60	---	
100	658.9	658.7-660.8	1.3	1288	0.03	0.008	1.6	2.65	---	
Similar to No. 100		660.8-665.0	5.0	---	0.03	0.008	1.6	---	---	

CORE DESCRIPTION SYMBOLS

D	Dense
Co	Coralline Fragments
VC	Vertical Crack
HC	Horizontal Crack
C	Cracks
VF	Open Vertical Fracture
HF	Open Horizontal Fracture
F	Open Fractures
SV	Slightly Vaggy
V	Vaggy
LV	Large Vugs
I	Intergranular
S	Stained
St	Stylolite
A	Anhydrite
Sh	Shale
Et	Etched
U	Unconsolidated
SS	Sandstone
ls	Limestone
Cg	Conglomerate
Py	Pyrites
Sp	Small Flugs
Ufs	Unconsolidated fine sand
sl	Sand Lenses
Shl	Shale Lenses
CSS	Coarse Sandstone
FSS	Fine Sandstone
MSS	Medium Sandstone
Pyb	Pyrobitumen
Shy	Shaly
Cly	Clayey
Sil	Siltstone
R1	Slightly Reactive to Cold 15% HCl
R2	Reactive to cold 15% HCl
G1	Glaucconite
fsal	Fine Sand Lenses

NORTHWEST TERRITORIES DEVELOPMENT

- C. G. Matthews

PREFACE:

As instructed by meeting March 14th, 1952, re Northwest Territories Oils Limited, the writer, after preliminary preparation and discussion, proceeded to Edmonton to carry out necessary arrangements in connection with purchases of materials, radio, licenses, transportation, fabrication of camp housing, cooking, supplies, etc., for development of Deep Bay area, N. W. T.

All of the above to be carried out with the assistance of Mr. Brintnell, General Petroleum staff of purchasing, General Petroleum shop employees and prospective employees to accompany move to N. W.T. project under direction of J. E. Routledge.

Due to the lateness of the winter season, possibility of early spring breakup, road bans, etc., each and everyone applied their efforts in a most conscientious and capable manner to expedite completion.

Since transportation problems in this northern area are difficult, much time was given in endeavouring to prepare for operations under most adverse conditions. Particular mention is hereby given of the excellent co-operation and assistance given by Mr. Allan Wright, Field Superintendent, General Petroleum of Canada Limited and their employees.

* * * * *

March 26th, 1952 -

With last truckload of equipment (cooking) leaving Edmonton at 4:00 A. M. March 26th, 1952, J. E. Routledge (Toolpusher), J. E. Peaks (Cook), and the writer left Edmonton for Hay River via C. P. A., arriving at destination at 3:45 P. M. approximately 1 hour late of schedule. Made contact with army signals to arrange for testing of radio and schedules to follow, contacted Associated Airways (as arranged in Edmonton), found no plane available to fly over proposed wellsite area, Mills Lake area, and location of Punch Petroleum Development at Deep Bay (until 3:00 P. M., March 27th, 1952).

Contacted Menzies (contractor of tractor train move) who advised that moving equipment would be available March 28th, 1952.

Advised by R. C. M. P that Edmonton - Hay River highway has to be effective 7:00 A. M. March 28th, 1952.

Checked all truckers arriving as to position of our convey enroute. Reported some rolling, others delayed by bad roads.

Notified hotel of possible influx of truckers and crews during next two days.

March 27th, 1952 -

Checked first truckload arriving to Menzies - cement, rig testing, and subs okay. Contacted Imperial Oil re fuel, gasoline, etc., advised by agent that he was short of barrels and that arrangement made at Edmonton re swap of our barrels from Mills Lake was unsatisfactory. However, cleared this up by wire.

Bunkhouse arrived badly shaken up, too much overhang on lowboy, one bunk had broken loose and damaged oil stove - Weber to repair same after getting some sleep.

As arranged, W. R. Menzies, J. E. Routledge and the writer left Hay River by Associated Airways chartered plane at 2:10 P. M. Flew over Big Island, Punch locations and operations - appears to be three wells (this latter discovered in error - one of the three was a campsite). No. 1 well approximately 1 1/2 miles west north-west of west end of Deep Bay and parallel to creek shown on Providence map. No. 2 drilling west north-west of No. 1 well.

Made reconnaissance flight over proposed wellsite, appears to be well timbered and low lying but could be higher south of timber line.

March 27th, 1952 (Cont'd) -

Noted mile long strip of open water at mouth of McKenzie River, East of Sinclair Island. Continued flight to mouth of Kakisa River and thence followed proposed tractor train road to Millie Lake. Road looks okay with some scrub grown up in spots (this road to be used if weather continues soft). Landed at Millie Landing strip after dive bombing snow three feet deep, necessitating turning plane around several times by hand to make runway for takeoff.

Routledge, Menzies and the writer checked Yellowknife Transportation camp for extra sleighs, believed they found one small sleigh in good repair maybe okay to haul pump. Since pilot would not land on river by reason of rough ice and we did not have snow shoes, we returned to plane, flew over rig several times (almost covered with snow) and returned to Hay River at 3:15 P. M. Checked with Menzies as to empty sleighs for loads expected in during night or early morning. Has 3 sleighs in yard ready for heavy equipment. No word from cat train at Pine Point.

March 28th, 1952 -

Checked load groceries okay with bills. Casing and tubing and diamond core barrel arrived and unloaded onto lumber pile - no sleighs.

Light planthouse load okay.

Cookery load okay except for ceiling fans shaking loose.

Checked off load of mud okay.

Broken down cement truck load arrived okay, no bags broken, stored in Menzies warehouse since it is not known if we have sufficient sleighs to take all in on our trip with cat train.

Still no word from cat train. Radio very poor. Menzies still expects them tonight.

Peske arranged with signals to test radio tomorrow morning March 29th.

Equipment and supplies now all in Hay River but load of miscellaneous equipment loaded out from General Petroleum's warehouse - Edmonton.

Menzies beat carpenter repairing bunkhouse after being loaded on sleighs.

Three sleighs now loaded, bunkhouse, light plant and load of cement and rig tents.

March 29th, 1952 -

Cat train and sleighs arrived from Pine Point at 4:00 A. M. Sleighs in poor repair loaded best of them with casing. Cement and mud-balance being repaired.

Had difficulty getting help. Big pow-wow March 28th, all Indians drunk. Cannot possibly be loaded out until Sunday. Peake tested radio at signals apparently it was pretty well shaken up also, required repairs but working okay now.

Loaded up all fuel, greases, lubes, etc. at Imperial Oil. Hauled to Menzies for loading as sleighs were repaired (40 drums per sleigh with grease, etc. on top).

Loaded part of load of equipment and supplies in van load from Edmonton. Found that diamond core barrel tools were missing, advised Edmonton. Unable to check off balance of equipment until tomorrow-Sunday.

March 30th, 1952 -

Loaded balance of equipment with exception of cookery.

Loaded groceries in bunkhouse and light plant house. Started up light plant and connected to bunkhouse and cookery. Treated water tank and hot water heater with soda, flushed and refilled tank with clean water, installed deep freeze; cut up fresh meat and packed same. One sleigh to load and all hands moved in at end of day.

Checked balance of van load and found that hams, bacon, butter were not shipped, advised Edmonton that we were purchasing foodstuffs at Hay River but to ship diamond core barrel tools air express with Failing 55 parts to arrive Hay River April 2nd, 1952, and which would be picked up by Bombadier.

March 31st, 1952 -

Loaded cookery on remaining sleigh, made up cat train (2 sections) Caterpillar D-7 with Dozer, four sleigh loads and train bunkhouse in first section and a Caterpillar D-8 with six sleighs which included our camp.

With all sleighs loaded the cat train left Hay River at 11:42 A.M.

Checked radio with Signals before leaving, found same okay, with arrangements completed to have one schedule daily at 8:30 P. M. until located at junction (Kakisa River) and twice daily thereafter 8:30 A. M. and 8:30 P. M. We are to transmit on 4270 frequency and receive on 5460.

Tried contacting Signals at Pte. de Roche (Approximately 20 miles from Hay River) but apparently they did not meet schedule so no contact made.

April 1st, 1952 -

After travelling the lake from Hay River, we entered the Portage Road at Pte. Desmaris, arriving back on the ice (Beaver Lake) at 10:00 A.M. Still unable to contact signals on morning schedule.

Arrived at Kikisa junction at 3:45 P. M. Menzies, Bombadier who caught up to us at this point proceeded ahead with Guide and Routledge, to scout balance of road to Mills Lake.

Unloaded four sleighs - 1 mud, 2 fuel, 1 miscellaneous. Split train, allowing the two caterpillars and five sleighs to proceed to Mills Lake, leaving at 8:00 P. M.

J. Routledge, Del Weber and Bombadier driver leaving at 3:00 A. M. April 2nd, 1952. No room for additional men in train facilities camp.

Contacted Signals on schedule at 8:30 P. M. but we were unable to pass message sufficiently clear for them to read. Also unable to contact Mills Lake cat train which also transmits on 4270 frequency.

Our chartered Bombadier arrived at 5:00 P. M. April 1st.

April 2nd, 1952 -

With Peake, Emslie, Dave Weber, C. Spornitz at Junction camp.

Tried to contact Signals; Menzies at Hay River; and Mills Lake cat train on schedule. Arranged for radio, no success. Bombadier, driver (Con Strasbourg) C. Spornitz and the writer left Junction Camp at 9:50 A. M. to scout Deep Bay location.

Arrived at Punch No. 1 at 12:15 P. M. (distance 33 miles as detoured road around channel marked) proceeded to Punch No. 2. Met with Dave Leggett, Geologist, who could give out no information as instructed by Calgary office approximately March 25th, 1952.

The No. 1 location being approximately 1 1/2 miles from Deep Bay and No. 2, 3 1/2 miles west north west of No. 1.

Boyle Bros., Contractors on the well, are hauling water for the drilling equipment from a point approximately 1/2 mile out, into Deep Bay (soundings from shore to this point found ice to bottom) they (Boyles) are using a TD 6 and water tank on sleighs (no blade) proceeded south easterly near south shore of Deep Bay to approximate position of proposed location for N. W. T. Deep Bay No. 1.

Found shore line low but well timbered (spruce) however, several points jutting out into the Bay will allow access to higher ground at this time of year. Natives say okay until middle of May. Marked entrance and returned to Kakisa Junction at 6:00 P. M.

April 2nd, 1952 - Continued

No results obtained in making contact with anyone on night schedules. However, did hear CJCA Edmonton News at 7:00 P. M., April 3rd, 1952.

Could not make contact with Menzies, Hay River or Mills Lake cat train at 7:00 A. M. Sent chartered Bombadier with Peake and Emslie to Hay River to pick up Failing 55 parts, diamond core barrel tools and have radio checked. Also to determine if Signals would listen more often for calls when reception was better. All messages going out with Bombadier today.

April 3rd, 1952 -

No contact by Radio (as radio at Hay River), J. Routledge and R. Erickson arrived from Mills Lake at 7:00 P. M. reporting that ice at McKenzie River crossing was poor (that is not as thick as expected) in sounding up and down crossing points in River ice. Varied from 14" to 24" in thickness.

Division of opinion seemed to have taken place at Mills Lake over safety of crossing. J. Routledge, Guide and R. Stiener, one of Menzies' cat train bosses, believing that soundings of 24" was sufficient while another cat train boss, R. Erickson, was not convinced and would not agree until he was absolved of responsibility for lost equipment at this crossing and in writing, since Menzies carried no insurance after March 15th.

Unable to make contact with anyone by radio and each day making crossing more hazardous. Routledge and the writer prepared a release (a copy of which is attached herewith).

Routledge, C. Spornitz, and Erickson returning to Mills Lake leaving Junction at 8:00 P. M.

Peake, Emslie and Strasbourg returned by Bombadier at 3:00 A. M., April 4th, 1952.

Radio receiver was found to be short a connection for receiving at distance while being okay on strong signals.

Army Signals and Peake making repairs at their Hay River station.

April 3rd, 1952.

W. R. Menzies,
HAY RIVER, N.W. T.

Company: N. W. T. Oils Limited
Calgary, Alberta.

Contractor: W. R. Menzies,
Hay River, N. W. T.

Att'n: Messrs. R. Erickson & R. Stiener

This will be your authority to move immediately without delay, the drilling rig known as Failing 55 and all other equipment attached thereto, presently located at Axe Point (Mills Lake Area) across the McKenzie River at a point where soundings have indicated a continuous crossing 24" of good ice.

This crossing designated to the satisfaction of the company and representative, J.E. Routledge. The company hereby agrees to assume responsibility for loss of equipment providing however that reasonable precaution is taken during this crossing.

The company does not assume any responsibility for loss of life in event of any accident to the employees of the contractor.

Signed: " R. Erickson "

Contractor

Signed: " C. G. Matthews "

Company.

April 4th, 1952 -

Could not make contact with cat train by radio all day.

We were able to contact Signals at Hay River and reception and transmission good.

Passed messages and they then endeavoured to contact cat train from Hay River also through Providence. No results.

Menzies' Bombadier returning from taking sick native to Hay River reported they were clearing snow for loading.

Roy Emslie left with Bombadier (Menzies) from Mills Lake at 1:30 P. M., taking supplies to set up temporary camp. Using Yellowknife Transportation Co. Ltd., cabin at Mills Lake.

Dave Weber, Strasbourg and Peeke applying shellac and varnish to cookery, using materials supplied by Northwest Industries (time of move would not allow this application at Edmonton).

April 5th, 1952 -

No contact with cat train (believe their radio is out of order).

Contacted Signals, Hay River and passed report.

Signals tried contacting cat train - no results. They, Signals, finally contacted Providence by key but schedules arranged by them for us, gave no results.

Weber, Strasbourg, Peeke, varnishing cookery. Weather 30 - 35° above, overcast in morning, clearing at noon.

Completed loading of rig at Mills Lake and all moved across McKenzie River by 11:00 P. M. Crews working tour, taking down equipment for rough move.

April 6th, 1952 -

Completed tying down loads, made up train, left Mills Landing at 9:00 A. M. in blizzard. Road very poor. Boulders and deep mud. Chains and hunting pole repairs almost continually and cats stuck often.

Progress for day - 3 miles.

Weather 20 above and blizzard.

Unable to make radio contact anywhere.

April 7th, 1952 -

Unable to make contact by radio until night. Routledge returned to Junction by Bombadier and gave report of train approximately twenty miles from Mills Landing. Progress of train very slow.

Sleighs loaded too heavy, requiring cutting of two loads and truck to be picked up with another trip.

Tested ice on Beaver Lake approximately 3 1/2 feet all okay for crossing.

Weather 6° below zero, still blizzarding at Mills Lake.

April 8th, 1952 -

Get train now making good time with lightened load. Arrived at Junction at 12:00 midnight.

Weather clear and 25° below zero.

Radio contact with Hay River okay.

April 9th, 1952 -

Weather clear, 25° below zero.

Unloaded Mills Lake sleighs of empty fuel barrels at Junction.

Made up train to proceed to Deep Bay, with camp, light plant, drill pipe and miscellaneous equipment from Mills Lake.

Left Junction at 5:00 A. M. April 9th, 1952, arriving at Deep Bay at 8:30 P. M. Unable to spot location in darkness.

Shut down to wait daylight.

Weather moderating by night.

No radio contact.

April 10th, 1952 -

Weather clear zero.

Bulldozed road through bush to pick higher ground for wellsite, located same approximately 1/4 mile south of Deep Bay and 1/2 mile north of Dr. Bateman's proposed wellsite.

Cleared location, spotted rig and camp unloaded all but one sleigh to allow empty sleighs to return to Junction and Mills Lake.

April 10th, 1952 - Continued

Repairs to Caterpillar D-7 delayed train 4 hours, leaving for Junction at 9:00 P. M.

No radio contact until setting up better antennae.

The writer went to Hay River by Bombadier to send messages and arrange for small fisherman's shack to be used for grocery storage.

April 11th, 1952 -

Weather clear to 10 above zero.

The writer returned to Deep Bay No. 1 at 12:00 Noon, with storage shack loaned from Menzies, towed same behind Bombadier.

Crews - blasting suction pit and settling pit. Ground very good but frozen with many big granite boulders. Progress slow. Adjusted radio antennae and obtained much better reception and transmission.

Cat operator returned during night reporting D-8 cat train broken down twenty miles from wellsite, final drive bearings failed and punctured case. Bombadier and cat operators left for Hay River for repairs.

Unable to contact cat train enroute to Mills Lake.

April 12th, 1952 -

Weather clear - 10 above zero, little snow during night.

No contact with Menzies, Hay River or cat train Mills Lake.

Crews- blasting and thawing pits (firing were effective than blasting).

Weber repairing equipment and servicing motors.

Moved groceries to storage after cleaning and disinfecting shack.

Routledge and writer went to Punch No. 2 by Bombadier. Legget, Geologist, was not at operations and depth of well reported at 1068', standing cemented after losing their surface casing 2 1/2", after it had broken off and fallen down the hole to approximately 450'. They intend to try and get into pipe and core on to Presqu'Isle.

We did not see cores.

They are installing radio April 14th, 1952. The D-6 cat will not be available for our use except in dire emergency. They are, however, going to haul us one load of water for camp use.

April 13th, 1952 -

Thawing and blasting pits, general setting up equipment and building pole racks for mud and cement.

Received contact from cat train at Mills Lake, D-7 down for repairs approximately twenty miles west of Kakisa Junction (drag lines and clutch).

Contacted Menzies through Signals repairs to be taken out by Bombadier.

Weather clear 35° above zero, snow settling fast in bush and on lake.

April 14th, 1952 -

Cat train from Mills Lake to Deep Bay still broken down until plans dropped repairs. Moving again at 4:00 P. M. Crews digging and cribbing suction pit with poles. Weber made temporary repairs to D 3400 light plant and ordered new fuel transfer pump.

Made radio schedule with Providence 8:00 P. M. daily as alternative to Hay River contact.

April 15th, 1952 -

Cat train enroute with balance of equipment from Mills Lake.

Routledge left at noon for Providence by Bombadier to pick up tester, supplies, Indian workman, also to meet cat train on Beaver Lake as arranged by radio contact.

Crews completing cribbing, generally cleaning up, working on dead men for rig.

Contacted Menzies, Hay River, asking him to come to wellsite for discussion of keeping cat here to arrive when train arrives.

Weather clear 30° above, thawing in daytime.

April 16th, 1952 -

D-7 cat train broken down again, sent Menzies Bombadier to help repairs, moving again at 8:00 P. M.

Crews working on general repairs, blocking up front of derrick and repairing guy lines.

Weather 40° above, during day, all snow soaking into muskey. No run off.

April 16th, 1952 - continued

Routledge returned from Providence at 7:30 P. M., reported much water on ice.

April 17th, 1952 -

D-7 cat train with Mills Lake equipment arrived at Deep Bay at 4:00 A. M. Unloaded same. Raised derrick with truck, hauled water from lake approximately 1300' distant, set deadmen, pump, picked up kelly and new 9" OSC₃, started digging rat hole at 3:45 P. M. Many boulders and gravel to 25', finished rat hole at 7:00 P. M., ran rat hole, pipe, straightened up derrick and spudded well at 8:30 P. M.

Mixed mud to counteract gravel and boulders.

Coring.

Rig operating okay, weather turning colder 15° above zero at midnight.

* * * * *

PROGRESS REPORT

on the

DRILLING, CORING and ABANDONMENT

of

K. W. T. DEEP BAY No. 1 WELL

Lat: 61° 16' North; Long: 116° 45' west

Northwest Territories

Compiled by: Jean Newsdale

Approved by: *B. J. Campbell*

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SCOPE

This report covers the drilling, coring and abandonment of the Northwest Territories Oils Ltd., N. W. T. Deep Bay No. 1 well, located by Lat. $61^{\circ} 16'$ North, Long. $116^{\circ} 45'$ West, in the Deep Bay Area, Northwest Territories.

All available ~~information~~ has been in-
cluded from the time the well was spudded, and
drilled or cored to completion or abandonment.

* * * * *

DATA PERTINENT TO DRILLING, CORING AND ABANDONMENT

Name of Company: Northwest Territories Oils Ltd.

Name of Well: N. W. T. Deep Bay No. 1

Location: Lat 61° 16' N; Long 116° 45' W.

Elevation: 510' approx. based on and assuming a surface elevation of Great Slave Lake of 495'. 519'

Surface Casing: Nil.

Formation Tests:

Test # 1 - 414' - 429' - open 1 1/4 hours. Recovered 125' dead mud, no oil or gas - mechanically satisfactory.

Test # 2 - Misrun.

Test # 3 - 417' - 500' - open 4 1/2 hours. Initial small blow, died in one hour. Recovered 200' drilling mud. Mechanically satisfactory.

Test # 4 - 621' - 665' - open 1/2 hour. Sulphur water to surface in 10 minutes. No oil, trace gas - Mechanically satisfactory.

Geological Markers:

by -	G. H. Killick	E - Log
Bay River Shale -	55'	
Simpson Shale -	110'	
Slave Point Detrital Limestone -	375'	
Slave Point Bed Rock Limestone -	426'	
Presqu'ille Formation -	628'	
Presqu'ille Dolomite -	942'	
Black Line -	1043'	

Total Depth: 1321'

Date Well Struck: April 17th, 1952.

Date Well Completed: May 2nd, 1952.

Date Well Abandoned: May 6th, 1952.

* * * * *

H. W. T. DEEP BAY NO. 1 WELLDAILY PROGRESS REPORT

Date	From	To	Footage	Remarks
<u>Apr. 10</u> to <u>Apr. 16</u>				Picked location with bulldozer and cleared same. Made road from Lake. Moved equipment received onto lease and spotted same with rig. Made mat for rig. Started digging shale pit and suction pit. Many large boulders encountered. Worked over motors and rig. Started rigging up, cribbing pits and digging dead-man holes and blocking up under front of derrick. Cleaned up generally and worked on motors.
<u>Apr. 17</u>	0	25	25	Raised derrick with truck, set deadman pump, picked up kelly and new 9" CSC ₃ . Dug rat hole for 3 1/4 hours encountering many boulders and gravel to 25', ran rat hole, pipe, straightened up derrick and spudded well at 8:30 P. M. Moved mud to counteract gravel and boulders. Drilled ahead on boulders for 3 1/2 hours.
<u>Apr. 18</u>	25	208	183	Mixed mud intermittently and worked on pump to clear debris. Picked up drill collar and drilled for 19 1/2 hours in boulders and shale. A survey showed: 1/2" @ 100'
<u>Apr. 19</u>	208	372	164	Continued drilling for 19 3/4 hours. Worked on pump for 1 1/2 hours. Waited on water, pump on truck broken and truck stuck. Circulated and drilled for 3 hours. Reamed hole and worked on pump for 1 hour. Connected pump, cleaned pump suction and waited for water. Thawed hose and drained pump. Made trip to ream each single to bottom. Changed bit after 38 1/4 hours at 372'. A survey showed: 1/2" @ 300'

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DAILY PROGRESS REPORT (Continued)

<u>Date</u>	<u>From</u>	<u>To</u>	<u>Footage</u>	<u>Remarks</u>
<u>Apr. 20</u>	372	413	41	Drilled ahead for 3 1/2 hours. Cleaned pump, circulated sample and dried same. Circulated to clean hole and bring up temperature of mud to 50°F, using Kerrick boiler and prepared to run casing. Welded shoe, collars, centralizers and scratchers on casing. Circulated to clean hole. Started rigging to run casing - 6:00 P.M. Casing started in hole - 7:00 P.M. Received orders not to run casing. Pulled out casing. Ran in with a 6 1/8 O.S.C. bit at 410' and drilled ahead for 1/2 hour.
<u>Apr. 21</u>	413	429	16	Circulated and heated mud to 50°F and waited on orders to core. Ran in with a 6 1/8" Truco diamond bit at 413'. Circulated and cleaned hole to bottom and cut core # 1. Hoisted core and for 5' cut recovered 4' 9" or 95%. Ran in again with diamond core bit and cored for 3 1/4 hours. Conditioned mud and hoisted core # 2. For 11' cut recovered 11' 3" or 100%. Made up tester, tester was hung up at 20', cleaned up. Prepared to run drill stem test.
<u>Apr. 22</u>	429	464	35	Test # 1 - 414.10 - 429.0 - Slave Point Limestone Hole diameter - 6 1/8" O.D. of packer rubber - 5 1/2" Length of anchor below packer - 14.90 Tester started in hole - 12:30 AM Tester on bottom - 2:00 AM Tester open - 3:04 AM Tester reset - 4:04 AM Tester closed - 4:19 AM Tester pulled loose - 4:20 AM Tester out of hole - 5:45 AM Packer set with - 5000# Packer pulled loose with - 5000#

DAILY PROGRESS REPORT (Continued)

Date	From	To	Footage	Remarks
<u>Apr. 22</u> (Cont'd)				There was a noticeable blow when the tool was opened and the mud level in the casing dropped 1/2 barrel (est.) when opening the tool. When the drill pipe was pulled, 125' (0.93 bbls.) of mud were recovered, with no oil or gas trace. Samples were examined but were ^{not} preserved and no pressure chart was run as not available with equipment. The test was considered to be mechanically satisfactory and was performed by Dowell Rental. Present at the test were G. H. Killick, A. J. Weber and crew, J. E. Routledge and C. G. Matthews. Laid tester down and ran in hole with 6 1/2" diamond bit. Drilled out boulders, circulated and conditioned mud, and cored for 9 1/4 hours. Hoisted Core # 3 and for 23' cut, 23' were recovered or 100%. Went in with diamond core bit and continued coring.
<u>Apr. 23</u>	464	500	36	Cored for 5 1/2 hours and hoisted core # 4. For 24' cut, 24' were recovered or 100%. Cored ahead for 4 1/2 hours and hoisted Core # 5. For 24' cut, 24' were recovered or 100%. Laid down core barrel, cleaned pump and made up tester. Circulated mud and ran in with drill stem tester. Test # 2-417.28' - 500.00' - Slave Point Limestone - Hole diameter - 6 1/8" O.D. of packer rubber - 5 1/2" Length of anchor below packer - 82.72 Tester started in hole - 2:15 PM Tester on bottom - 3:25 PM Tester opened - 4:22 P.M. & 4:24 P.M. Tester closed - 4:23 P.M. & 4:25 P.M.

DAILY PROGRESS REPORT (Continued)

Date	From	To	Footage	Remarks
<u>Apr. 23 (Cont'd)</u>				
				Tester pulled loose - 4:25 PM
				Tester out of hole - 5:15 PM
				Packer set with - 4000'
				Packer pulled loose with - 6000'
				There was a noticeable blow when the tool was opened and the mud level in the casing dropped an estimated 2 barrels. There was no gas flow, when the pipe was pulled 270' (2.0 bbls.) of mud were recovered. Samples were examined, but not preserved and no pressure was available. The test was considered mechanically unsatisfactory as the packer failed because there was not sufficient weight to set properly. The test was performed by Dowell Rental. Present at the test were G. H. Killick, J. E. Routledge and C. M. Spornitz and crew.
				Pulled out of hole and changed shatter disc and added drill collar. Ran in again with tester. Drill Stem Test # 3 - 417.28 - 500.00' - Slave Point Limestone.
				Hole diameter - 6 1/8"
				O. D. of packer rubber - 5 1/2"
				Length of anchor below packer - 108.05
				Tester started in hole - 5:40 PM
				Tester on bottom - 6:10 PM
				Tester opened - 6:20 PM
				Tester reset - 6:22 PM
				Tester closed - 6:21 PM
				Tester pulled loose - 10:51 PM
				Tester out of hole - 12:25 AM
				April 24th
				Packer set with - 5,800'
				Packer pulled loose with - 7,900'
				There was a noticeable blow when the tool was opened, air was displaced and the mud level in the casing dropped 1/2 bbl. (est.) The gas blow was nil. When the drill pipe was pulled, 200' (1.4 bbls.) mud were recovered.

DAILY PROGRESS REPORT (Continued)

7

Date	From	To	Footage	Remarks
<u>Apr. 23</u> (Cont'd.)				Samples were examined by C. G. Matthews and G. H. Killick. No pressure chart was available. The test was considered to be mechanically satisfactory and was performed by Dowell Rental. Present at test was C. G. Matthews. Note: A drill collar was added to the testing string to allow more weight to be applied to packer.
<u>Apr. 24</u>	500	567	67'	Laid tester down, and ran in hole with 6 1/8" diamond core bit. Reamed to bottom and circulated for 2 hrs. Cored ahead for 4 1/2 hours and hoisted Core # 6-for 21' cut, recovered 21' or 100%. Ran in again and cored for 5 1/2 hours and hoisted Core # 7. For 25' cut, 25' were recovered to 100%. A survey showed: 1/4° @ 530'. Continued coring.
<u>Apr. 25</u>	567	629	62'	Cored ahead for 3/4 hours. Hoisted Core # 8 and examined it. For 24' cut, 24' were recovered or 100%. Ran in again with core barrel and circulated 15 minutes to condition before coring. Cored for 6 hours then hoisted Core # 9 and for 25' cut, recovered 25' or 100%. Returned to bottom, circulated and cored ahead for 6 hours. When Core # 10 was hoisted, for 25' cut, 25' were recovered or 100%. Ran in and continued to core for 1 3/4 hours.

DAILY PROGRESS REPORT (Continued)

8

<u>Date</u>	<u>From</u>	<u>To</u>	<u>Footage</u>	<u>Remarks</u>
<u>Apr. 26</u>	629	725	96	Cored for 3 1/2 hours and hoisted Core # 11. For 25' cut, 25' were recovered or 100%. Ran in with core barrel and circulated and cored for 4 1/2 hours. Pulled core # 12 out and for 19' cut, 19' were recovered. Laid down core barrel and prepared to run drill stem test. Drill Stem Test # 4 - 621.46 - 665.50 Slave Point Limestone Hole diameter - 6 1/8" O. D. of packer rubber - 5 1/2" Length of anchor below packer - 43.84" Tester started in hole - 1:50 PM Tester on bottom - 2:45 PM Tester opened - 2:50 PM Tester closed - 3:20 PM Tester pulled loose - 3:20 PM Tester out of hole - 4:40 PM Packer set with - 6000# Packer pulled loose with - 8000#

There was a good initial blow increasing for 7 minutes and then diminished to zero in total elapsed time of 10 minutes with a sulphur smell. When the pipe was pulled loose 90' (.67 bbls.) of gassy mud and 575' (4.26 bbls.) gassy water were recovered. The samples were stored at the rig by C. Matthews. No pressure bomb was available. The test was considered to be mechanically satisfactory and was performed by Dowell Rental. Present at test were G. H. Killick, C. M. Spornitz & crew, J. E. Routledge and C. G. Mathews.

Laid tester down and ran in hole with 6 1/8" OSC bit. Conditioned mud for 1/2 hour, then drilled ahead for 4 1/2 hours.

DAILY PROGRESS REPORT (Continued)

9

Date	From	To	Footage	Remarks
<u>Apr. 27</u>	725	915	190	Drilled on bottom for 9 3/4 hours then pulled out to change bit. Hooked up water line to slough for pumping to rig. Changed bit at 859' after 14 1/4 hours. Ran in hole to clean boulders, bridges and condition mud. Drilled ahead for 4 hours.
<u>Apr. 28</u>	915	1058	143	Continued drilling for 10 hours then changed a new 6 1/8" OSC bit after 14 hours at 1021'. Circulated and conditioned mud. Drilled ahead for 8 1/2 hours. A survey showed: 0° @ 900'
<u>Apr. 29</u>	1058	1150	92	Drilled ahead for 9 3/4 hours, then ran a new 6 1/8" OSC bit at 1098' after 18 1/4 hours. Reamed to bottom for 1 hour then continued drilling for 8 1/2 hours.
<u>Apr. 30</u>	1150	1257	107	Drilled on bottom for 9 hours, changed bit after 17 hours at 1206'. Cleaned to bottom, circulated and continued drilling for 8 hours. A survey showed: 1/4° @ 1200'
<u>May 1</u>	1257	1314	57	Continued drilling for 11 hours. Pulled out of hole to core and changed to a 6 1/8" Trucco diamond bit at 1300' after 19 hours - bit footage. Reamed to bottom for 3 1/4 hours, then cored for 3 1/4 hours. Granted permission to abandon but delayed until cat repairs are completed.
<u>May 2</u>	1314	1321	7	Cored ahead for 2 1/4 hours. Core # 13 was hoisted and for 20' cut, 20' were recovered or 100%. Broke down core barrel and cleaned up around rig. Worked over motors, and prepared to abandon well. Waited for cat repairs.
<u>May 3</u>	1321			Waited on cat repairs. Worked on and around rig. Shipped cores to Edmonton and samples to Calgary.

DAILY PROGRESS REPORT (Continued)

10

<u>Date</u>	<u>From</u>	<u>To</u>	<u>Footage</u>	<u>Remarks</u>
<u>May 4</u>	1321			Waited on cat repairs.
<u>May 5</u>	1321			Cat repair parts arrived, worked on cat.
<u>May 6</u>	1321			Repaired cat and ran abandonment plugs as follows: Plug # 1 - 65' to 40' with 16 sacks cement. Plug # 2 - 20' to surface, with 14 sacks cement. Installed welded steel protector plate on top of casing. Filled cellar, dismantled rig and equipment and lowered derrick.

SURVEY RECORD

<u>Date</u>	<u>Depth</u>	<u>Deviation</u>
April 18/52	100'	1/2°
April 19/52	300'	1/2°
April 24/52	530'	1/4°
April 28/52	900'	0°
April 30/52	1200'	1/4°

DRILLING MUD RECORD

Date	Depth	Mud Wt. #/U.S. Gal.	Visc.	Gel.	H ₂ O Loss cc.	Filter Cake 1/32"	pH	Additives
Apr. 17	25		35	38				
	18 35	9.9	45	53	9.0	2/32	7	2000# gel.
	18 120	10.2	46	54				250# gel.
	18 208	10.2	46	54	9	2/32	7	200# gel water
Apr. 19	308	10.2	48	56	9	2/32	7	
	19 340	10.2	58	70				
	19 372	10.2	65	75	9	2/32	8.5	
Apr. 20	410	10.2	50	58				
	20 410							
	20 413	10.2	48	56	9	2/32	8.5	
Apr. 21	Circulating							
	21 418	10.2	43	47				
	21 429	10.3	44	49	9	2/32	8	
	22 429	10.4	46	52				
	22 441	10.4	53	58				400# gel, 50# Lo Vis.
	22 464	10.4	50	57				
	23 490	10.4	48	54	11.0	2/32	8.0	
	23 500	10.4	43	49	11.0	2/32	8.0	600# gel.
	23 500	Testing						
Apr. 24	520	10.4	48	54	13.0	2/32	8.0	
	24 546	10.4	47	52	13.0	2/32	8.0	
	24 567	10.4	50	56	13	2/32	8.0	
Apr. 25	584		46	52	12	2/32	8.0	150# gel.
	25 608	10.4	50	57				

DRILLING MUD RECORD (CONT'D)

Date	Depth	Mod Wt.	Visc.	Gel.	cc.	1/32"	pH	Additives
		# U.S. Gal.						
Apr. 25	629	10.4	52	60				
26	648	10.4	50	56	13	2/32	8.0	
26	665	10.4	50	56				
26	725	10.4	56	66				
Apr. 27	829	10.4	60	68	10.0	2/32	8.5	
27	859	10.3	60	68				
27	915	10.1	48	56	18	2/32	8.0	200# Gel, 50# Lo-Vis.
Apr. 28	1001	10.1	48	54	18	2/32	8.0	
28	1026	10.2	50	56				100# Lo-Vis 200# Gel
28	1056	10.4	50	56				
Apr. 29	1087	10.4	52	58				
29	1104							
29	1150	10.4	49	54	18	2/32	8.5	
Apr. 30	1190	10.4	50	56	15	2/32	8.0	
30	1215	10.6	50	56	20	2/32	8.0	
30	1257	10.6	52	58				
May 1	1290	10.8	52	58	22	2/32	8.5	
1	1301							
1	1314	10.9	50	56	24	2/32	8.5	
May 2	1321	10.8	55	63	24	2/32	8.5	

CORE RECORD

Core No.	From	To	Ft. Cut	Ft. Rec.
1	413	418	5'	4' 9"
2	418	429	11'	11' 3"
3	429	452	23'	23'
4	452	476	24'	24'
5	476	500	24'	24'
6	500	521	21'	21'
7	521	546	25'	25'
8	546	570	24'	24'
9	570	595	25'	25'
10	595	620	25'	25'
11	620	645	25'	25'
12	645	665	19'	19'
13	1301	1321	20'	20'

BIT RECORD

Date	Bit #	Size	Type	Pump(Free3. RPM)	Wt. on Bit M lbs.	RPM	Feet Drilled	Hr. on Bottom	Depth	Formation	Cond.	Remarks
Apr.17/52	1A	9	OSC ₃		58	all	80	372	38 1/4	372		Dull
19/52	2A	9	OSC ₃	75	58	5	80	38	3 1/2	410		OK
20	1	6 1/8	OSC	50	56	5	80	3	1/2	413		OK
21	2	6 1/8	Truco Diam.	50	56	5	70	252	58 3/4	665		OK
26	3	6 1/8	OSC	100	58	7	120	194	14 1/4	859		Dull
27	1 RR	6 1/8	OSC	100	57	7	120	162	13 1/2	1021		Dull
28	4	6 1/8	OSC	100	57	7	120	77	18 1/4	1098		Dull
29	5	6 1/8	OSC	100	57	8	120	108	17	1206		Dull
30	6	6 1/8	OSC	100	56	8	120	94	19	1300		Dull
May 1	2 RR	6 1/8	Truco Diam.	100	56	5	70	20	5 1/2	1320		Fair

* * * * *

NEW SUPERIOR OILS OF CANADA LIMITED

DRILLSTEM TESTS RUN

DST # 1 -	414 - 429	1-1/4 hrs.	Rec. 125' dead mud. No oil or gas.
DST # 2 -			Misrun.
DST # 3 -	417 - 500	4-1/2 hrs.	Initial small blow, died in 1 hr. Rec. 200' drilling mud.
DST # 4 -	621 - 665	1/2 hr.	Sulphur water to surface in 10 minutes. No oil. Trace gas.

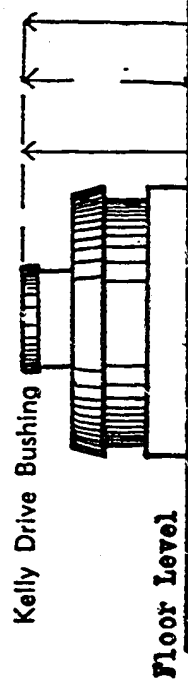
CASING REPORT

N. W. T. DEEP HAY # 1

NAME OF WELL

April 20th, 1952.

DATE
Stewart & Lloyd



Make of Casing
Size 7" O. D.
Weight 20 lb.
No. of Threads 8 rd.
Range 2
Grade J-55

Make and Type of Casing Shoe B. for Float Welded on? **yes**
Make and Type of Collar Baffle Welded on? **no**
Centralizers 1 at 384

Welding—Electric Acetylene **x**
No. of Joints Welded 2
Welding Co. General Petroleum of Canada Ltd.
Operator D. Weber
Scratchers at 392-383-378-370-365-355

Calcium Chloride Added
Aquagel added
Cementing Co.
Cementer
Helper
Drive Bushing Elevation

Distance Kelly Drive Bushing to Bottom Cellar Ft.
Distance Top of Casing Landed Above Bottom Cellar Ft.
Distance Top of Casing Landed Below Kelly Drive Bushing 7.52 Ft.
Total Amount of Casing Used 419.31 Ft. + Ldg. Jt. 28.39 Ft. or Cut-off
Total Amount of Casing Left in Hole 390.92 Ft.
Depth of Shoe Below Drive Bushing 398.44 Ft.
Time Rigging up to Run Casing 3 Hrs.
Time Casing Started in Hole 7:00 P. M.
Time Running Casing Orders received to suspend 2 Hrs.
Time Started Circulating M.
Time Stopped Circulating M.
Time Started Cementing M.
Time Cement in Pipe M.
Time Plug on Bottom M.
Plug Measured in to by (Wire Line, displacement with Bbls, bumped float Collar.)
Bumped on Collar Plate with P.S.I.
Number of Sax Cement Used Sax
Hours Cement to Set Hrs.
Method of Cementing
Cement Returns? Yes or No
Casing Landed in Clamps, Casinghead, Casing Suspender (State Make)

REMARKS: Orders received not to run casing. Pulled out and laid down same.

Superior Oils of Canada Limited

DRILL STEM TEST REPORT

18

April 22nd, 1952.

Name of Well W. W. T. DEEP HAY # 1 Test No. 1

Testing Company Dowell (Rental) Operator General Petroleum

Size Drill Pipe 3 1/2 inches O.D. O. D. of Packer Rubber 5 1/2" Size Choke 3/8"

Type of Packer: Anchor Type x Hookwall

Formation Tested Slave Point Limestone

Depth of Well 429'

Zone Tested: From 414.10' To 429.0'

Time Waiting on Tester Nil

Mud: API Viscosity 46 Gel - Weight 10.4

Time Tester started in hole 12:30 AM

" " On Bottom 2:00 AM

" " Opened 3:04 AM

" " Closed 4:04 AM

" " Pulled Loose 4:19 AM

" " Out of Hole 4:20 AM

Weight: Set on Packer 5 Thousand Lbs.; To pull Packer Loose 5 Thousand Lbs.

No. Lines 6 Size Line 1"

When tool was opened: Was blow noticeable, Yes x No ; Air displaced, Yes No

Did mud level drop in casing; Yes x When opening tool 1/2 bbl. est. No

Gas Flow: Nil Thousand cf/day. Measured with Pitot tube by Nil

Estimated by

Size riser: 2 inches, I.D.; Was flare lit, Yes No x ; Length flame - feet

Total fluid in drill pipe: 4 1/2 Stands 125 Feet 0.93 Bbls.

Oil in drill pipe { Gassy } Nil Stands Feet Bbls.

Mud in drill pipe { Gassy } 4 1/2 Stands Feet 0.93 Bbls.

Water in drill pipe { Gassy } Nil Stands Feet Bbls.

Note: Samples of Oil and Water must be taken.

Samples sent to None preserved By

Water: Salty, Sulphur, Brackish, Fresh. (Cross out terms that do not apply).

Remarks: Mud taken as sample showed no trace of oil or gas.

Put additional remarks or other information on back of sheet.

Present at test: G. H. Killick, Weber & Gray, J. E. Knowledge

Do you consider that test was satisfactory? Yes No

Does chart show normal operation of tester? Yes No

Pressure on chart (Hydrostatic) before tester opened

" " (Flowing) with tester open p.s.i. (shut in) p.s.i.

Is chart attached: Yes No x Who has it None taken.

Superior Oils of Canada Limited
DRILL STEM TEST REPORT

19

Name of Well N. W. T. Deep Bay # 1 Date April 23rd, 1952.
Testing Company Dowell (Nental) Operator General Petroleum of Canada

Size Drill Pipe 3 1/2 inches O.D. O. D. of Packer Rubber 5 1/2" Size Choke 3/8"
Type of Packer: Anchor Type 2 Hookwall
Formation Tested Slave Point Limestone

Depth of Well 500'

Zone Tested: From 417.28' To 500.00'

Bottom of Rubber at 417.28 feet Time Waiting on Tester Nil

Mud: API Viscosity 48 Gel 56 Weight 10.4
5" perforations 3/16" Time Tester started in hole 2:15 PM

3" perforations 3/16" " " On Bottom 3:25 PM

" " " " Opened 4:22 PM & 4:24 PM

2" perforations 3/16" " " Closed 4:23 PM & 4:25 PM

" " " " Pulled Loose 4:25 PM

Depth 500 feet " " Out of Hole 5:15 PM

Weight before 4200# Weight after 5200#
Weight: Set on Packer 4 Thousand Lbs.; To pull Packer Loose 6 Thousand Lbs.

No. Lines 6 Size Line 1"

When tool was opened: Was blow noticeable, Yes x No.; Air displaced, Yes No

Did mud level drop in casing; Yes x 2 bbls out No

Gas Flow: Nil Thousand cf/day. Measured with Pitot tube by

Estimated by

Size riser: inches, I.D.; Was flare lit, Yes No; Length flame feet

Total fluid in drill pipe: 9 Stands 270 Feet 2.0 Bbls.

Oil in drill pipe {Gassy Dead} Nil Stands Feet Bbls.

Mud in drill pipe {Gassy Dead} 9 Stands 270 Feet 2.0 Bbls.

Water in drill pipe {Gassy Dead} Nil Stands Feet Bbls.

Note: Samples of Oil and Water must be taken.

Samples sent to None taken By

Water: Salty, Sulphur, Brackish, Fresh. (Cross out terms that do not apply).

Remarks: Packer failed, not sufficient weight to sit properly.

Put additional remarks or other information on back of sheet.

Present at test: O. H. Killick, J. H. Benthley, Spornitz A crew, G. G. Matthews

Do you consider that test was satisfactory? Yes No x

Does chart show normal operation of tester? Yes No

Pressure on chart (Hydrostatic) before tester opened p.s.i.

" " (Flowing) with tester open p.s.i. (shut in) p.s.i.

Is chart attached: Yes No x Who has it None taken

Superior Oils of Canada Limited

DRILL STEM TEST REPORT

20

Name of Well **N. W. T. Deep Bay # 1** Test No. **3**

Testing Company **Dowell (Rental)** Operator **General Petroleum of Canada Ltd.**

Size Drill Pipe **3 1/2"** O. D. of Packer Rubber **5 1/2"** Size Choke **3/8"**

Type of Packer: Anchor Type **X** Hookwall

Formation Tested **Slave Point Limestone**

Depth of Well **500.00'**

Zone Tested: From **417.23'** To **500.00'**

Time Waiting on Tester **NIL**

Mud: API Viscosity **48** Gel **56** Weight **10.4**

Time Tester started in hole **5:40 PM**

" " On Bottom **6:10 PM**

" " Opened **6:20 PM Reset 6:22 PM**

" " Closed **6:21 PM**

" " Pulled Loose **10:51 PM**

Depth **500.00** feet " " Out of Hole **12:25 AM April 24/52**

Weight: Set on Packer **5000#** Weight after **6800#** To pull Packer Loose **7** Thousand Lbs.

No. Lines **6** Size Line **1"**

When tool was opened: Was blow noticeable, Yes **X** No.....; Air displaced, Yes **X** No.....

Did mud level drop in casing; Yes **X 1/2 bbls. lost.** No.....

Gas Flow: **NIL** Thousand cf/day. Measured with Pitot tube by.....

Estimated by.....

Size riser: **2"** inches, I.D.; Was flare lit, Yes..... No **X**; Length flame..... feet

Total fluid in drill pipe: **6 1/2** Stands **200** Feet **1.4** Bbls.

Oil in drill pipe { Gassy } **NIL** Stands Feet Bbls.

Mud in drill pipe { Gassy } **6 1/2** Stands **200** Feet **1.4** Bbls.

Water in drill pipe { Gassy } **NIL** Stands Feet Bbls.

Note: Samples of Oil and Water must be taken.

Samples sent to **Examined only** By **Matthew & Killick**

Water: Salty, Sulphur, Brackish, Fresh. (Cross out terms that do not apply).

Remarks: **Added drill collar to testing string to allow more weight.**

Put additional remarks or other information on back of sheet.

To be applied to packer, procedure satisfactory.

Present at test: **G. G. Matthew, G. H. Killick**

Do you consider that test was satisfactory? Yes **X** No.....

Does chart show normal operation of tester? Yes..... No.....

Pressure on chart (Hydrostatic) before tester opened..... p.s.i.

" " (Flowing) with tester open..... p.s.i. (shut in)

Is chart attached: Yes..... No **X** Who has it **No chart available**

Superior Oils of Canada Limited

DRILL STEM TEST REPORT

Date..... April 26, 1952.

Name of Well	M. W. T. Deep Bay # 1	Test No
		4

Testing Company	Dovell (Rental)	Operator General Petroleum of Canada, Ltd.
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Size Drill Pipe	O. D. of Packer Rubber	Size Choke
5 1/2"	3/8"	

3 1/2 inches O.D. Type of Packer: Anchor Type **3** Hookwall

13,30 # / foot Formation Tested Slave Point Limestone

Depth of Well **665.50'**

Zone Tested: From **621.46°** To **665.50°**

at 621.46 feet

Time Waiting on Tester **N11**

Mud: API Viscosity **52** Gel **58** Weight... **10.4**

Time Tester started in hole 1:50 PM.....

" " On Bottom 2:45 PM

2:50 PM

3:20 PM

" " Pulled loose 3:20 PM

North
665.50
" "
Out of Hole
4-840 PM

" " Out of Hole
4-9-60 PM

Weight: Set on Packer	6		Thousand Lbs.;
Weight before setting	6500#		
Weight after	7800#		
To pull Packer Loose	8		Thousand Lbs.

Weight before setting **6500#** Weight after setting **7500#**
 Weight: Set on Packer **6** Thousand Lbs.; To pull Packer Loose **8** Thousand Lbs.

No. Lines	6	Size Line	10
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When tool was opened: Was blow noticeable, Yes.....No.....; Air displaced, Yes.....No.....

Did mud level drop in casing; Yes No **X**

Gas Flow:..... **W11**..... Thousand cf/day. Measured with Pitot tube by

Trace strong K₂S odor.

2 Size riser: inches, I.D.: Was flare lit, Yes **2** No **2**; Length flame feet

Total fluid in drill pipe: 22...including test-stands	665.....	Feet	4.93.....	Bbls.
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Oil in drill pipe	{ Gassy Dead }		Stands	Feet ..	few speaks Bbls.
------------------------	-------------------	-------	--------------	---------	----------------------------------

Mud in drill pipe .. { Gassy }
 { Dead }
 3
 Stands 90 Feet 67 Bbls

Water in drill pipe	{ Gassy Dead }	19	Stands	575	Feet	4,26	Bbls

Note: Samples of Oil and Water must be taken.

Samples sent to _____
 Stored with Rig Deep Bay # 1 By Matthews. Later analysed by Chemical

Water: Salty, Sulphur, Brackish, Fresh. (Cross out terms that do not apply).

Good inflated blow, increasing for 7 minutes then diminished to zero in total.
Remarks: elapsed time 10 minutes. With sulphur... slowly... sulphur water at surface then pulled
10050.
Put additional remarks or other information on back of sheet.

Present at test: G. W. Killick, Sportsman & crew, Doubledodge, Matthews

Do you consider that test was satisfactory? Yes..... No.....

Does chart show normal operation of tester? Yes..... No

Pressure on chart (Hydrostatic) before tester opened p.s.i.

"	"	(Flowing) with tester open	p.s.i. (shut in)	p.s.i.
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	Yes	No	Who has it?
Is chart attached:	Yes	No	Who has it?

DIAMOND CORE DESCRIPTIONSlave Point Ls.

- Core # 1 413 - 18 Rec. 4' 9"
- Ls. - Greyish-brown, micro-crystalline, tight with irregular patches detrital up to one ft. in length, of brown coralline, oil saturated tight ls. contains branching coral, crinoid stems and brachiopods, all poorly preserved. Some vertical fracturing. The coral zones bled considerable live brown oil for 24 hours. Approximate gravity 30° A.P.I. Few stylolitic partings of pyrobitumen and brownish black bituminous shale.
- Core # 2 418 - 29 Rec. 11' 2"
- Detrital 8'-Ls. detrital as above.
- Bedrock 3' 2" - Ls. Greyish-buff to light brown, micro-crystalline dense to lithographic, slightly argillaceous in part, tight, much fossil material replaced with calcite, few brachiopods, odd Stringocephalus burtini? Some oil bleeding from bands of poor porosity.
- Core # 3 429 - 452 Rec. 23'
- Ls. as above, flat bedded. Oil bleeding from paper thin bands up to bands of one ft. of poor porosity. Few coral bands in lower part of core with fair porosity and good oil saturation. Porosity in this core generally is poor, permeability is probably better than appears allowing the evident penetrating of oil in the saturated bands.
- Core # 4 452 - 76 Rec. 24'
- Ls. as above, few vertical fractures and stylolitic partings. Oil bleeding as in Core # 3.
- Core # 5 - 476 - 500 Rec. 25'.
- Ls. as above with increase in amount of coral material and stylolitic partings, old small vug lined with dolomite crystals. 1" green shale in stylolitic parting at 478". Salty taste, strong around vertical fractures.
- Core # 6 - 500 - 21 Rec. 21'.
- Ls. as above, 1" green shale parting at 508", few zones of coral material and oil staining.

DIAMOND CORE DESCRIPTION (Continued)

- Core # 7 - 521 - 46 - Rec. 25'
- 2' Ls. - Greyish-buff, micro-crystalline, tight, with calcite infilling.
- 6" Ls. - detrital, dark brown, micro-crystalline ls. and black bituminous shale, some slickensiding.
- 22' 6" Ls. - greyish-buff, tight with zones of medium chocolate brown argillaceous limestone containing few brachiopods. Odd zone corals. Wide vertical fractures infilled. Spotty zones poor oil staining.
- Core # 8 - 546 - 70 - Rec. 25'
- Ls. - Greyish-buff and medium chocolate brown limestone as above. Core is highly fractured vertically, some infilling. Scattered oil staining, top 2' fairly well stained.
- Core # 9 - 570 - 95 - Rec. 25' 6".
- 5' Ls. - Greyish-buff, micro-crystalline, odd stylolitic parting, tight.
- 5' Ls. - Greyish-buff and medium brown, micro-crystalline tight limestone, some poor oil staining.
- 8' Ls. - as above with much coral material in zones, some thin shale partings.
- 2' Ls. - Greyish-buff, micro-crystalline limestone.
- 5' 6" Ls. - Brown, micro-crystalline to argillaceous, tight,
- Core # 10 - 595 - 620 Rec. 25'
- Ls. - Greyish-brown, micro-crystalline to dense with bands of grey argillaceous limestone and some greyish-buff micro-crystalline limestone. 3' band of dark grey argillaceous limestone at 609' to 612'. 3' band grey and brown detrital limestone 617' to 620'.
- Core # 11 - 620 - 45 Rec. 25'.
- 4' Ls. - Greyish-buff to greenish-grey, micro-crystalline to argillaceous, tight.

DIAMOND CORE DESCRIPTION (Continued)

Core # 11 - 620 - 45 - Continued

- 2' Ls. & Sh. - Dark grey, dense limestone with apple green waxy non-calcareous shale and dark grey stylolitic shale partings.
- 1' Ls. - Buff, micro-crystalline, tight limestone with vertical fracturing and slowly bleeding oil.
- 1' Ls. - Grey, argillaceous, tight with stylolitic partings.

Top 2nd Porous Zone - 628'

- 2' Ls. - Buff, micro-crystalline, poor porosity, bleeding oil.
- 2' Ls. - Greyish-brown, micro-crystalline to dense, with many stylolitic partings.
- 3' Ls. - Buff, coral reef, large "wheat grain" appearance, good porosity bleeding little oil, water appearance, tastes salty, sulfur odor.
- 10' Ls. - Buff, highly fractured, good vuggy porosity, appears water bearing, tastes salty, much coral material, very little bleeding oil.

Core # 12 - 645 - 65½

Rec. 20" 6".

- Ls. - Greyish-buff, micro-crystalline, vuggy porosity large holes (fossil castes) highly fractured, especially bottom 3'. Contains stromatopora and corals. Some bleeding oil, appears water bearing.

Core # 13 - 1301 - 1321' - Rec. 20"

- Ls. - Argillaceous with dolomite and anhydrite.

* * * * *

SAMPLE DESCRIPTIONS

30 - 55 Sand Lake beach sand with small recent polycypods and gastropods.

TOP HAY RIVER SHALE - 55'

55 - 60 Sand & Shale Sand as above with green highly calcareous shale.

60 - 80 Shale & Limestone Shale as above with some brownish-black bituminous shale and some dark greyish-brown slightly argillaceous limestone.

80 - 100 Shale Greyish green- highly calcareous shale.

100 - 110 Shale As above with some dark grey and trace dark bituminous shale, few pieces smashed up crinoid hash.

TOP SIMPSON SHALE - 110'

110 - 140 Shale Medium brown, highly calcareous, somewhat fissile shale containing micro-crystal faces giving it a micro-micaceous appearance. Little green and dark grey shale as above.

140 - 150 Shale Green calcareous, interbedded with black flecked grey calcareous shale.

150 - 160 Shale Grey calcareous shale containing tentaculites and some brown calcareous shale.

160 - 170 Shale Grey calcareous with tentaculites, some pieces bituminous.

170 - 180 Shale As above with some brownish-black bituminous shale.

180 - 190 Shale Greyish-green calcareous shale with little of above shale.

190 - 330 Shale Green highly calcareous with little interbedded grey shale.

330 - 330 Shale As above with increasing amount grey shale.

330 - 375 Shale Dark grey calcareous shale with little green calcareous shale.

TOP SLAVE POINT DETRITAL LIMESTONE- 375'

375 - 380 Limestone Greenish-grey, micro-crystalline, dense to argillaceous, tight.

380 - 400	Limestone	As above with light to medium brown micro-crystalline oil stained limestone. Poor porosity.
400 - 10	Limestone	As above with much coralline and crinoidal material. Irregularly oil saturated, some pin point porosity.
410 - 13	Limestone	As above with some green shale and pyrite.
413 - 665		Diamond cored - no samples.
665 - 75	Limestone	Greyish-buff, micro-crystalline, some oil staining and some green waxy shale. Sample largely surface cavings following D. S. T. # 4.
675 - 900	Limestone	As above, becoming micro-granular with some buff to grey clastic limestone, good oil saturation, trace to fair porosity. Much coral and other fossil material. Some greenish-grey micro-crystalline tight limestone. Much dark grey highly calcareous shale, probably cavings. Samples largely cavings. Much green calcareous shale cavings at 900'.
900 - 925	Limestone	Pale buff to grey, some with greenish caste, clastic limestone some buff, micro-granular partially oil stained limestone with trace to fair porosity.
925 - 42	Limestone	Whitish cream, chalky, mostly coral or bryozoan limestone.
TOP PRESQUILLE DOLOMITE - 942'		
942 -1015	Dolomite	Dark brown, finely crystalline, sucrose texture, tight. Few clear, saddle faced crystals of dolomite.
1015 -1043	Dolomite	As above.
TOP BLACK LIME - 1043'		
1043-1095	Limestone	Brown to dark chocolate brown, argillaceous similar to Black Lime of Turner Valley.
1095-1245	Limestone	As above, becoming quite fossiliferous, brachiopods, mainly, poorly preserved. <u>Change 1243.</u>
1245-1255	Limestone	As above, predominant changing to limestone, mostly dense, buff and brown, clastic dolomite, trace porosity, no staining.

SAMPLE DESCRIPTION (Continued)

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1255-1265	Limestone As above with anhydrite.
1265-1275	Limestone As above, no porosity, anhydrite.
1275-1285	Limestone As above, trace porosity, anhydrite.
1285-1295	Limestone As above, with anhydrite.

* * * * *

New Superior Oils of

Operator **Canada Limited** Field **Northwest Territories** Date **May 12, 1952**

Well No.	Northwest Territories Deep Bay No. 1	Location
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Formation	Slave Point Limestone	Depths	413.0'-665.0'	Lab. No.	3206
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Footage of Slave Point Limestone formation cored	252.5'
Feet of core received at laboratory for analysis	255.9'
Feet of extra core	0.7'
Number of representative samples selected for analysis	38
Feet of core represented by samples	87.6'
Feet of fractured core compared (to tested samples)	93.2'
Feet of dense sections not represented	75.1'
Feet of badly fractured sections not represented	0

SUMMARY OF REPRESENTED SECTIONS.

Footage of core: (1) $\frac{\text{represented}}{\text{received}} = \frac{180.8}{255.9}$; (2) $\frac{\text{represented}}{\text{cored}} = \frac{180.8}{252.5}$

Weighted average porosity	3.63 %
Weighted average radial permeability on 160.9 feet	21.69 md.
Weighted average vertical permeability	4.36 md.
Weighted average maximum permeability	25.12 md.
Porosity Feet	657.20
Maximum porosity	8.0 %
Minimum porosity	0.6 %
Maximum radial permeability	1000 + md.
Minimum radial permeability	0.007 md.
Maximum vertical permeability	24 md.
Minimum vertical permeability	0.004 md.
Core with maximum permeability of 10.0 md. or greater.	
Footage	56.0'
Weighted average porosity	3.09 %
Weighted average radial permeability on 36.6 feet	106.6 md.
Weighted average vertical permeability	13.95 md.
Porosity Feet	172.83
Core with maximum permeability between 1.0 and 9.9 md. inclusive	
Footage	4.7'
Weighted average porosity	3.39 %
Weighted average radial permeability	3.22 md.
Weighted average vertical permeability	0.173 md.
Porosity Feet	15.94
Core with maximum permeability less than 1.0 md.	
Footage	120.1'
Weighted average porosity	3.90 %
Weighted average radial permeability ... on 119.6 Feet	0.054 md.
Weighted average vertical permeability	0.049 md.
Porosity Feet	468.43

FULL DIAMETER CORE STUDY REPORT

New Superior Oils of
Operator Canada Limited.....Field Northwest Territories.....Date May 12, 1952.....

Well No. Northwest Territories Deep Bay No. 1.....Location.....

Formation Slave Point Limestone Depths 413.0'-665.0'.....Lab. No. 3206.....

Sample Number	Midpoint of Sample in Ft.	Representative of Feet	Footage Rep.	Core Wt. Gms.	Permeability md. Vertical	Radial	% Porosity	Bulk Density	Matrix	Description
Core Number 1			413'-418'	Recovered 4.8'						
Similar to No. 12	413.0-415.4	2.4	---		0.03	0.11	3.1	---	---	VC I S
No Sample	415.4-415.7	0.3	---		---	---	---	---	---	D
Similar to No. 6	415.7-416.5	0.8	---		0.11	0.24	5.6	---	---	I S
Similar to No. 10	416.5-417.8	1.3	---		0.04	0.01	5.0	---	---	I S
Missing		0.2	---		---	---	---	---	---	---
Core Number 2			418'-429'	Recovered 11.0'						
No Sample	418.0-418.6	0.6	---		---	---	---	---	---	D
6	421.1	418.6-421.5	2.9	901	0.11	0.24	5.6	2.52	2.67	I St S
7	423.4	421.5-423.6	2.1	914	0.22	0.33	6.6	2.50	2.67	I S
8	425.1	423.6-425.5	1.9	978	0.11	0.46	6.6	2.48	2.66	I S
Similar to No. 12	425.5-426.8	1.3	---		0.03	0.11	3.1	---	---	I S
10	428.6	426.8-429.0	2.2	705	0.04	0.01	5.0	2.55	2.69	I S
Core Number 3			429'-452'	Recovered 22.7'						
Similar to No. 10	429.0-430.0	1.0	---		0.04	0.01	5.0	---	---	I S
12	430.5	430.0-431.1	1.1	932	0.03	0.11	3.1	2.57	2.66	I S
Similar to No. 12	431.1-431.5	0.4	---		0.03	0.11	3.1	---	---	VC I S
Similar to No. 10	431.5-434.0	2.5	---		0.04	0.01	5.0	---	---	I S
14	436.1	434.0-437.0	3.0	1160	0.04	0.007	2.8	2.58	2.65	VC I St S
16	440.1	437.0-440.5	3.5	1319	0.07	0.03	5.0	2.55	2.68	I S
Similar to No. 10	440.5-441.0	0.5	---		0.04	0.01	5.0	---	---	I S
Similar to No. 16	441.0-442.7	1.7	---		0.07	0.03	5.0	---	---	I S
Similar to No. 19	442.7-443.0	0.3	---		0.01	0.008	3.2	---	---	I S
No Sample	443.0-443.7	0.7	---		---	---	---	---	---	D
19	443.9	443.7-445.5	1.8	902	0.01	0.008	3.2	2.56	2.64	I S
21	446.1	445.5-448.4	2.9	771	0.07	0.04	8.0	2.50	2.72	I S
Similar to No. 29	448.4-451.7	3.3	---		0.08	0.05	4.9	---	---	I S
Missing		0.3	---		---	---	---	---	---	---
Core Number 4			452'-476'	Recovered 24.5'						
29	458.3	452.0-460.9	8.9	1261	0.08	0.05	4.9	2.55	2.68	I S
Similar to No. 29	460.9-461.4	0.5	---		0.08	0.05	4.9	---	---	VF I S
Similar to No. 29	461.4-469.7	8.3	---		0.08	0.05	4.9	---	---	I S
No Sample	469.7-470.3	0.6	---		---	---	---	---	---	D
Similar to No. 29	470.3-471.5	1.2	---		0.08	0.05	4.9	---	---	I S
38	472.2	471.5-472.5	1.0	960	0.14	2.6	5.9	2.51	2.66	I S
Similar to No. 29	472.5-472.8	0.3	---		0.08	0.05	4.9	---	---	I S
39	473.3	472.8-474.0	1.2	831	0.07	0.06	8.0	2.49	2.70	VC I S
Similar to No. 42	474.0-476.5	2.5	---		0.02	0.01	3.0	---	---	I S
Core Number 5			476'-500'	Recovered 24.0'						
42	476.8	476.0-480.4	4.4	1198	0.02	0.01	3.0	2.59	2.67	I S
Similar to No. 45	480.4-482.2	1.8	---		20	(a)	5.2	---	---	VC I S
45	482.5	482.2-482.8	0.6	1063	20	(a)	5.2	2.53	2.66	I S
46	483.8	482.8-484.0	1.2	1086	19	100+	3.6	2.58	2.68	VC I S
Similar to No. 45	484.0-484.3	0.3	---		20	(a)	5.2	---	---	VF I S
Similar to No. 46	484.3-486.2	1.9	---		19	100+	3.6	---	---	I S

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Phone 25624

FULL DIAMETER CORE STUDY REPORT

Operator New Superior Oils of Canada Limited Field Northwest Territories Date May 12, 1952

Well No. Northwest Territories Deep Bay No. 1 Location

Formation Slave Point Limestone Depths 413.0'-665.0' Lab. No. 3206

Sample Number	Midpoint of Sample in Ft.	Representative of Feet	Footage Rep.	Core Wt. Gms.	Permeability md. Vertical	Radial	% Porosity	Bulk Density	Matrix	Description
Similar to No. 42		486.2-488.9	2.7	---	0.02	0.01	3.0	---	---	IS
No Sample		488.9-489.4	0.5	---	---	---	---	---	---	D
Similar to No. 42		489.4-490.0	0.6	---	0.02	0.01	3.0	---	---	VFIS
Similar to No. 42		490.0-495.4	5.4	---	0.02	0.01	3.0	---	---	IS
No Sample		495.4-496.0	0.6	---	---	---	---	---	---	D
Similar to No. 56		496.0-500.0	4.0	---	12	3.3	2.9	---	---	IS
Core Number 6			500'-521'	Recovered 22.0'						
No Sample		500.0-500.2	0.2	---	---	---	---	---	---	D
56	506.1	500.2-509.6	9.4	829	12	3.3	2.9	2.56	2.64	IS
No Sample		509.6-510.1	0.5	---	---	---	---	---	---	D
Similar to No. 56		510.1-516.5	6.4	---	12	3.3	2.9	---	---	IS
No Sample		516.5-517.4	0.9	---	---	---	---	---	---	D
Similar to No. 66		517.4-522.0	4.6	---	0.02	0.009	0.6	---	---	IS
Core Number 7			521'-546'	Recovered 25.8'						
Similar to No. 66		521.0-523.7	2.7	---	0.02	0.009	0.6	---	---	IS
No Sample		523.7-524.0	0.3	---	---	---	---	---	---	D
66	524.2	524.0-524.5	0.5	874	0.02	0.009	0.6	2.64	2.66	IS
No Sample		524.5-524.9	0.4	---	---	---	---	---	---	D
67	525.1	524.9-525.2	0.3	511	0.01	0.009	1.0	2.61	2.64	SVIS
No Sample		525.2-525.8	0.6	---	---	---	---	---	---	D
Similar to No. 66		525.8-528.2	2.4	---	0.02	0.009	0.6	---	---	IS
No Sample		528.2-531.6	3.4	---	---	---	---	---	---	D
Similar to No. 73		531.6-533.2	1.6	---	0.01	0.02	6.1	---	---	IS
No Sample		533.2-539.1	5.9	---	---	---	---	---	---	D
73	545.2	539.1-546.8	7.7	890	0.01	0.02	6.1	2.57	2.74	IS
Core Number 8			546'-570'	Recovered 25.0'						
74	547.0	546.0-549.6	3.6	1149	0.04	0.03	4.9	2.58	2.72	IS
No Sample		549.6-550.8	1.2	---	---	---	---	---	---	D
76	551.2	550.8-553.3	2.5	1149	0.01	0.01	4.7	2.59	2.72	IS
Similar to No. 81		553.3-555.1	1.8	---	24	(a)	3.5	---	---	VFIS
Similar to No. 76		555.1-555.8	0.7	---	0.01	0.01	4.7	---	---	VFIS
Similar to No. 76		555.8-557.5	1.7	---	0.01	0.01	4.7	---	---	IS
Similar to No. 81		557.5-564.8	7.3	---	24	(a)	3.5	---	---	VFIS
No Sample		564.8-568.4	3.6	---	---	---	---	---	---	D
81	568.7	568.4-569.7	1.3	984	24	(a)	3.5	2.62	2.72	VCIS
No Sample		569.7-571.0	1.3	---	---	---	---	---	---	D
Core Number 9			570'-595'	Recovered 29.0'						
Similar to No. 81		570.0-570.8	0.8	---	24	(a)	3.5	---	---	IS
Similar to No. 81		570.8-571.1	0.3	---	24	(a)	3.5	---	---	VFIS
No Sample		571.1-572.0	0.9	---	---	---	---	---	---	D
Similar to No. 81		572.0-573.2	1.2	---	24	(a)	3.5	---	---	IS
No Sample		573.2-574.6	1.4	---	---	---	---	---	---	D
Similar to No. 81		574.6-578.0	3.4	---	24	(a)	3.5	---	---	IS
No Sample		578.0-599.0	21.0	---	---	---	---	---	---	D

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FULL DIAMETER CORE STUDY REPORT

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New Superior Oils of
Operator Canada Limited Field Northwest Territories Date May 12, 1952

Well No. Northwest Territories Deep Bay No. 1 Location

Formation Slave Point Limestone Depths 413.0'-665.0' Lab. No. 3206

Sample Number	Midpoint of Sample in Feet	Representative of Feet	Footage Rep.	Core Wt. Gms	Permeability md. Vertical	Radial	% Porosity	Density Bulk	Matrix	Description
Core Number 10			595'-620'		Recovered 22.6'					
No Sample		595.0-617.6	22.6	---	---	---	---	---	---	D
Missing			2.4	---	---	---	---	---	---	---
Core Number 11			620'-645'		Recovered 24.5'					
No Sample		620.0-626.1	6.1	---	---	---	---	---	---	D
Similar to No. 84		626.1-627.0	0.9	---	0.14	1000 +	2.1	---	---	VF I S
84	627.3	627.0-627.6	0.6	909	0.14	1000 +	2.1	2.60	2.66	I S
No Sample		627.6-628.6	1.0	---	---	---	---	---	---	D
85	630.3	628.6-631.0	2.4	1028	0.004	0.003	1.7	2.59	2.64	I S
No Sample		631.0-631.5	0.5	---	---	---	---	---	---	D
Similar to No. 84		631.5-632.7	1.2	---	0.14	1000 +	2.1	---	---	I S
87	633.3	632.7-633.8	1.1	1231	0.08	0.15	2.1	2.60	2.66	V I S
88	633.9	633.8-635.2	1.4	1002	0.13	0.34	0.7	2.65	2.67	SV I S
89	635.4	635.2-636.9	1.7	1207	0.08	0.05	1.4	2.65	2.69	VC SV I S
90	638.0	636.9-638.4	1.5	645	0.33	1.6	4.2	2.55	2.66	V I S
Similar to No. 85		638.4-639.0	0.6	---	0.004	0.008	1.7	---	---	F I S
Similar to No. 88		639.0-639.7	0.7	---	0.13	0.34	0.7	---	---	SV I S
91	639.9	639.7-642.0	2.3	859	16	294	3.5	2.61	2.71	SV I S
Similar to No. 89		642.0-644.0	2.0	---	0.08	0.05	1.4	---	---	F I S
92	644.3	644.0-644.5	0.5	836	0.02	0.05	2.2	2.53	2.63	SV I S
Missing			0.5	---	---	---	---	---	---	---
Core Number 12			645'-665.5		Recovered 20.0'					
93	645.3	645.0-646.7	1.7	1123	0.007	22	1.3	2.56	2.61	V I S
Similar to No. 92		646.7-647.1	0.4	---	0.02	0.05	2.2	---	---	SV I S
94	647.8	647.1-653.2	6.1	1343	0.14	15	1.9	2.65	2.70	SV S
95	653.5	653.2-653.7	0.5	988	0.05	(a)	5.6	2.52	2.67	GV I S
Similar to No. 94		653.7-654.1	0.4	---	0.14	15	1.9	---	---	I S
96	654.5	654.1-654.7	0.6	1068	10	(a)	6.3	2.47	2.64	CLV I S
Similar to No. 94		654.7-655.2	0.5	---	0.14	15	1.9	---	---	SV I S
97	655.5	655.2-655.9	0.7	1310	0.02	0.01	2.6	2.63	2.70	C SV I S
98	656.2	655.9-656.5	0.6	1136	0.08	4.6	1.7	2.62	2.66	C SV I S
Similar to No. 98		656.5-658.1	1.6	---	0.08	4.6	1.7	---	---	VF I S
99	658.4	658.1-658.7	0.6	755	0.01	0.19	3.6	2.60	2.70	C SV I S
100	658.9	658.7-660.0	1.3	1288	0.03	0.008	1.6	2.65	2.67	C SV I S
Similar to No. 100		660.0-665.0	5.0	---	0.03	0.008	1.6	---	---	F SV I S

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1952

FULL DIAMETER CORE STUDY REPORT
Canada LimitedOperator New Superior Oils of Field Northwest Territories Date May 30, 1952Well No. Northwest Territories Deep Bay No. 1 Location Formation Slave Point Limestone Depths 1301.0' - 1320.0' Lab. No. 3206

Sample Number	Midpoint of Sample in Ft.	Representative of Feet	Footage Rep.	Core Wt. Gms.	Permeability md. Vertical	md. Radial	% Porosity	Density Bulk	Matrix	Description
Core Number 13			1301' - 1321'		Recovered 19.0'					
Similar to 2A	1301.0-1303.5	2.5	---	---	0.006	0.007	0.0	---	---	C D
1A	1303.8	1303.5-1305.0	1.5	575	0.008	0.02	0.1	2.82	2.83	D
2A	1309.7	1305.0-1313.0	8.0	1249	0.006	0.007	0.0	2.90	2.90	D
3A	1313.8	1313.0-1315.4	2.4	1105	0.008	0.005	0.0	2.70	2.70	D
Similar to 2A	1315.4-1320.0	4.6	---	---	0.006	0.007	0.0	---	---	D
Missing	---	---	1.0	---	---	---	---	---	---	---

CORE DESCRIPTION TERMS:

C Crack
D Dense

CORE DESCRIPTION SYMBOLS

D	Dense
Co	Corraline Fragments
VC	Vertical Crack
HC	Horizontal Crack
C	Cracks
VF	Open Vertical Fracture
HF	Open Horizontal Fracture
F	Open Fractures
SV	Slightly Vuggy
V	Vuggy
LV	Large Vugs
I	Intergranular
S	Stained
St	Stylolite
A	Anhydrite
Sh	Scale
Bt	Burtoned
U	Unconsolidated
SS	Sandstone
ls	Limestone
Cg	Conglomerate
Py	Pyrites
Sp	Small Flugs
Ufs	Unconsolidated fine sand
SL	Sand Lenses
ShL	Shale Lenses
CSS	Coarse Sandstone
fss	Fine Sandstone
MSS	Medium Sandstone
Pyb	Pyrobitumen
Shy	Shaly
Cly	Clayey
Sil	Siltstone
R1	Slightly Reactive to Cold 15% HCl
R2	Reactive to cold 15% HCl
G1	Glaucanite
fssi	Fine Sand Lenses

WATER ANALYSIS REPORT

Field **Deep Bay, North West Territories.** Well No. **N.W.T. Deep Bay No. 1.**
Operator **New Superior Oils of Canada Ltd.** Location **Unsurveyed Territory.**
Sampled by Date **Rec. May 9, 1952.**
Formation..... Depths **621'-665'** How Sampled **D.S.T.**
Other pertinent data **D.S.T. No. 4.**

Analyzed by Chemical & Geological Lab. Ltd. Date May 13, 1952. Lab. No. 3221.

PARTS PER MILLION (MILLIGRAMS PER LITER)

Na & K	Ca	Mg	Fe	SO ₄	Cl	CO ₂	HCO ₃	OH	H ₂ S
30600	2165	1302		51	54285		835		Present

MILLIGRAM EQUIVALENTS

1330.63	108.06	107.07		1.06	1531.01		13.69		
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MILLIGRAM EQUIVALENTS IN PERCENT

43.04	3.50	3.46		0.04	49.52		0.44		
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Total Solids in Parts
per Million

By evaporation	92,890
After ignition	87,770
Calculated	88,814
Specific Gravity	1.060
Observed pH.	5.0

Properties of Reaction in Percent

Primary salinity	86.08
Secondary salinity	13.04
Primary alkalinity	0
Secondary alkalinity	0.88
Chloride salinity	99.92
Sulfate salinity	0.08

Remarks and conclusions

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